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Original Research Article

## **Determinants of Corporate Effective Tax Rate: Empirical Evidence from Listed Manufacturing Companies in Nigeria**

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### **Abstract**

*The objective of this study is to identify how some corporate governance attributes (board size and board independence), as well as firm characteristics factors such as size and leverage, can determine the Effective Tax Rate (ETR) of manufacturing firms in Nigeria. Out of the 170 listed firms in Nigeria, as at 31/12/2016, 30 manufacturing firms with complete and consistent data were selected and the period under consideration was from 2011 – 2016. Linear regression was used to analyse the data. Results reveal that firm leverage, board independence and board size were negatively and significantly related to Effective tax rate while firm size was negatively but insignificantly related to ETR. This implies that the higher the firm leverage, board independence and board size, the lower the effective tax rate paid by manufacturing firms in Nigeria. This study, therefore, recommends that firms in Nigeria should make firms should work towards having a large board size as this will influence good strategies in minimising tax expense and invariably bring about the best tax management practices. Also, external board members with experience in accounting, finance and management issues should be highly encouraged as this will reduce the tax rate and bring about efficient tax practices.*

**Keywords:** Corporate Effective Tax Rate, Board Size, Board Independence, Leverage

### **1. INTRODUCTION**

In Nigeria, tax effectiveness, in essence, involves the application of relevant incentive provisions for corporate taxpayers based on enabling laws such as the Company Income Tax (CITA), Personal

Income Tax (PITA), Value Added Tax (VAT) and other enactments. Therefore, an in-depth understanding of tax policies and other regulations as clearly stated in the fiscal policies required for effective tax planning should be given full attention.

### **JEL Classification Codes: M41 M48**

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The Corporate tax planning incentives as contained in the CITA, Property Tax (PPTA) and other laws include pioneer status incentive, commencement rule, cessation rule, investment allowance, and roll-over loss relief. Others include business location or area of operation (free trade zone, rural area investment allowances), tax exemption benefits on loan interest granted by a foreign company to any business in Nigeria, and asset acquisition timing for claims of capital allowances.

According to Graham (2003), taxes are one of the many factors influencing decision-making in companies, especially with regards to investment and funding policies. Given this fact, Hanlon and Slemrod (2007) report that shareholders are interested in reducing the burden of taxes in order to increase company value. However, corporate effective tax rate through tax management, tax administration, tax planning, and tax avoidance are defined as a legal way of reducing expenses on taxes when taxpayers identify opportunities in the laws to decrease companies' tax burden (Desai & Dharmapala, 2006; Formigoni et al., 2009; Minnick & Noga, 2010; Tang & Firth, 2010; Goncharov & Zimmermann, 2005).

Therefore, corporate tax effectiveness tends to reduce the current value of companies' taxes in order to increase their performance and, as a consequence, their market value through legal ways and among the opportunities observed in tax legislation (Machado, 2011). In this vein, Desai and Dharmapala (2006) report that tax effectiveness is a legal transfer of State resources to companies to increasing their performance, by reducing expenses on taxes. As a result, many researchers have shown that tax effectiveness management is a valuable activity for shareholders (Bankman, 1999; Graham & Tucker, 2006; Desai & Dharmapala, 2007; Frank, Lynch & Rego, 2009; Wilson, 2009).

It is believed that the increased performance of a company can be reached through tax management, which can be understood as a legal way of reducing expenses on taxes, when taxpayers identify opportunities in law to decrease companies' tax burden (Goncharov & Zimmermann, 2005; Tang, 2005; Desai & Dharmapala, 2006; Formigoni, Antunes, & Paulo, 2009; Minnick & Noga, 2010; Tang & Firth, 2010).

Many studies (Desai & Dharmapala, 2006; Dyreng, Hanlon, & Maydew, 2008; Robinson, Sikes, & Weaver, 2010; Armstrong, Blouin, & Larcker, 2011) report that tax management may be measured through three proxies: Effective Tax Rate (ETR), Cash Effective Tax Rate (Cash ETR), and Book-Tax Differences (BTD). ETR is the result of dividing expenses on taxes by company's earnings before taxes; so that ETR is the effective tax rate on a company's profit. In turn, Cash ETR is the effective tax rate taking only taxes paid into the account, without deferred taxes and analysing in the long term. Moreover, finally, BTD is the difference between book earnings and taxable earnings, considering that, if the latter is smaller than the former, there is evidence of tax management.

