IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Corporate Taxation and Financial Leverage of Listed Non-Oil Exporting Companies in Nigeria

[1]Ezeoma, Kelechi Iheonukara, [2]Ohale L., [3]Nteegah, Alwell
[1]Doctoral Student, [2] Professor, [3] Senior Lecturer
[1]Institute of International Trade and Development (IITD)
[1]University of Port Harcourt, Nigeria

Abstract: This study investigates the extent to which both direct and indirect taxes affect corporate financial leverage for listed non-oil exporting companies in Nigeria using the panel data framework. While direct taxation is proxied by company income tax, indirect taxation is proxied by value added tax. The study involves nine (9) listed non-oil exporting companies and covers the period from 2015 to 2022. The companies are Beta Glass, Cadbury Nigeria, Dangote Cement, Flour Mills, Guinness Nigeria, Nestle, Okomu Oil Palm, PZ Cussons, and Unilever Nigeria. The empirical analysis is based on a dynamic panel data model that incorporates firm size, profitability, and corporate governance as control variables. First, we compare the performance of the three conventional panel estimation methods (pooled regression, fixed effects, and random effects) based on Likelihood Ratio and Hausman specification tests and find that the specified model is consistent with the fixed effects theory. More specifically, our findings show that cross-sectional heterogeneity, arising mainly from the differences in organizational culture, organizational leadership, and/or management style, is an important aspect of the dynamic relationship between corporate taxation and financial leverage. Further, in contrast with the trade-off theory, we find that debt capital is not significantly related to both company income tax and value added tax. Hence, we conclude that corporate taxation is not a significant explanatory factor for corporate financial leverage.

Keywords: Company income tax, value added tax, financial leverage

INTRODUCTION

Debt financing or financial leverage at the corporate level has continued to dominate both theoretical and empirical research in economic, accounting, and finance. Debt financing means the reliance on debt sources such as bonds, promissory notes, and bank loans to fund new corporate projects. Like other sources of corporate capital, debt has both direct and indirect costs. While the direct costs of debt include bankruptcy or financial distress costs, the indirect costs of debt include debt overhang, asset substitution, and asset fire-sales (Korteweg, 2010). However, the benefits associated with the use of debt includes include interest tax shields (Kraus & Litzenberger, 1973) and free cash flow reduction (Jensen, 1986). Also, research shows that levered companies are generally more profitable and more valued in the stock market than unlevered companies (Korteweg, 2010; Qiu, & La, 2010). Hence, debt is attractive as it complements equity capital and provides net benefits to the firm, which is defined by Korteweg (2010), as the net present value of all benefits (i.e., present value of all benefits less costs of debt).

The relationship between financial leverage and its firm-specific determinants is one of the most contentious topics in accounting, finance, and economics literature. One important determinant of financial leverage that has emerged from the literature is corporate taxation. In theory, this relationship is direct as corporate managers tend to rely heavily on debt because of its tax benefits. The theoretical argument on the direct connection between taxation and debt ratios is rooted in the seminal works of Modigliani and Miller (1958, 1963) and Kraus and Litzenberger (1973). These influential scholars convincingly establish the trade-off between the cost of debt and the benefit of debt. They contend that corporate managers typically face a trade-off between tax advantage of debt and the bankruptcy cost of debt in their journey to attaining an optimal capital structure (that is, the debt-equity ratio that minimizes a firm's cost of capital and maximizes its market value). In other words, a levered firm can attain an optimal debt level or, at least, reap the net benefit of debt by balancing the tax advantage of debt against both the direct and indirect costs of debt. Hence, corporate taxation is an important explanatory variable in the financing model of a levered firm.

There is a vast empirical literature that seeks to empirically validate the trade-off theory by examining the relationship between taxation and corporate financial leverage. However, the literature review shows that much of the previous studies focuses on the developed countries. Hence, examining the impact of corporate taxation on financial leverage in Nigeria would provide further empirical

insight on the behaviour of corporate managers in the developing countries respond to changes in corporate taxes in relation to their capital structure.

This study contributes to the growing empirical literature by investigating the impact of corporate taxation on financial leverage within a dynamic panel framework using data collected at yearly frequency on listed non-oil exporting firms in Nigeria for the period from 2015 to 2022. The current study is distinct in three ways. First, compared to previous studies, it is, to our knowledge, the most recent study in this line of empirical research using up to date firm-level data and focusing on listed non-financial and non-oil exporting companies in Nigeria. Secondly, the use of a dynamic panel framework that captures the feedback of the taxation-debt relationship by incorporating the lagged debt capital in the financial leverage model is novel in the Nigerian literature as previous studies are largely based on static regression models. The advantage of this modeling approach is that it effectively deals with the endogeneity problem that is caused by omitted variable bias without compromising the cross-sectional heterogeneity typically associated with panel data. Finally, the study examines the effects of both direct and indirect taxes on financial leverage. While direct taxation is proxied by company income tax, indirect taxation is proxied by value added tax. Again, to our knowledge, this is a novel approach as none of the recent studies in Nigeria considers both tax dimensions in relation to financial leverage.

