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**IMPACT OF FIRM SPECIFIC ATTRIBUTES ON CORPORATE TAX
AGGRESSIVENESS OF LISTED MANUFACTURING FIRMS IN
NIGERIA**

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Abstract

This study investigates the impact of firm specific attributes on corporate tax aggressiveness by listed manufacturing companies in Nigeria. Firm attributes in this study were measured by firm profitability, firm leverage, capital intensity, firm growth and firm size. While corporate tax aggressiveness was proxy using effective tax rate (ETR). Hypothesis was tested using data obtained from annual report of 48 listed manufacturing companies on Nigeria Stock Exchange from 2015 to 2019. The study was anchored on agency theory and political cost theory. Diagnostic tests such as multicollinearity, heteroskedasticity, hausman test and woodbridge test for auto correlation were conducted. Applying robust fixed effect regression, the result shows that leverage and capital intensity has a significant positive influence on corporate tax aggressiveness while profitability has a significant negative influence on corporate tax aggressiveness. However, firm size and firm growth were found to have insignificant relationship with corporate tax aggressiveness.

Keywords: corporate tax aggressiveness, firm specific attributes, manufacturing companies, Nigeria

1. Introduction

Globally, there is an increasing interest in the issues related with tax aggressiveness, and the subject matter has emerge as even more prominent in

recent years in view of a mixture of political and monetary factors which have driven the focus of the general public attention towards corporate decisions associated with taxation (Wilde & Wilson, 2017). Taxes are essential revenue source for governments across the world. In Africa, avoiding taxes has been named as one of the factors holding the continent back by starving the government of the revenue it needs for development (Mayah, 2015).

Consequently, corporate tax aggressiveness is seen as one of the most challenging issue of our era as it represents a severe loss of revenue to the government of many advanced and growing economies (Hundai, 2011). Thus properly harnessing amounts collected thru taxes is a major concern for governments around the globe. There is evidence that tax aggressiveness behaviour is practiced and prevalent among manufacturing firms in Nigeria (Onyali & Okafor, 2018). This has undermined the ability of the Nigerian government to raise the targeted tax revenue. Subsequently, the Nigerian economic growth and development will be under threat.

Tax expense is one of the most critical business expenses acquired by an organization which has an effect on the investors' wealth. Shareholders prefer tax planning activities in order to maximize the value of the company, and therefore shareholders seek tax aggressiveness to achieve these goals (Tijjani, 2019). Given the key goal of maximizing shareholder value, firms have monetary motivators and thus firms tend to employ different tax aggressiveness techniques. As such, a variety of tax strategies may be used, including some that respect the spirit of the law and others that are considered aggressive. Tax aggressiveness therefore, refers to the aggressive side of tax avoidance practices.

Strategies employed to carry out tax aggressiveness by quoted firms are in form of allowable items which are deductible according to tax laws like capital allowances, donations, deduction of subsidiary tax in the case of a parent company, among others. They are deductions permitted in tax laws which managers can take advantage of to reduce tax cost. Others examples include sheltering activities, complex financial reporting, thin capitalization, transfer pricing, increasing the number of fixed assets and amount of debt, reporting losses to get fiscal loss compensation, conducting earnings reporting management, e.tc (Donohoe & Knechel, 2014; Rego & Wilson, 2012).

Chen, Chen, Cheng and Shevlin (2010) posit that the benefits of tax aggressiveness include greater tax savings, increase in net earnings and promoting the wealth maximization goal of the firm. However, tax aggressiveness also has its adverse implications. There are potential costs related to strategies to minimize taxes, such as implementation and transaction costs, possible penalties imposed by the tax authorities and reputational reputation risks, that must be pondered (Hanlon & Slemrod, 2009). Tax aggressiveness is often detected by the use of effective tax rate (ETR). Declining effective tax rates indicate that firms tend to be more aggressive in tax-aggressive behavior (Salman, Anshori and Tjaraka, 2018).

Previous research has shown that the level of tax aggressiveness varies across companies as some companies have a greater tendency to engage in tax aggressiveness than others (Pratama, 2017; Salman et al., 2018). Management may exploit tax reducing activities considering the influence of firm attributes such as on tax aggressiveness hence, firm attributes should be considered as a key factor in the success or termination of aggressive tax behavior (Richardson, Taylor, & Lanis, 2013). Researchers have used different proxies to represent firm attributes. Following previous literature (Minnick & Noga, 2010; Richardson et al., 2013) we are interested in the influence of profitability, leverage, capital intensity, firm growth, and firm size on effective tax rates.