As documented by Graham (2003) effective tax rates can affect corporate decision making and other related aspects such as capital structure, payout policy and risk management. Taxes are viewed as an enhancing component of bottom line firms' performance. Robinson, Clark and Rudmoore (2010) noted that if a firm's tax department is categorised as a "profit centre" then it will be associated with lower effective tax rates but as a "cost centre" then it will be associated with the higher effective tax rate. Therefore, any reduction in taxes paid contributes to an increase in earnings disclosed in the financial statements. However, considering that the main purpose of firms' activity should be creating value to shareholders, actions to

minimise the tax burden should be in line with that objective.

Due to the convenience of adopting an effective tax rate for measuring the tax burdens of corporations, effective tax rates (ETRs) have long been used by policymakers and interest groups in tax reform debates, especially those related to corporate tax provisions. Given this preliminary context, the link between tax management and corporate governance is discussed for two reasons. Firstly, tax management can be complex and obscure, i.e. in order to obtain effective tax management the company may be encouraged to adopt complex corporate structures or invest in tax havens that do not require accounting information. Thus, it gives room for managerial opportunism, i.e. within complex and obscure structures managers have opportunities to pursue interests of their own to the detriment of shareholders' interests. An example of this practice was reported by Desai and Dharmapala (2007) regarding the conclusions by the Joint Committee on Taxation (JCT) in the ENRON case. Secondly, tax management involves significant uncertainties, since it must be executed before the taxable event so that it does not characterise tax avoidance, i.e. tax crime. Thus, the benefits of tax management may fail to occur. Therefore, the knowledge of how corporate governance will work to mitigate risks for complex and obscure tax management and contribute to the benefits of tax management provides some understanding into shaping corporate governance practices in order to lead the company to achieve the shareholders' primary goal, which is the goal of increased firm value.

According to Nnadi and Akpomi (2014), Nigeria has experienced growth in the stock market, where more and more investors employ their savings in publicly traded corporations. Accordingly, the agency problem risk increases hence must be

discussed. Another aspect that deserves attention is tax management in these corporations, as the Nigerian tax legislation complexity, coupled with the increased expenses on taxes, may encourage companies to manage their taxes, creating room for managerial opportunism. According to the manuals on good corporate governance practices by the Nigerian Securities and Exchange Commission (NSE), a company can boost its performance, as well as bring benefits to the whole society, by adopting internal and external mechanisms to ensure that corporate decisions are made in the best interest of investors, which is for maximizing the probability that resource providers have a positive return on their investment Okoye and Akenbor (2010). To do this, one of the main internal mechanisms that these manuals propose that the Board of Directors, which, according to Silveira (2002), plays a key role in companies' corporate governance, therefore acting as the main internal mechanism to reduce agency costs between shareholders and managers, as well as between controlling and minority shareholders. According to Fama and Jensen (1983), the decision-making process of senior management involves four stages, two of which should be the sole responsibility of the Board: ratification of relevant decisions and monitoring of senior management.

Many studies have paid attention to the influence of firms' specific characteristics on ETRs (Gupta & Newberry, 1997; Desai & Dharmapala, 2006; Dyreng., Hanlon & Maydew 2008; Hanlon & Heitzman 2010; Minick & Noga, 2010; Armstrongs 2012). While most of them are based on U.S. corporations (Stickney & McGee, 1982; Zimmerman, 1983; Gupta & Newberry, 1997; Manzon & Plesko, 2002; Rego, 2003), some investigations have used financial data from Australia (Harris & Feeny, 1999; Richard & Lanis, 2007) and also relevant data associated with German corporations such as studies of

(Suleth, Rodriques & Ario, 2009; Kraft, 2014), Related studies from the U.K. includes that of (Ribeiro, Cerqueira & Brandao, 2015), while (Janssen & Buijink, 2000) conducted similar studies by employing related dataset from the Netherlands. In Malaysia (Noor, 2010; Mhenthiran & Kasipillai, 2011) documented their findings from similar studies, while a similar study by (Liu & Cao, 2007) was contributed by China. These studies adopted various empirical methods and procedures, considering similar influential factors, but obtained different results.