The remainder of this study is organized into four sections. The next section reviews the previous empirical studies on taxation and financial leverage. Section 3 discusses the data, model, and methods use for empirical analysis. Section 4 contains model estimation and analysis of the empirical results, while the study is concluded in section 5.

LITERATURE REVIEW

There is much consideration of the impact of taxation on financing decisions in the empirical literature. However, there is a scanty but growing literature on taxation-leverage relationship from the perspective of developing countries such as Nigeria. This section reviews some of the recent studies on the effects of corporate taxation on financial leverage across the world. The review focuses on studies that are published between 2010 and 2022.

Egger et al. (2010) use a standard model of tax-debt relationship to examine the effects of corporate taxation on debt-assets ratio, comparing domestically and foreign-owned plants in Europe. Using data from 32,067 European firms, their findings show that corporate tax rate and corporate debts are positively related and that the difference in debt ratio between domestically owned firms and firms owned by foreigners increases with statutory corporate tax rate.

Pfaffermayr et al. (2013) analyzes the impact of corporate taxation on corporate debt for firms in EU countries. Their empirical analysis is based on cross-sectional data collected on 405,500 manufacturing firms operating in 35 EU countries. It is found that corporate taxation has a significant positive effect on debt ratio. Also, their results indicate that the impact of corporate taxation on corporate debt ratio is positively moderated by firm age.

Lin et al. (2014) seek to validate the trade-off theory by examining the impact of different measures of tax aggressiveness on corporate financial leverage for a large sample of 1500 US firms. Based on a fixed effects model that controls for both cross-sectional heterogeneity and period effect, they find that various measures of tax aggressiveness are important explanatory factors for corporate financial leverage.

Devereux et al. (2017) use a dynamic panel regression framework to investigate the extent of the relationship between corporate income taxes and capital structure of UK firms. For the fiscal years from 2001 to 2009, they find that corporate taxation exerts a large and positive long-run impact on financial leverage, and hence validating the theoretical view that taxation plays an important role in the firms' financing models. However, their analysis also show that financial leverage responds to marginal tax rate as opposed to average tax rate, and that the marginal tax rate based on tax returns has higher explanatory influence on financial leverage than the marginal tax rate based on financial statements.

Zafar et al. (2019) considers the effects of corporate taxation and other micro- and macro-level determinants of corporate financial leverage, focusing on banks in 16 Emerging Asian countries. Using the random effects method, their results based on data collected from 2008 to 2014, show that corporate taxation is among the significant firm-specific determinants of financial leverage.

In China, Zou et al. (2019) examine the impact of value added tax reforms on financial leverage using a large dataset comprising observations on firms operating in different industries such as manufacturing, mining, electricity, and utility. They find that VAT reform leads to a significant reduction in corporate financial leverage.

Fleckenstein et al. (2020) investigate empirically the link between corporate taxation and financial leverage in the US using an extensive time series data set from 1926 to 2013. Their finding shows that, with the exception of the smallest firms, corporate tax rate has a strong and direct explanatory power for changes in financial leverage. Specifically, it is found that a 1% increase in marginal tax rate is associated with about 0.15% increase in financial leverage. These results holds for both financial and nonfinancial companies as well as after controlling for other firm-specific and macroeconomic variables.

METHODOLOGY

Data and Sample

To examine the impact of corporate taxation on financial leverage, we panel data comprising 72 firm-year observations from nine (9) listed non-oil export companies for the period: 2015 – 2022. The companies are Beta Glass, Cadbury, Dangote Cement, Flour Mills, Guinness, Nestle, Okomu Oil Palm, PZ Cussons, and Unilever. Corporate taxation has two aspects: namely, company income tax and value added tax. While the former is used to proxy direct taxes, the latter is a proxy for indirect taxes. On the other hand, financial leverage is measured in terms of total debt stock. All data are obtained from the annual reports and accounts of the individual companies downloaded from their official websites as well as the Nigerian stock exchange. Data analysis is aided by Excel and EViews software packages.

Figures 1 – 3 show the means and standard deviations for Debt Capital (DTC), Company Income Tax (CIT) and Value Added Tax.