Profitability is seen as a firms' intuitive indicator with capacity to influence effective tax rate. Firms with high profitability tend to be high in tax aggressiveness, because they can have more resources to invest in tax planning activities and take advantage of tax incentives and tax provisions to reduce income taxed and income taxes so that the effective tax rate becomes low (Pratama, 2017).

Leverage has been observed as a fundamental factor that can influence the level of tax aggressiveness (Ribeiro, Cerqueira, & Brandão, 2015). This is because firms with a high level of debt can use the deductibility of interest expenses to reduce tax burden. In addition, firms that are more capital intensive (high level of property, plant and equipment) benefit more from depreciations deductibility which causes a reduction in ETR. Due to the existence of different depreciation methods, more capital-intensive firms can easier manage taxes by accelerating or deferring depreciation expense and, consequently, they can take advantage from temporary book difference (Kraft, 2014).

Another factor that gives can influence on tax aggressiveness is firm growth. An increase in firm growth will result in an increase in sales, thereby increasing financial and taxable income unless expenses also raise excessively, this result in additional tax cost burden for the company. This condition will entice the firm to select an aggressive tax strategy (Goh, Lee, Lim, & Shevlin, 2016). In contrast, Dyreng, Hanlon and Maydew (2008) shows that the company's size plays a role in tax management as larger firms are more visible and receive higher levels of scrutiny. This will increase the likelihood that any tax manipulations would be detected and thus give incentive to be less tax aggressive in consideration of the firm's reputation and its growth.

Since the proliferation of corporate scandals in the last decade, the study of tax aggressiveness has been subject of many intense reflections of researchers around the globe. Localizing the focus to Nigeria, the researcher observes that the study of corporate tax aggressiveness is yet to gather full momentum. Particularly the nexus between firm characteristics and tax aggressiveness of listed companies is yet to gain ascendancy in developing countries like Nigeria. Most existing studies such as (for example, Abdulraheem, 2018; Ogbeide & Obaretin, 2018; Uniamikogbo, Bennee, & Adeusi, 2019) focused on examining corporate governance variable as determinant. Only few studies has concentrated on the nexus between firm characteristics and tax aggressiveness in Nigeria (e.g. Ogbeide, 2017). Consequently, the study sought to fill the gap by examining the impact of firm specific attributes on corporate tax aggressiveness of listed manufacturing firms in Nigeria. In line with the above discussion we hypothesises in null form that firm profitability, firm leverage, capital Intensity, firm Growth and firm size has no significant influence on tax aggressiveness by listed manufacturing company in Nigeria.

2. Literature Review

Tax aggressiveness is generally seen as an action aimed at minimizing taxable income through tax planning practices. Braithwaite describes corporate tax aggressiveness as a scheme or plan set in place by a company with the primary or dominant intention of avoiding tax. Hen describe the tax aggressiveness as the use of tax planning strategies for the downward management of taxable income. Tax aggressiveness is measured by the firm's propensity to manage its taxable income downwards by more or less active tax planning practices. In the context of this study, we describe tax aggressiveness as tax planning techniques at the more

extreme end of the tax avoidance spectrum, which are more likely to push the envelope of tax law and include more aggressive tax-related practices.

Jong, Sung, Park and Ah (2017) examined the effect of firm age and growth on tax aggressiveness of Small and Medium Enterprise (SMEs) in Korea. Data used were collected from financial statement of Korean Securities Dealers Automated Quotations (KOSDAQ) listed companies from 1999 to 2011. The final samples for the study include 4,076 firm-year observations. Their findings revealed a significant negative relationship between firm age and tax aggressiveness. This indicates that managers of older firms consider maintaining a positive image or reputation more important than saving on tax cost. Therefore, old firms may not pursue aggressive tax strategies. Their findings also show that firm growth has a significant positive effect on tax aggressiveness of SMEs implying that tax aggressiveness increases with increase in firm growth.

Rani, Susetyo and Fuadah (2018) examined the effect of corporates characteristic on tax avoidance from agency theory perspective. Data used were collected from annual report of 49 listed manufacturing firms on Indonesia Stock Exchange from 2012 to 2016. Panel regression result revealed that, firm size and profitability has a significant negative effect on tax avoidance while leverage has a significant positive effect on tax avoidance. However, the study was conducted in a developed country with a jurisdiction distinctively different from Nigeria.