Within the Nigerian context, studies on the relationship between tax effectiveness and corporate governance attributes have remained majorly unravelled empirically. In a nutshell, there has been a paucity of research explicitly focusing on listed companies in Nigeria. However, Okoye and Akenbor (2010) did investigate the effect of accounting policies on corporate tax planning in Nigerian listed firms. Also, the study of Kibel and Akenbor (2014) on tax planning among Nigerian banks focused on firm size as a determinant of the effective tax rate in Nigeria by employing the ordinary least squares regression technique. Furthermore, Efeloo and Dick (2018) on the study An empirical review of the determinants of tax evasion, emphasised the formal sector operators in Portharcourt metropolis of Nigeria. Salaudeen and Eze (2018) stressed on firm-specific determinants of the corporate effective tax rate in Nigeria. Again from the Nigerian context, and in line with this study Oyesola (2017), examined corporate governance and tax planning among non-financial quoted companies in Nigeria while Salaudeen (2017) studied corporate effective tax rates in the financial sector of Nigeria. From the foregoing, we find that there is a dearth in the literature on the specific subject of corporate governance attributes and effective tax rate among manufacturing companies in Nigeria of which this study advances the literature by identifying some

corporate governance attributes such as board size and board independence with a mix of firm characteristic factors of size and leverage as determinants of ETR among manufacturing companies in the Nigerian economy.

The remainder of the paper is organised as follows: In Literature review where we provide conceptual literature, review of related literature and appropriate theoretical background; this is followed by the methodology; then we present our results and discuss our findings. We end with conclusion and recommendations.

## **2. REVIEW OF LITERATURE**

### **Empirical Literature**

There have been many studies on the impact of various factors on the effective tax rate (ETR) with conflicting results. For instance, Zimmerman (1983) observes a positive association between ETRs and firm size while Porcano (1986) observes a negative association. Stickney and McGee (1982) and Shevlin and Porter (1992) found no association between ETRs and firm size. Wang, Campbell and Johnson (2014) examine the ETR of listed companies in China and investigate the causes of differences of ETR in the various sector of the China economy adopting two measure of ETR (GAAP and CASH ETRs). Their findings show that real estate has the highest CASH ETR and GAAP ETR and the agricultural sector has lowest ETRs. Leverage and asset mix are positively related to both measure of ETR, while state control is positively related to CASH ETR but not GAAP ETR and firm size is positively related to GAAP ETR but not to CASH ETR.

From the context of the Chinese economy, Liu and Cao (2007) did not find any significant relationship between firm size and asset mix (capital intensiveness) and ETR while leverage has a negative impact on ETR. These conflicting results may be definition related. Liu & Cao define ETR as

tax expenses less deferred tax provisions over earnings before interest and tax. Nicodeme's (2001) contention that different definitions of ETR produce different results would seem to have played out here.

Dyrenge, Hanlon and Maydew (2008) document the positive effect of firm size, return on assets, leverage, R&D expenditure on cash ETR and negative effect of advertising expense. They also document the positive effect of the individual executive on ETR in their 2010 study. In the study of Rohaya, Mastuki and Bardai (2008) firm size and return on assets were found to be strongly related to both measures of ETR used in the study.

Dyrenge et al. (2008) tracked the movement of 908 executives across 1,138 US firms during the years 1992 to 2006. They found that individual executives play a significant role in determining ETR. The difference between the top and bottom quartiles showed an 11 percent difference in GAAP ETR.

Dyrenge et al. (2008) used the long-run cash ETR to examine (1) the extent to which some firms can avoid taxes over periods as long as ten years, and (2) the extent to which one-year tax rates are predictive for long-run tax avoidance. In their sample of 2,077 US firms, they found that there is considerable variation in tax avoidance. For example, approximately one-fourth of the sample firms were able to maintain long-run cash effective tax rates below 20 percent, compared to a sample mean tax rate of approximately 30 percent.

Olhoft (1999) data were obtained from Compustat for the years 1990 through 1997, both U.S. multinational and U.S. domestic corporations. The study examined which variables play a key role for firms that avoid more income taxation, resulting in lower effective tax rates (ETR, in this study, is defined as the ratio of current income tax expense to pre-tax accounting income).