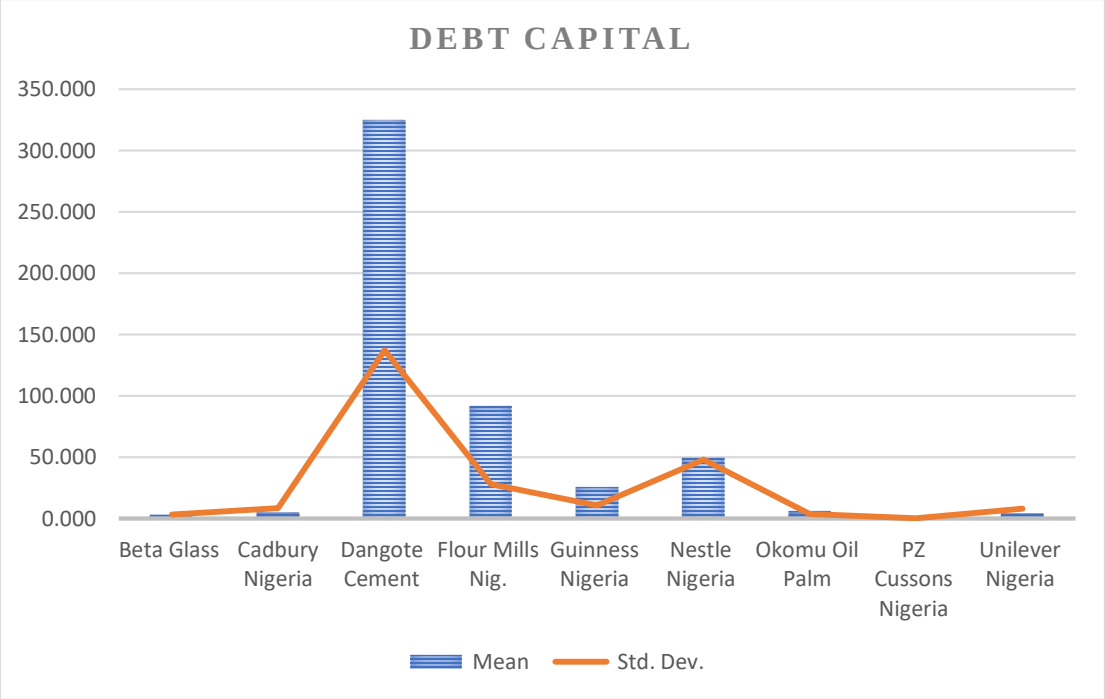

Figure 1: Mean and Standard Deviation for DTC

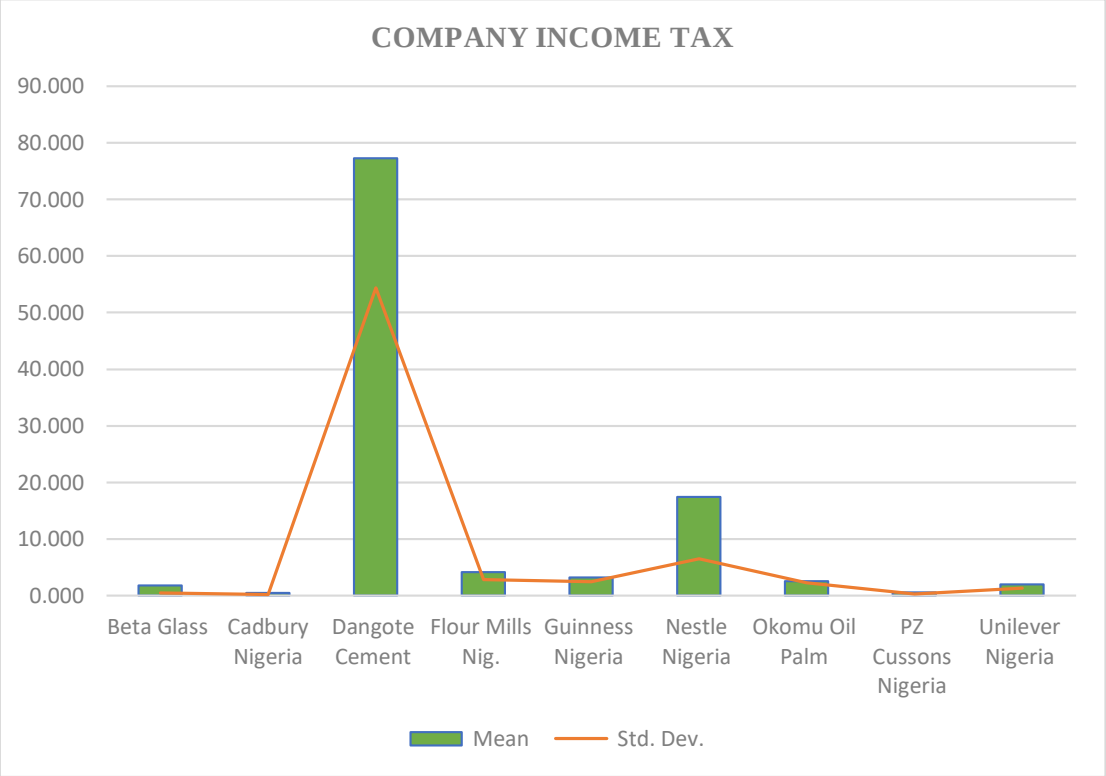

Figure 2: Mean and Standard Deviation for CIT

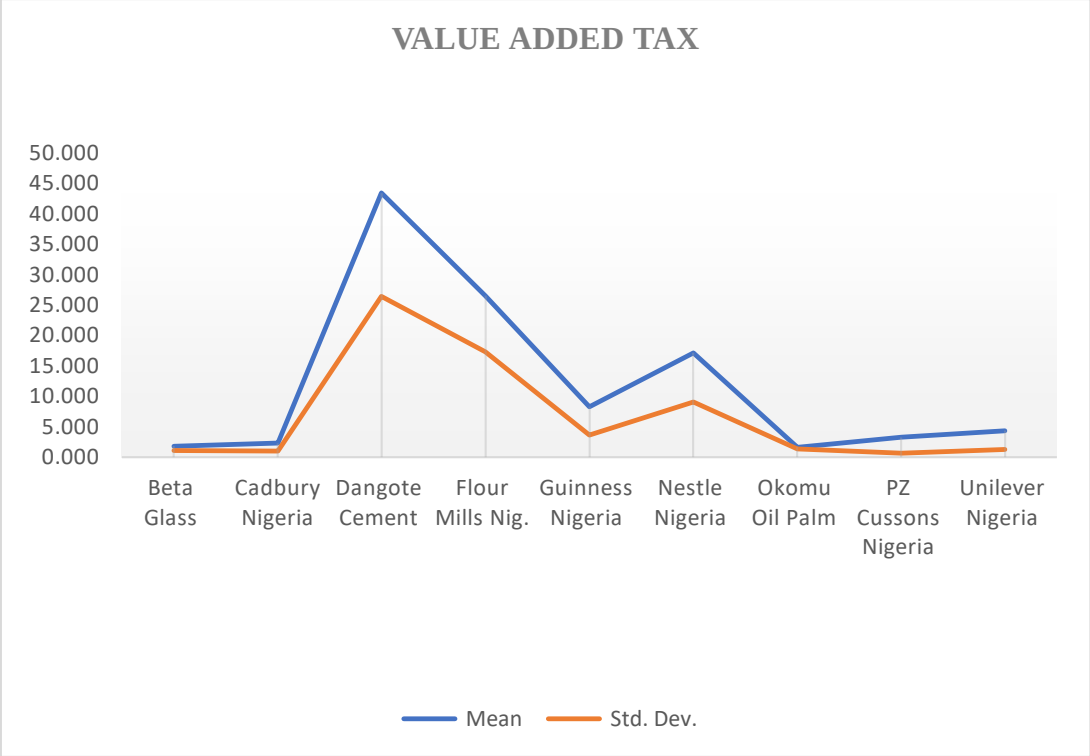

Figure 3: Mean and Standard Deviation for VAT

Model and Methods

The functional model for the relative impacts of the two dimensions of taxation on debt capital is specified as follows:

$$DTC = f(CIT, VAT) \quad (1)$$

Where:
DTC = Debt Capital
CIT = Company Income Tax
VAT = Value Added Tax

The econometric representation, in logarithmic form, of the above functional model, incorporating total assets (TA), profit after tax (PAT), and board size (BS) as control variables, is specified as follows:

$$\text{LDTC}_{it} = \phi_0 + \gamma_i + \phi_1 LDTC_{it-1} + \phi_2 LCIT_{it} + \phi_3 LVAT_{it} + \phi_4 LTA_{it} + \phi_5 LPAT_{it} + \phi_6 LBS_{it} + +e_{it} \quad (2)$$

Where e_{it} represents the error disturbances, ϕ_0 is the model intercept which can be interpreted as the average value of equity capital when all other right-hand side variables are zero; γ_i is the cross-sectional heterogeneity parameter capturing the unobserved company-specific effects such as organizational culture; ϕ_1 is the persistence parameter capturing the effect of lagged equity capital; while ϕ_2 and ϕ_3 are the main regression coefficients, respectively capturing the effects of company income tax and value added tax. Also, ϕ_4, ϕ_5 and ϕ_6 respectively capture the effects of the three control variables: namely, total assets profit after tax and board size. Besides, while other variables have both space and time indexes, γ_i has only space index since organizational culture varies cross-sectionally but remains constant at least over the sample period.

There are three competing methods of dealing with γ_i in the above specified model: namely. pooled regression, fixed effects regression, and random effects regression. While the pooled regression approach assumes that γ_i is not relevant in the debt capital model, both fixed effects and random effects methods recognize the relevance of γ_i but treat it differently in the model. The fixed effects method treats γ_i as an important explanatory factor that also correlates with both CIT and VAT, while the random effects method assumes that γ_i follows an error process, and hence has correlation with e_{it}.

To determine which of these approaches is consistent with our data generating process, we employ the two widely used specification tests: namely, Likelihood Ratio and Hausman tests. The likelihood ratio test compares the pooled regression results and fixed effects results and is implemented under the hypothesis that γ_i is significantly different from zero. Hence, the significance of this test would lead to the rejection of the pooled regression method. On the other hand, the Hausman specification test compares the fixed effects results and random effects results, and is implemented under the null hypothesis that γ_i is uncorrelated with CIT and VAT. Hence, the significance of this test would lead to the rejection of the random effects method in favour of the fixed effects method. In other words, if both tests are significant, then there is empirical evidence that γ_i affects debt capital both directly and through its interaction with tax variables.