In another study from Indonesia, Ryandono, Ernayani, Atmojo, Susilowati and Indriastuty (2020) conducted a study on the factors influencing tax avoidance using tax avoidance and agency theory as the theoretical basis of the study. Data used were collected from annual report of 19 listed food and beverage firms on Indonesia Stock Exchange from 2014 to 2016. Regression result revealed that firm size has a significant influence on tax avoidance while profitability, leverage and capital intensity has no significant influence on tax avoidance. The study however considered a three-year period which can also be improved upon.

Devi, Salim and Pheng (2018) examined the impact of firm characteristic on corporate tax aggressiveness in Malaysia and found that among firm characteristics, firm size, profitability, debt intensity, capital intensity and firm growth have significant impact on the level of tax aggressiveness. Salman et al. (2018) investigated the determinant of tax aggressiveness using data obtained from

sharia listed entity in the Indonesia Sharia Share Index from 2011 to 2014. Regression result revealed that firm size and profitability has a significant effect on the level of tax aggressiveness while leverage and capital intensity do not affect the level of tax aggressiveness.

Yuniarwati, Ardana, Dewi and Lin (2017) empirically found that profitability has a significant influence on tax avoidance while firm size has no significant influence on tax avoidance. Data used were collected from annual report of all listed manufacturing firms on Indonesia Stock Exchange from 2013 to 2015. In a related development, Putra, Syah and Sriwedari (2018) conducted a study on the factors influencing tax avoidance in Indonesia using agency theory as the theoretical basis of the study. Data used were collected from annual report of 100 listed firms on Indonesia Stock Exchange. Regression result revealed that profitability, leverage and capital intensity has a significant influence on tax avoidance. However, the study was conducted in a developed country with a jurisdiction distinctively different from Nigeria.

Ogbeide (2017) examined the effect of firm characteristic on tax aggressiveness using data from annual report of 85 listed non-financial firms in Nigeria from 2012 to 2016. Panel regression result revealed that firm size has a significant positive effect on tax aggressiveness while leverage has a significant negative effect on tax aggressiveness. Similarly, Mgbame, Chijoke-Mgbame, Yekini and Kemi (2017) examined the effect of firm size and performance on tax aggressiveness. Data used were collected from annual report of 50 sampled companies listed on Nigeria Stock Exchange from 2007 to 2012. Panel regression result revealed that both firm size and firm performance has a significant effect on tax aggressiveness. However, the period covered have being overshadowed with series of economic, political and regulatory events.

Pratama and Padjadjaran (2017) examined the effect of company characteristic on aggressive tax avoidance using data from annual report of 27 firms listed on Indonesia Stock Exchange from 2011 to 2015. The study was grounded on Political cost theory. Regression analysis result revealed that firm size and firm age has a significant negative effect on aggressive tax avoidance while profitability has a significant positive influence on aggressive tax avoidance. However, leverage was found to have an insignificant influence on aggressive tax avoidance in Indonesia.

Ribeiro, Cerqueira and Brandão (2015) investigated the determinant of effective tax rate from Political cost theory perspective. Data used were obtained from a sample of 704 non-financial firms listed on London Stock Exchange from 2010 to 2013. GLS Regression result revealed that firm size and profitability has a significant positive effect on effective tax rate while leverage and capital intensity has a significant negative effect on effective tax rate. The study was however conducted in a developed country having different regulatory regime different from what is obtainable in Nigeria.

Jensen and Meckling (1976) posit that managers, who are agents of the principals (shareholders), are employed to work for maximizing the returns to the shareholders. Therefore, in order to maximize shareholders' wealth, they would need to reduce their operating costs. One of such ways to reduce operating costs is to engage in tax aggressiveness to reduce their tax liability.

However, in order to reduce the tax burden of firms, tax aggressiveness must be done within the legal framework. The primary reason managers of organizations involve in tax aggressiveness is because of the benefits they derived from an increase in after-tax returns. Thus, Agency conflicts relate to aggressiveness activities (Crocker & Slemrod, 2005).