Holding the income constant, larger firms (total net sales) pay more tax per dollar of income than smaller firms do. However, firms with greater income pay less tax per dollar of income than firms with less income do. Hence, higher income is associated with income tax avoidance; larger firm size is not. Multinational firms have a stronger negative relationship between income and ETRs, suggesting that multinational companies avoid more tax per dollar of income than U.S. domestic companies.

Stickney and McGee (1982) defined ETR as total income taxes payable divided by book income before taxes adjusted for the effect of timing differences. Using the data from Compustat between the years 1978 and 1980 for U.S. companies, the authors found that Capital intensity, leverage, and natural resources involvement indicated lower ETR. Whereas foreign operations and size were a less important indicator of lower ETR.

Wu, Wang, Luo and Gillis (2012) examined all non-financial public companies listed in China's A-share market between 1998 and 2006 to determine how state ownership, tax status and firm size affect ETR. They found that privately controlled firms had a higher ETR than state-controlled firms.

Heshmati, Johansson and Bjuggren (2010) analysed the effects of ETRs on the size distribution of Swedish firms from 1973 – 2002. Time and industry effects were considered. They found that ETRs differ by firm size, industry and over time. Smaller firms had a higher ETR than larger firms, and there was inequality in the mean and variance of ETRs between industrial sectors. They conclude that ETRs affect the size distribution of firms as well as the composition of industries and that the Swedish tax system favours capital-intensive sectors and firms.

Employing Romanian company data, Sebastian (2010) determines whether

Romanian companies experienced an impact on ETR with the statutory tax rate cuts that took place. They found that ETR was consistently less than the statutory rate and that, by industry, general commerce had the lowest ETR and the energy sector had the highest ETR.

Noor, Mastuki and Bardai (2008) studied a sample of 294 large Malaysian companies (1470 firm-years) between the years 2000 to 2004. They found that real estate, trading and services, and construction companies had higher ETRs and that lower ETRs were associated with highly leveraged companies and with companies that had greater investments in fixed assets and had extensive foreign operations.

Firm leverage (proxy by total liability/total asset) could affect effective tax rate since interest is tax deductible (Liu & Cao, 2007; Noor, Mastuki, & Bardai 2008). Asset mix (proxy by long-term assets/total assets; long-term assets include fixed and intangible assets) could influence effective tax rate since the more capital intense the company is, the more depreciable assets the company will have.

Zimmerman (1983) documents that larger firms are associated with higher effective tax rates. The political cost theory can explain this. Accordingly, if larger firms are more successful than smaller firms, they will be exposed to more political scrutiny. As larger firms are subject to higher scrutiny from tax authorities, they have the reluctance to reduce effective tax rates. Consequently, larger firms are expected to have a higher tax burden when compared with firms which have a smaller dimension since taxes paid represent political costs which shall be borne by firms.

Dyrenget al. (2008) and Richardson & Lanis, (2007) find a negative relation between size and ETR. However, other studies report that firms' size has a positive impact on

effective tax rates (Rego, 2003; Vieira, 2013; Kraft, 2014).

Richardson and Lanis (2007) and Kraft (2014) find a significant negative relationship between leverage, used as a proxy for capital structure, and effective tax rates. Due to this advantage associated with the debt tax shield, our prediction is in line with the extant literature and, hence, we expect a negative association between debt financing and ETRs.

### **Theoretical Framework**

#### ***Political Costs Theory***

Political cost theory explains why interested parties who require more information about a firm's tax policies ask for increased levels of disclosure which leads companies to adopt tax disclosure (Deegan & Hallam, 1991). This new wave of requirements initiates changes in accounting procedures which are not costless to firms (Watts & Zimmerman, 1978). These procedural changes will either raise information disclosure or require corporations to change accounting methods, consequently raising the firms' book-keeping costs (including increases in cost related to disclosing information about taxes).

Furthermore, as noted by (Leftwich, Watts, & Zimmerman, 1981) political cost theory can assist in explaining the decisions of voluntary reporting. In considering the theory of political costs, taxes and regulation, as well as the factors that determine the welfare of management will assist to understand better the origin of pressures that tend to drive the development of accounting standards (Watts & Zimmerman, 1978). The costs of contracting which include agency transaction, information, renegotiation, and bankruptcy costs are all crucial for the selection of accounting models (Watts & Zimmerman, 1990).