EMPIRICAL ANALYSIS

Our empirical model specifies debt capital to depend on company income tax and value added tax, with lagged debt capital, total assets, profit after tax, and board size incorporated in the model as control variables. The objective is to determine the extent to which the observed variations in financial leverage of non-oil export companies is empirically linked to changes in corporate tax variables, after controlling for the effects of the control variables In this subsection, we estimate the specified debt capital model, and the results are shown in Table 1, with Columns 2, 3, and 4 containing the results for the pooled regression, fixed effects, and random

effects methods respectively. Further, Panel A contains the main regression results or the coefficient estimates, while Panel B contains the goodness of fit statistics. Finally, the estimated unobserved company-specific effects (cross-sectional heterogeneity) and model specification tests (Likelihood Ratio and Hausman tests) are presented in Table 2, while the residual diagnostic plots are shown in Figures 4 – 6.

Table 1: Panel Regression Model Result; p-values in parenthesis

1	2	3	4
Variables/Coefficients	**Pooled Regression**	**Fixed Effects**	**Random Effects**
Panel A: Main Regression results			
Constant (ϕ_0)	0.2144 (0.9270)	0.7563 (0.9040)	0.0705 (0.9738)
LDTC (-1) (ϕ_1)	0.6680*** (0.0000)	0.2856** (0.0443)	0.6273*** (0.0000)
LCIT (ϕ_2)	-0.1560 (0.5646)	-0.2760 (0.3005)	-0.1750 (0.4473)
LVAT (ϕ_3)	0.1832 (0.6792)	0.4769 (0.5479)	0.2113 (0.5982)
LTA (ϕ_4)	0.4639 (0.4180)	1.1257 (0.3885)	0.5302 (0.3113)
LPAT (ϕ_5)	-0.0222 (0.9394)	-0.5723 (0.1396)	-0.0305 (0.9039)
LBS (ϕ_6)	-0.6858 (0.5126)	-1.5223 (0.4354)	-0.7326 (0.4407)
Panel B: Goodness of Fit Statistics			
R^2	0.7337	0.8478	0.6960
$\bar{R}^2$	0.6974	0.7886	0.6545
F-ratio	20.210*** (0.0000)	14.325*** (0.0000)	16.789*** (0.0000)
DW-Statistic	2.1740	2.8680	2.2192

***indicates significance at 10% level**
*****indicates significance as 1% level**

Table 2: Unobserved (Latent) Company-Specific Effects

Company	Fixed Effects	Random Effects
Beta Glass (γ_1)	-0.3664	0.0354
Cadbury Nigeria (γ_2)	-1.2179	0.1058
Dangote Cement (γ_3)	1.6568	0.0572
Flour Mills Nig. (γ_4)	0.2735	0.0232
Guinness Nigeria (γ_5)	-0.1804	0.0231
Nestle Nigeria (γ_6)	0.5256	0.0377
Okomu Oil Palm (γ_7)	1.1526	0.1354
PZ Cussons Nigeria (γ_8)	-3.5250	-0.0582
Unilever Nigeria (γ_9)	-2.8506	-0.3600
LR Statistic	28.523*** (0.0000)	
Hausman Statistic	21.544*** (0.0015)	