Crocker and Slemrod (2005) consider company tax aggressiveness within the context of agency theory. From the perspective of agency theory, the marginal benefits of tax aggressiveness to shareholders include greater tax savings for the firm, while the marginal cost consist of the potential for tax fines and penalties to be imposed via the tax administration, implementation expenses, political and reputational cost (Slemrod, 2004). Seidman and Stomberg (2011) also posit that tax aggressiveness is a framework of assessment of company conflicts. Lee, Dobiyski and Minton (2015) concluded that the agency theory is the ideal theoretical basis to provide an explanation for how company generally tends to lessen tax liabilities.

Political cost theory considers that effective tax rates are a metric for political costs because taxes paid are a means of transferring wealth from companies to other social groups. Effective tax rates are a metric for the success of companies, thus, if larger firms are more successful than smaller firms, they will be subject to more political scrutiny by tax authorities, therefore more hesitant to lower effective tax rates using aggressive tax planning. In accordance with the political

cost theory, we suggest a positive relation between company size and ETR measures, which suggests that large companies are more visible and thus subject to greater regulatory action (Watts & Zimmerman, 1986). Similarly, looking at the political cost theory, profitable firms would aim to preserve their reputation to enhance investor confidence and minimize the use of aggressive earnings management techniques (Scott, 2006). In addition, the management of the company would tend to use the debt at an optimum level to reduce the tax liability that must be paid.

3. Methodology and Model Specification

The purpose of this study is to examine the impact of firm specific attributes on corporate tax aggressiveness. As a result, correlational research design was adopted. The study population consisted of all the listed manufacturing firms on Nigeria Stock Exchange (NSE) as at 31 December 2019. The adjusted population is forty-six (46) firms based on data availability from their annual report from 2015 to 2019. The dependent variable in this study is corporate tax aggressiveness, measured as the firm 's current effective tax rate (ETR). The effective tax rate is measured as the current income tax expense divided by the pre-tax income (Lanis and Richardson, 2012).

ETR measures the ability of a firm to lessen its tax liability as compared with its pre-tax accounting profits and shows the relative tax burden across firms (Rego, 2003). As a consequence, a low ETR rate indicates that a firm conducts tax planning more aggressively than firms with higher ETR rate. The basis of accepting that a firm is tax aggressive is that the ETR computed should be less than the firm income tax rate. In the context of this study, if $ETR < 30\%$ company tax rate, then listed firms are said to be tax aggressive, and vice – versa.

The explanatory variables for this study comprise five firm specific attributes (firm size, firm leverage, capital intensity, firm growth and firm profitability). Profitability is proxy by return on assets (ROA) where ROA is calculated as profit after tax divided by total assets (Rani et al., 2018). The size of the firm is measured by the natural logarithm of total asset (Salman et al., 2018). Firm growth is measure as the changes in total asset in the year (Devi et al., 2018). Leverage in this study is measured by total debt divided by total equity (Rani et al., 2018). The intensity of capital in this study is measured by fixed assets divided by total assets (Salman et al., 2018).

Table 1 displays the result of the descriptive statistics for the independent and dependent variable. From the Table, we can see that the mean level of corporate tax aggressiveness measured by ETR is 25.6% which is comparatively lower than Nigeria's income tax rate (30%). The outcome is an indicator that the sampled companies were very tax-aggressive during the reporting period.

The maximum and minimum value of ETR is 2.39 and -1.548 respectively. The standard deviation of 0.372 shows moderate variation in the level of tax aggressiveness across the sampled manufacturing firms. The standard deviation of 0.372 implies that there is moderate variability in the corporate tax aggressiveness of listed manufacturing companies in Nigeria.

Profitability measured by return on asset (ROA) reveals an average of 0.28% with standard deviation of 0.206 which shows low variability across the sampled manufacturing firms. The most profitable manufacturing firms earned N1.763 of net income from a single N1 of asset investment and the maximum losses incurred by the insurance firms is -N1.548 on each N1 of asset investment. It is also observed that leverage measured by percent of debt to equity ratio of listed manufacturing companies has an average of 0.421 of equity, with minimum and maximum -2.428 and 6.391 respectively with standard deviation of 1.021 which indicate moderate variation among the sampled companies.

Capital intensity has a minimum and maximum fixed asset investment of 0.1% and of 96.7% respectively, average of 44.9% and standard deviation of 0.24. It is also observed that Growth of listed manufacturing firms in Nigeria has the minimum 0.919% and maximum of 1.473%, with mean of 0.57% and standard deviation of 0.221. Finally, with respect to firm size, the size of the firm has minimum and maximum asset value of N131 millions and N1.74 trillions respectively, with standard deviation of N263.1 billion. From the mean of the size of the firm as presented in Table 1 indicates that on average a listed company in Nigeria have assets with worth 131.8 (billions) Naira value.