In summary, according to political cost theory, companies that are subject to high

political costs (which highly rely on the size of the firm) will probably supply and disclose further information about tax (Watts & Zimmerman, 1978). The political cost theory states that large corporations, rather than small companies, are more likely to utilise accounting choices that decrease declared profits (Watts & Zimmerman, 1990).

### 3. METHODOLOGY

#### Sample Selection and Data Collection

For the sample, public listed manufacturing firms from the Nigerian stock market for the period of 2011-2016 were considered. The data for this study is based on secondary data. The financial data on the explanatory and the dependent variables of individual companies have been collated from annual reports and accounts of companies listed on the Nigerian Stock Exchange (NSE). In total, the sample population contained approximately 170 listed firms (List updated as at 31 December 2016) and the final target sample with complete and consistent data were 30 manufacturing firms. .

#### Model Specification

The Panel Data Regression model below is specified to examine the determinants of effective tax rate of listed manufacturing companies in Nigeria;

$$CETR_{it} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 LEV_{it} + \beta_3 BSIZE_{it} + \beta_4 BIND_{it} + \epsilon_{it} \dots \dots \dots (i)$$

Where CETR is for Cash Effective Tax Rate,  $\beta_0$  is the constant,  $\beta_1, \beta_2, \dots, \beta_4$  are coefficients, FSIZE represents firm size, LEV is firm leverage, BSIZE is board size, BIND is board independence,  $\epsilon$  is the error term, I is the *i*th firm, and t is the firm years between 2011 and 2016.

#### Data Analysis

Fixed effects models and random effects models are two main approaches to empirical research based on panel data since both models can control for unobserved time-invariant heterogeneity peculiar to economic agents. Fixed effects models assume that the heterogeneity is correlated

with the explanatory variables while random effects models suppose the individual specific effects are uncorrelated with the explanatory variables. The result of a Hausman testis conducted to determine which model would be appropriate in this context.

### 4. RESULTS AND DISCUSSION OF FINDINGS

Appendixes 1 & 2 shows the mean (average), maximum, minimum, standard deviation, sum, variance standard error of the mean and median for each of the variables regarding companies and terms offirm-year. The result reveals that board independence of most of the sampled companies (17 of the sample) is greater than 70%. These are Aluminium Extras (71.43%) Berger Paints Nig. (76.67%), Beta Glass Plc. (77.78%), Champion Brewery (80.00%), Curtix Plc (71.43%) Dangote Cement (80.55%), Dangote Sugar (75.25%), Dn Meyer (75.00%), Flour Mills of Nig. (75.12%) Glaxo SmithKline (85.16%), Guinness Nig. (78.57%), Lafarge Cement Wapco (70.59%), Morrison Industries (77.78%), Nascon Allied (77.78%), Nigerian Enamel (71.43%), Nigerian Northern (72.73%) and Pharma-Deko (70.00%) However, GlaxoSmithKline is considered to have the best independent board in the sample under study since the ratio of non executive directors to executive directors stood at 85.16% above all other companies in the sample. For the variable of board size, the descriptive statistics revealed that Larfarge Cement Plc (19) has more board members than the other listed company in the sample under study. However, the smallest size board is revealed to be Multiverse (4) and Grief Nig (4). From the descriptive statistics results, we observe that the smallest firm in the sample regarding assets size is Menichols Consol (5.35) while Dangote Cement (9.18) is revealed to be the biggest among them. However, the statistics revealed that all the firms have a median size of 7.03. In this research study leverage which is an

investment strategy of using borrowed money to increase the potential return of investment was utilized most by Champion Brewery in the year 2012 and least utilized by Aluminium Extras in the year 2016.