*****indicates significance as 1% level**

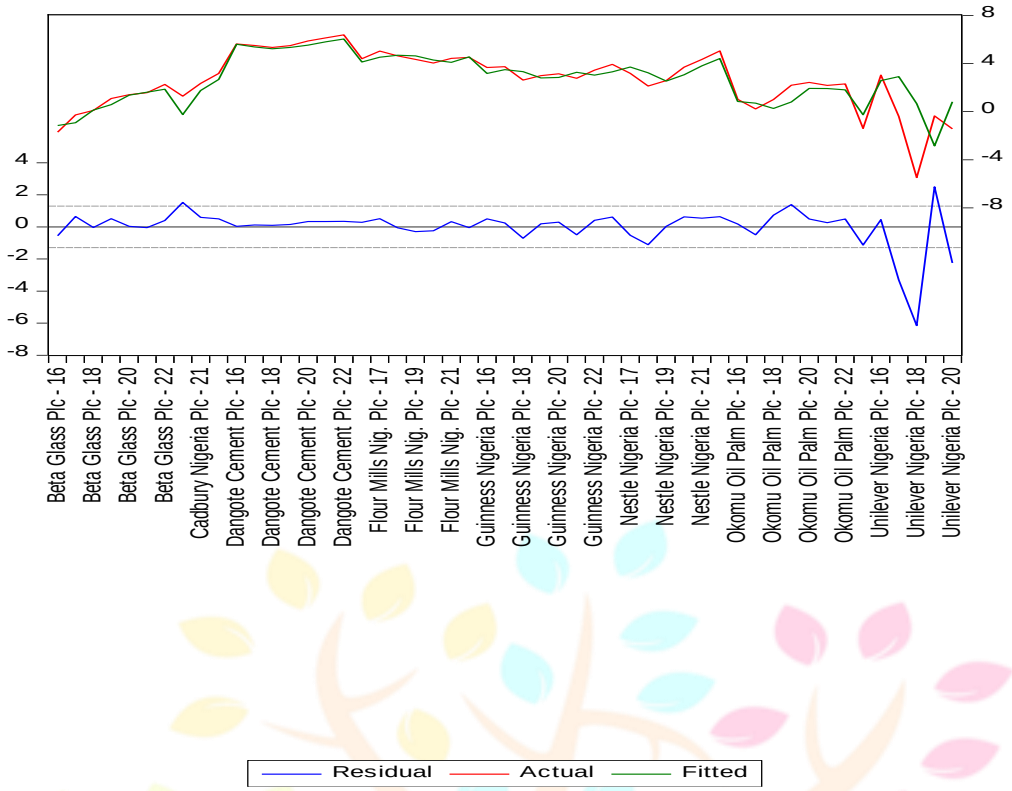

Figure 4: Pooled Regression Residual Diagnostic Plot

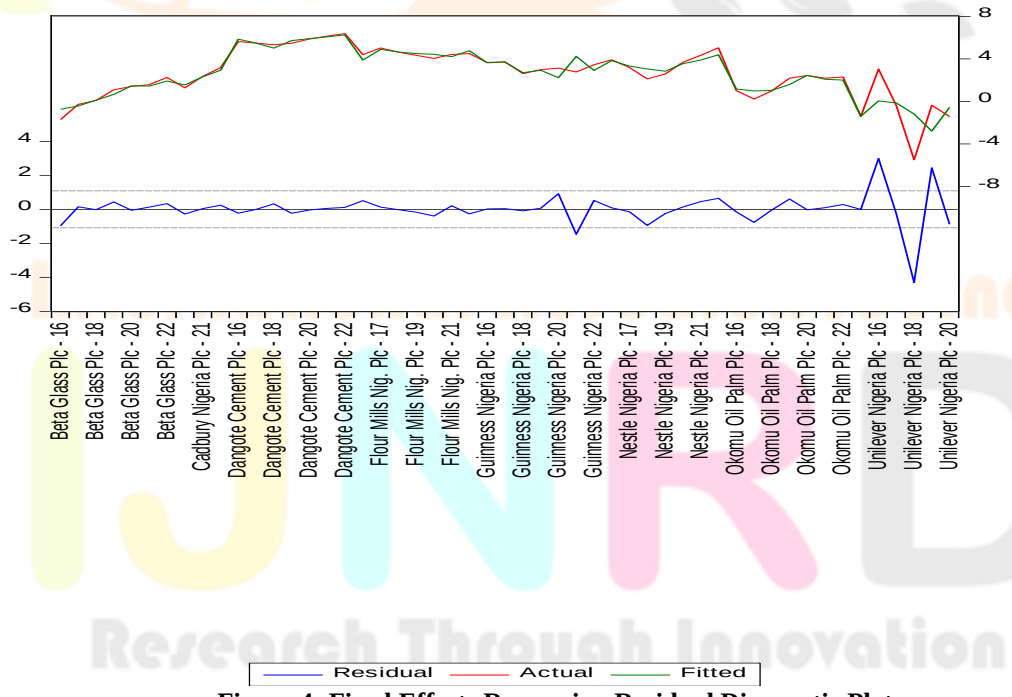

Figure 4: Fixed Effects Regression Residual Diagnostic Plot

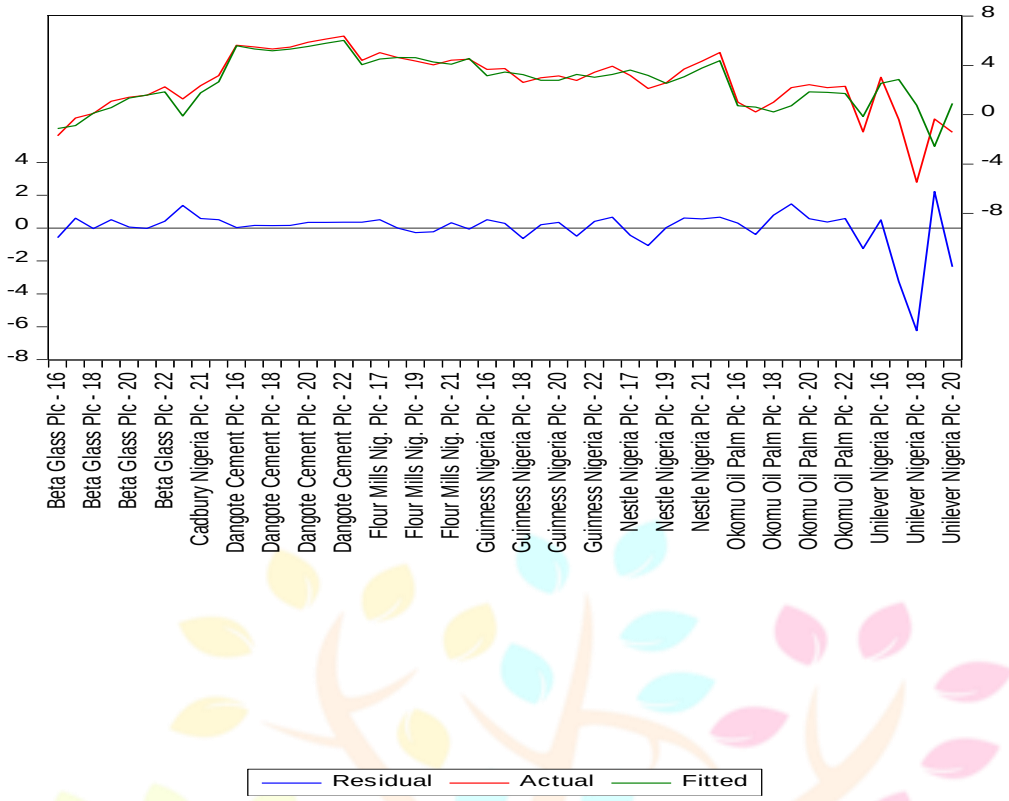

Figure 6: Random Effects Regression Residual Diagnostic Plot

From Panel A of Table 1, we can see that the intercept term ($\phi_0 < 0, p\text{-}value > 0.05, 0.1$) is positive but lacks statistical significance for all the three estimation methods, indicating that debt capital would, on average, not be significantly different from zero in the absence of all the explanatory variables. Also, the parameter estimate on the lagged dependent variable, ϕ_1, is consistently positive and has a p-value that is lower than 0.05, indicating that debt capital is a significant function of its immediate past value. An increase in debt capital in the current year would lead to an increase in debt capital one year after. Hence, like equity capital, debt capital of non-oil export companies is persistent and can be predicted based on its own immediate history or past performance.

Further, for the control variables, we can see that both the three different panel regression approaches produce similar results, especially in terms of the signs and significance of the parameter estimates. For all methods, none of the control variables is statistically significant, indicating that they are not important explaining factors for debt capital. However, the positive sign attached to LTA ($\phi_4 > 0$) indicates that total assets and debt capital move in oppositive directions. Hence, for non-oil export companies, there is tendency for larger companies to have higher financial leverage than smaller companies. On the other hand, the negative signs attached to LPAT ($\phi_5 < 0$) and LBS ($\phi_6 < 0$) show the tendency for both higher profitability and larger board to be associated with lower financial leverage.