Table 2: Correlation matrix

Variables	etr	fprof	flev	capint	Fgwt	Lfsize
Etr	1.000					
Prof	0.613	1.000				
Flev	0.213	0.147	1.000			
Capint	-0.132	0.025	-0.101	1.000		
Fgwt	0.187	0.141	0.032	-0.006	1.000	
Lfsize	0.094	0.114	0.115	0.188	0.116	1.000

Source: Stata Output (2020)

Furthermore, Table 2 summarizes the result of the correlation between the variables. It is observed in Table 2 that Effective Tax Rate has a positive relationship with growth, firm size and profitability while it has a negative relationship with capital intensity and leverage. On the other hand, the relationship among the independent variables is not too strong to warrant problem of multicollinearity as the coefficient are less than 0.80(Gujarati, 2004).

To further consider the collinearity issues, this study employed Variance Inflation Factor (VIF) test to measure its magnitude in our model, where the variance factors for each variable are estimated. The results of the VIF test ranges from a minimum of 1.049 to a maximum of 1.077 which are all less than 10. To further substantiate this claim, the mean VIF is 1.053, also confirming the absence of multicollinearity among all the independent variables of the study(Hair, Black, Babin, & Anderson, 2014).

Diagnostic Test

Before the conduct of the final regression, this study conducted diagnostic analysis to maintain the un-biasness of the parameters as argued by wooldridge (2011). Among the test conducted in addition to the multi-collinearity test is Hausman test to make a choice between random and fixed effect models. With the P-value of 0.0001 which is statistically significant fixed effect model is therefore considered appropriate for this study. This study also conducted a normility test on the residuals of the model using shapiro-wilk and the study found that, the residual was normally distributed as the p-value is statistically insignificant. While the Wooldridge test for autocorrelation in panel data was also significant indicating presence of auto correlation. Also the heteroskedasticity test conducted

using Modified Group Wise proved significant with the p-value of 0.000, which indicates absence of homoscedacity. The presence of heteroscedasticity violates the homoscedasticity assumption and may lead to a wrong inference. This study therefore conducted robust fixed effect regression model which overcome the both heteroskedasticity and auto correlation issues. The study presents the robust fixed effect regression result in Table 3.

Table 3: Robust Fixed Effect Regression Result

Etr	Coef.	St.Err.	t-value	p-value	VIF
fprof	84.996	9.665	8.79	0.000	1.05
Flev	-19.282	6.358	3.03	0.004	1.049
capint	-48.121	23.671	-2.03	0.048	1.055
fgwt	9.094	6.782	1.34	0.187	1.032
lfsiz	-14.037	10.203	-1.38	0.176	1.077
Constant	152.279	108.486	1.40	0.167	
Number of obs		230.000			
R-squared		0.623			
F-test		100.507			
Prob> F		0.000			
Mean vif		1.053			

Source: Stata Output (2020)

From the robust fixed effect regression result, the model of the study is:

$$ETR_{it} = 152.279 + 84.996 FPROF_{it} - 19.282 FLEV_{it} - 48.121 CAPINT_{it} + 9.094 FGWT_{it} + -14.037 FSIZE_{it}$$

The result in Table 3 shows that the result obtained from the Robust Fixed Effect Regression which was interpreted after conducting all relevant tests. It is observed that the R-Square was 0.623, which means that 62.3% variations in tax aggressiveness as proxied by ETR is caused by variations in the explanatory variables. this means that firm profitability, leverage, capital intensity, firm growth and firm size jointly explains 62.3% of tax aggressiveness of listed manufacturing companies in Nigeria and its significant at 1% which is evidenced by the p-values of 0.000. And the remaining 37.7% were due to other factors not included in the equation but measured by the error term.

The result in Table 3 shows that the profitability (ROA) has a positive and statistically significant influence on Effective tax rate, evidenced by coefficient of 84.996 and p-value of 0.000 which is significant at 1%. It signifies that high profitability will result to paying higher tax and lower profitability will result to paying lower tax. This result is in line with the political cost theory and the study of (Mgbame et al., 2017; Rani et al., 2018; Ribeiro et al., 2015). Hence we reject the null hypothesis that states that profitability has no significant influence on tax aggressiveness by listed manufacturing companies in Nigeria.