Pearson correlation matrices in the table below show that all the correlation coefficients are less than 0.8, which is the limit or cut off correlation percentage commonly suggested by prior studies after which multicollinearity is likely to be present (Gujarati, 2003).

	fsize	leverage	cetr	bsize	bind
<b>fsize</b>	<b>1.0000</b>				
<b>leverage</b>	<b>0.1218</b>	<b>1.0000</b>			
<b>cetr</b>	<b>-0.0526</b>	<b>0.0454</b>	<b>1.0000</b>		
<b>bsize</b>	<b>0.6016</b>	<b>0.0756</b>	<b>-0.0743</b>	<b>1.0000</b>	
<b>bind</b>	<b>0.0694</b>	<b>-0.0437</b>	<b>-0.0995</b>	<b>0.2916</b>	<b>1.0000</b>

Source: Author's Computation 2018

The correlation matrix above, suggests that there is no multicollinearity among the independent variables of interest. However, the result of skewness and kurtosis test for normality seen in the table below shows that

all the variables of interest are normally distributed since they all pass at 1% except for the variable of firm size and board independence which revealed a significance level of 5%.

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
<b>fsize</b>	<b>219</b>	<b>0.2598</b>	<b>0.0219</b>	<b>6.30</b>	<b>0.0428</b>
<b>leverage</b>	<b>218</b>	<b>0.0000</b>	<b>0.0000</b>	<b>67.81</b>	<b>0.0000</b>
<b>cetr</b>	<b>217</b>	<b>0.0000</b>	<b>0.0000</b>	<b>.</b>	<b>0.0000</b>
<b>bsize</b>	<b>218</b>	<b>0.0004</b>	<b>0.4756</b>	<b>11.29</b>	<b>0.0035</b>
<b>bind</b>	<b>218</b>	<b>0.0090</b>	<b>0.1443</b>	<b>8.22</b>	<b>0.0164</b>

**Effective Tax Rate Regression Model**

Variables	Fsize	leverage	Bsize	bind	Cons
<b>Random Effect</b>	0.270 (0.05) {0.96}	0.055 (0.32) {0.748}	-1.358 (-0.84) {0.403}	-0.235 (-1.00) {0.317}	50.150 (1.29) {0.197}
<b>Adj R<sup>2</sup></b>	0.23				
<b>Prob Wald Chi<sup>2</sup></b>	0.59				
<b>Fixed Effect</b>	-1.685 (-0.06) {0.954}	-0.081 (-2.38) {0.006}**	-4.120 (-3.75) {0.002}**	-0.022 (-2.75) {0.001}**	-97.04 (0.47) {0.637}
	0.23				

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<b>Adju R<sup>2</sup></b>	0.0044**
<b>Prob F</b>	0.50
<b>Hausman</b>	

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Source: Author's Computation 2018

Note: t-statistic and probability statistics are represented in ( ) and { } respectively  
Where: \*\* represents 5% level of significance

In testing for the cause-effect relationship between the dependent and independent variables in the cash effective tax rate model (CETR) the two widely used panel data regression estimation techniques (fixed effect and random effect) were adopted. The table above presents the two-panel data estimation techniques results. The results revealed a difference in the magnitude of the coefficients, signs and some insignificant variables. In selecting from the two-panel regression estimation results, the Hausman test was conducted, and the test is based on the null hypotheses that the fixed effect model is preferred to random effect model. A look at the p-value of the Hausman test result of 0.91 implies that we should accept the alternative hypothesis in drawing our conclusion and recommendations.

The adjusted R-Squared of 0.23 indicates that the changes in its examined determinants explain 23% of the changes in the variable of cash effective tax rate. The value of R Squared is considered acceptable in comparison to findings in the prior literature. For example, the reported R Squared is comparable to that of Halme and Huse (1997) as 21.2%, Peters and Romi (2011) at 38% and Peter et al. (2011) at 20%. The p-value (0.004) of the Fisher Statistics (F-Statistics) shows that the cash effective tax rate fixed effect regression model is generally significant and well specified. This implies that the model passed the overall significance test at 5% level. In addition to the above, the specific finding from each explanatory variable from the fixed effect panel regression model is provided as followings:

The random effect panel model presented above show that only the variables of firm leverage (coef -0.081, t = -2.38 &P >/t/ 0.006) board size (coef -4.120, t = -3.75 &P >/t/ 0.002) and firm board independence (coef -0.022, t = -2.75 &P >/t/ 0.001) passed the statistical significance test at 5% respectively.

### Discussion of Findings

Similar to the findings of (Liu & Cao, 2007; Noor, Mastuki, & Bardai 2008) the variable of firm leverage revealed a significant negative effect on effective tax rate in Nigeria. This indicates that as the firm leverage ratio increases, the value of effective tax rate declines. This is likely because interest is tax deductible. However, the findings from this current study did not support the findings of Wang, Campbell & Johnson (2014) and Dyrenget al. (2008) who found a significant positive relationship between the variable of firm leverage and effective tax rate.