Turning to the main relationships of interest, the signs and significance of the estimated coefficients are also similar for different panel regression methods. For all methods, the high p-values associated with both LCIT (ϕ_2) and LVAT (ϕ_3) is a clear indication that both company income tax and value added tax are not significant explanatory factors for changes in financial leverage of non-oil export companies. However, while the negative sign attached to LCIT (ϕ_2) suggests that higher company income tax tends to be followed by lower financial leverage, the positive sign attached to LVAT (ϕ_3) reveals the tendency for higher value added tax to be associated with higher financial leverage.

From Panel B, the F-statistic (p-value = 0.0000) has a zero p-value in all cases, and hence shows that the fitted debt capital model is highly statistically significant. However, it is not clear regarding which method produces the most plausible results for the relationships under investigation. The $\bar{R}^2$ of 0.6974, 0.7886, and 0.6545 shows that the proportion of the model variation explained by the joint influence of all included variables is almost 80% for the fixed effects method, while it is almost of 70% for the pooled regression method, and approximately 65% for the random effects method. This suggests that the fixed effects method outperforms its competitors. However, the Durbin-Watson statistic indicates that the pooled regression (DW = 2.1740) performs is the most preferred method, followed by the random effects method (DW = 2.2192), while the fixed effects method (DW = 2.8680) performs very poorly. Finally, the three estimation performs equally well in terms of the residual diagnostic plots shown in Figures 5 – 6, with the actual line being very close to the fitted line for all methods.in all cases. Hence, our conclusion on which method performs better would depend on the outcome of the model specification tests.