The result further revealed that the relationship between leverage and ETR which is an inverse measure of Tax aggressiveness is negative and statistically significant, this is evidenced by the coefficient of -19.27 and p-value of 0.004. It signifies that more leverage will significantly influence effective tax rate adversely which indicate high level of tax aggressiveness. This is because interest on debt instruments are tax deductible, thus leading to the payment of a lesser tax. This means leverage can be used as a means reducing tax aggressively. This findings is in line with the study of (Putra et al., 2018; Rani et al., 2018; Ribeiro et al., 2015) but does not support the study from (Ryandono et al., 2020; Salman et al., 2018). Hence we reject the null hypothesis that states that leverage has no significant influence on tax aggressiveness by listed manufacturing company in Nigeria.

The result obtained also shows that the relationship between capital intensity and effective tax rate used is negative and statistically significant. This is evidenced by the coefficient -48.122 and p-value of 0.048 which is significant at 5%. It signifies that capital intensity i.e investment in fixed asset will significantly influence effective tax rate. It means that increase in fixed asset investment will lead to a significant reduction in the effective tax paid. This is because capital allowances resulting from investment in fixed asset are tax deductibles, thereby leading to reduction in tax payable i.e effective tax rate. Thus it means capital intensity may result reducing tax aggressively. This result is in line with the study of (Devi et al., 2018; Putra et al., 2018; Ribeiro et al., 2015). Hence we reject the null hypothesis that states that Capital intensity has no significant influence on Tax aggressiveness by listed manufacturing companies in Nigeria.

Firm growth variable has a t-value of 1.34, a coefficient value of 9.094 and probability value of 0.187 which is insignificant. This shows that firm growth has no significant effect on tax aggressiveness measured by ETR by listed

manufacturing companies in Nigeria. This finding of the study is in contrast to the findings of (Devi et al., 2018; Jong et al., 2017) On this basis, we therefore fail to reject the null hypothesis, which states that firm growth has no significant influence on tax aggressiveness by listed manufacturing companies in Nigeria.

Similarly, firm size variable has a t-value of -1.38, a coefficient value of -14.037 and probability value of 0.176 which is insignificant. This implies that firm size has no significant effect on tax aggressiveness measured by ETR by listed manufacturing companies in Nigeria. This finding of the study is in line with the studies of (Yuniarwati et al., 2017). However, the result do not support the political cost theory and it is in contrast to the findings of (Pratama, 2017; Rani et al., 2018; Salman et al., 2018) On this basis, we therefore fail to reject the null hypothesis, which states that firm size has no significant influence on tax aggressiveness by listed manufacturing companies in Nigeria.

5. Conclusions

Company tax decision is ever more on the main agenda of managers when making their strategic selections. The tax aggressiveness is implemented by using the firms so as to reduce or lessen the amount of taxes they're supposed to pay. This study investigated how tax aggressiveness is affected by firms' specific attributes in a developing country context. In order to examine this, we use a sample of forty-six (46) firms listed on Nigeria Stock Exchange using data extracted from their annual report from 2015 to 2019. To measure corporate tax aggressiveness, we used effective tax rate.

Overall, it is shown from the study that firm specific attributes significantly influence the level of tax aggressiveness. Findings from the study showed that both firm leverage and capital intensity significantly affect the level of tax aggressiveness. Increase in both leverage and capital intensity leads to reduction in effective tax rate due to the high tax deductibility of interest and depreciations respectively which implies the higher level of tax aggressiveness undertaken by the company. More so, the findings show that firm profitability significantly and negatively influence the level of corporate tax aggressiveness. Explanatory variables such as firm size and firm growth have no significant influence the level of corporate tax aggressiveness. Our paper adds some insights to the growing literature on corporate tax aggressiveness and gives more understanding on its

determinants. Our findings will be useful to regulators, policy makers and tax researchers, in studying level of tax aggressiveness and analysis of which factors may influence the taxes paid by firms.

In spite of the importance of our finding, our research has some limitation. Firstly, we used a short period of 5 years; further research may extend the period of years of research beyond five years. Secondly, due to the sample duration we use, we cognize our research on current effective tax rate. It would be interesting if future studies examine factors that influence long-run ETRs. Future studies can also have a look at other corporate's traits, which includes liquidity, age and inventory intensity to further enhance the discussion of tax aggressiveness.

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