The effectiveness of the board on tax-related issues depends on its size (Jensen, 1993). Minnick and Noga (2010) note that small boards of directors strengthen good tax management, while large boards have been proved to be ineffective as they are always faced with difficulties in decision-making about tax effectiveness policies. Likewise, Lanis and Richardson (2011) reported that the size of the board has a significant positive effect on effective tax rate which is synonymous with tax planning. In contrast, Aliani and Zarai (2012) reported an insignificant relationship between the size of the board and tax effectiveness in the American context. They found that the number of directors does not influence the

strategies to minimise tax expenses. Our empirical analysis suggests that as more and more members are included in the board, the effective tax rate will decline implying good tax management.

For the variable of firm size, our results do not agree with the political cost theory provided by Jensen and Meckling (1976). This theory argues that companies are subject to political pressure. Under the political cost theory, larger and more profitable firms have greater public visibility, which encourages the government to take regulatory action that is disadvantageous for these firms in order to achieve a transfer of wealth (Zimmermann, 1983; Watts & Zimmerman, 1990). Influential voters may lobby for wealth transfer by advocating, for example, social responsibility, more regulation, divestiture, or higher corporate taxes (as a method of transferring wealth away from the firm) hence taxes become a part of the total political cost that firms must absorb. Thus, the political cost theory argues that larger firms have higher ETR due to the political cost of visibility. However our study which reveals an insignificant relationship between firm size and cash effective tax rate agrees with the findings of Stickney and McGee (1982); Liu and Cao, (2007).

Our empirical analysis suggests that as more independent directors are included in the board, there will be a lower effective tax rate. This finding agrees with the claims of Erle (2008) that the board of directors bears the ultimate responsibility for fulfilling the tax obligations of the corporation, and is involved directly in the corporate tax planning strategy. It also lends credence to the study of Minnick and Noga (2010) which suggest that independent directors can reinforce tax management because they can provide useful knowledge and background from their industry and experience. Furthermore, it supports the study of (Yermack, 2004; Fich & Shivdasani, 2007). Beasley (1996) argue that board

composition differs between fraud firms and non-fraud firms. He confirms that the percentage of outside directors on the board of director is lower for fraud firms compared to no-fraud firms in the American context. He also suggests that the inclusion of a high proportion of independent directors prevent fraudulent actions. This research shows that listed firm in Nigeria with more effective monitoring of management are less likely to be involved in corporate fraud; also non-executive directors have little incentive to engage in this type of behaviour.

## 5. CONCLUSION

Our research adds some insights to the extant literature by providing evidence about how and what affects and determines effective tax rates. Firstly, we use a different sample than the large majority of previous studies. Research studies based on the analysis of Nigerian firms are scarce hence; we focus on non-financial (manufacturing) firms listed on the Nigerian Stock Exchange. Our results provide evidence on the impact of firms' non-financial characteristics (firm leverage and firm size) on the effective tax rate. Moreover, we enlarge literature related to corporate governance characteristics and its influence on the effective tax rate. We combine two corporate governance variables of board size and board independence.

In contrast with most of the studies, our variables have the advantage of being measured year by year. Our empirical finding suggests that firm characteristic variable of leverage (LEV) revealed a significant negative effect on effective tax rate but firm (FSIZE) size has no impact on effective tax rate among manufacturing companies in Nigeria. Furthermore, findings from board characteristic variable of board size (BSIZE) and board independence (BIND) suggest that both variables have a significant impact on effective tax rate hence they are possible determinants of

effective tax rate among manufacturing companies in Nigeria.

## 6. RECOMMENDATIONS

In line with the findings of this research work, the following recommendations are made:

1. Manufacturing firms in Nigeria should make efforts to keep their leverage ratio as high as possible to get tax deductions that will reduce their tax rates.
2. Manufacturing firms should work towards having a large board size. This will influence good strategies in minimising tax expense and invariably bring about the best tax management practices.
3. External board members with experience in accounting, finance and management issues should be highly encouraged as this will reduce the tax rate and bring about efficient tax practices.

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