From Table 2, we can observe the differences in the latent variables which reflect the differences across firms in terms of organizational culture, leadership style and philosophy, and other unobserved firm-specific effects. In terms of the performance of the three estimation tests, we can see that the Likelihood Ratio statistic (p-value = 0.0000) is highly significant, and hence, rejects the pooled regression assumption that the unobserved variables are not significant explanatory factors for the observed cross-sectional variations in firm debt capital or financial leverage. Similarly, the Hausman test statistic (p-value = 0.0001) is highly significant, and thereby rejects the random effects assumption that there is a zero correlation between the unobservables and the observed explanatory variables. Therefore, there is sufficient empirical evidence that for non-oil export firms, the relationship between taxation and debt capital is

consistent with the fixed effects theory. Focusing on the fixed effects results, we can see that companies with negative effects are more than companies with positive unobserved effects. More specifically, PZ ($\gamma_8 = -3.5250$), Unilever ($\gamma_9 = -2.8506$), Cadbury ($\gamma_2 = -1.2179$), Beta Glass ($\gamma_1 = -0.3664$), and Guinness ($\gamma_5 = -0.1804$) have fixed effects that affect their debt capital negatively, while Dangote Cement ($\gamma_3 = 1.6568$), Okomu Oil Palm ($\gamma_7 = 1.1526$), Nestle ($\gamma_6 = 0.5256$), and Flour Mills ($\gamma_4 = 0.2735$) have fixed effects that affect their debt capital positively.

DISCUSSION AND CONCLUSIONS

This study investigates the extent to which both direct and indirect taxes affect corporate financial leverage for listed non-oil exporting companies in Nigeria using the panel data framework. The empirical analysis is based on a dynamic panel data model that incorporates firm size, profitability, and corporate governance as control variables. The findings summarized are as follows:

Consistent with the fixed effects theory, our empirical analysis shows strong evidence that cross-sectional heterogeneity is an important aspect of the dynamic relationship between corporate taxation and financial leverage. This result is expected since the companies in our sample compete in different industries, and hence a model that incorporates cross-sectional heterogeneity or company-specific effects as important explanatory factors is more appropriate to account for the observed variations in debt capital at the company level. The implication is that both observed (company income tax and value added tax) and unobserved company-specific (organizational culture, leadership, and management style) explanatory factors for corporate financial leverage.

There is no empirical evidence supporting the theoretical view that taxation plays a direct role in corporate financing decisions. In contrast with the trade-off theory, our results show that both company income tax and value added tax are not significantly related to debt capital. Our results also tend to disagree with several previous empirical studies including Pfaffermayr et al. (2013), Lin et al. (2014), Devereux et al. (2017), Zafar et al. (2019), Zou et al. (2019), and Fleckenstein et al. (2020). Hence, our conclusion is that for listed non-oil exporting companies in Nigeria, both direct and indirect taxes are not significant explanatory factors for financial leverage.

REFERENCES

[1] Devereux, M. P. Maffini, G. and Xing, J. 2018. Corporate tax incentives and capital structure: New evidence from UK firm-level tax returns. Journal of Banking & Finance, 88: 250-266.

[2] Dwenger, N. and Steiner, V. 2012. Profit taxation and the elasticity of the corporate income tax base: Evidence from German corporate tax return data. National Tax Journal, 65(1): 117-150.

[3] Egger, P. Eggert, W. Keuschnigg, C., and Winner, H. 2010. Corporate taxation, debt financing and foreign-plant ownership. European Economic Review, 54(1): 96–107.

[4] Fleckenstein, M. Longstaff, F. A. and Strebulaev, I. A. 2020. Corporate taxes and capital structure: A long-term historical perspective. Critical Finance Review, 9(1-2): 1-28.

[5] Graham, J. R. and Harvey, C. R. 2001. The theory and practice of corporate finance: Evidence from the field. Journal of Financial Economics, 60(2-3): 187-243.

[6] Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. The American Economic Review, 76(2): 323-329.

[7] Korteweg, A. 2010. The net benefits to leverage. The Journal of Finance, 65(6): 2137-2170.

[8] Kraus, A and Litzenberger, R. H. 1973. A state-preference model of optimal financial leverage. The Journal of Finance, 28(4): 911-922.

[9] Lin, S. Tong, N. and Tucker, A. L. 2014. Corporate tax aggression and debt. Journal of Banking & Finance, 40: 227–241.

[10] Modigliani, F. and Miller, M. H. 1958. The cost of capital, corporation finance and the theory of investment. The American Economic Review, 48(3): 261-297.

[11] Modigliani, F., & Miller, M. H. 1963. Corporate income taxes and the cost of capital: a correction. The American Economic Review, 53(3): 433-443.

[12] Pfaffermayr, M. Stöckl, M. and Winner, H. 2013. Capital structure, corporate taxation and firm age. Fiscal Studies, 34(1): 109–135. doi:10.1111/j.1475-5890.2013.00179.x

[13] Qiu, M. and La, B. 2010. Firm characteristics as determinants of capital structures in Australia. International Journal of the Economics of Business, 17(3): 277-287.

[14] Zafar, Q. Wongsurawat, W. and Camino, D. 2019. The determinants of leverage decisions: Evidence from Asian emerging markets. Cogent Economics & Finance, 7(1): 1 – 28.

[15] Zou, J., Shen, G., & Gong, Y. (2019). The effect of value-added tax on leverage: Evidence from China's value-added tax reform. China Economic Review, 54: 135-146.