Corporate Tax Aggressiveness and Firm-Specific Influences in the Industrial Sector in Malaysia

Noor Emilina Mohd Nasir[1], Norfadzilah Rashid[2]*, Siti Nasuha Muhmad[1], Najihah Marha Yaacob[1] and Siti Nurhazwani Kamarudin[1]

[1]Faculty of Accountancy, Universiti Teknologi MARA, Cawangan Terengganu, Kampus Dungun, Terengganu, Malaysia.

[2]Faculty of Business and Management, Universiti Sultan Zainal Abidin, Terengganu, Malaysia.

ABSTRACT

Tax aggressiveness, an important issue in corporate business, reflects a company's strategies to minimize tax liabilities, which often border on legal and ethical boundaries. This behavior has significant implications for tax authorities and financial regulators. The prevalence of creative accounting in global financial markets is especially pronounced in the Asia-Pacific region, with financial reports reflecting the firm's management to optimize resources. This study investigated the impact of firm specific characteristics and audit quality on corporate tax aggressiveness among Malaysian industrial firms between 2016 and 2021. To measure tax aggressiveness, this study relied on effective tax rates. Using panel data methodology, this study analyzed 522 firm-year to achieve the research objectives. Consequently, our findings revealed that audit quality, firm performance and firm size demonstrated a high propensity for tax aggressiveness. However, firm leverage did not have any significant influence on tax aggressiveness. The insights from this study offer valuable guidance for financial regulators and tax authorities seeking to comprehend the interplay between financial and tax reporting decisions. Additionally, the study provides theoretical support for the agency theory by showing that external monitoring, represented by audit quality, is required to reduce corporate tax aggressiveness.

Keywords: Corporate Tax, Tax Aggressiveness, Audit Quality, Effective Tax Rate

* Corresponding Author: Norfadzilah Rashid; Faculty of Business and Management, Universiti Sultan Zainal Abidin, Terengganu, Malaysia; Email: nikmfadzilah@unisza.edu.my

INTRODUCTION

Corporate tax aggressiveness activities have remained as unresolved issues faced by various tax authorities (Kasim & Saad, 2019). This is because companies see corporate tax aggressiveness as an important strategy to maximize their revenue by reducing income tax liability. In Malaysia, there is an increased awareness in relation to aggressive tax avoidance activities among companies after the Self-Assessment System (SAS) regime (Muhmad et al., 2020; Rashid et al., 2015, Noor et al., 2010; Zainazor et.al, 2023). Companies incur a cost when they pay income tax to the government, since this represents a net transfer of wealth from the company (and its shareholders) to the government. It is therefore considered a burden on the company, as it increases the outflow of funds.

This study adopted the definition of tax aggressiveness as posited by Frank et al., (2009) which states that it is a deliberate course of action aimed at minimising taxable income through tax planning strategies and the use of techniques that may or may not be classified as tax evasion. As stated by Hanlon and Heizman, (2010), tax aggressiveness can affect the amount of actual tax burden which is effective tax rate (ETR) by reducing the taxable income, thereby decreasing the overall tax burden of the companies. To minimise their tax liability, companies use numerous tax planning strategies (Nasir et al., 2023). Since financial statements present the company's financial performance, shareholders face difficulty in gauging the company's true financial position because the information disclosed has been manipulated. As a result, potential and existing shareholders lack confidence to invest in the company. Governments also will lose optimal revenue they can get from corporate income tax expenditures when companies adopt aggressive corporate tax planning (Salaudeen & Ejeh, 2018).

Therefore, as stated by Ribeiro et al., (2015), one of the techniques to identify tax aggressiveness is to examine the firm's specific characteristics in the company's financial statements. The annual financial statements are an important legal instrument of a company that presents its financial performance and economic situation. In this study, firm-specific characteristics were refined to those that possibly influence the level of corporate tax aggressiveness in companies. Hence, the objective of this study was to examine the relationship between firm-specific characteristics and corporate tax aggressiveness among Malaysian listed industrial product companies.

The following sections of this document are organised as follows: Section 2 reviews the relevant literature on the relationship between firm-specific characteristics and corporate tax aggressiveness. This is followed by the development of hypotheses. Section 3 describes the research methodology, which includes data collection procedures and variable measurement. The fourth section of the study presents the research findings, while the sixth section provides the conclusions.

LITERATURE REVIEW

The Underpinning Theory in Corporate Tax Aggressiveness

The Agency Theory, introduced by Jensen and Meckling (1976), is a cornerstone of corporate governance and financial analysis. It examines the relationship between principals (shareholders) and the agents (managers) and emphasises the potential conflicts that arise due to different interests. This framework is particularly important for understanding tax aggressiveness, where managers may engage in behaviours that optimise their personal or corporate objectives, sometimes at the expense of shareholder value or regulatory compliance.

The theory suggests that managers motivated by performance-related incentives engage in aggressive tax planning to improve reported financial performance (Salah, 2019). High-performing and larger companies often have greater resources and sophisticated tax planning capabilities that allow managers to exploit tax loopholes and reduce tax liabilities. Leverage also influences tax aggressiveness in the sense of the Theory. Managers of highly leveraged companies can engage in aggressive tax planning to improve cash flow and reduce debt, thereby aligning themselves with the interests of

creditors. However, excessive tax aggressiveness can increase a company's risk profile and potentially jeopardise its financial stability. The agency conflict therefore consists of balancing the immediate benefits of tax savings against the long-term risks of aggressive tax practises.

High-quality audits, on the other hand, serve as a control mechanism and mitigate agency problems by ensuring the accuracy and reliability of financial reporting. The Agency Theory suggests that stronger external audits can curb opportunistic behaviour by managers, including aggressive tax planning (Soltani, 2022). The application of the Agency Theory to the study of Malaysian industrial firms' tax aggressiveness therefore provides a comprehensive understanding of how management behaviour, driven by various incentives and constraints, influences firms' tax strategies. By examining the interplay of firm performance, audit quality, firm size and leverage, this theoretical framework sheds light on the underlying motivations and implications of tax aggressiveness and provides valuable insights for policy makers and stakeholders seeking to improve corporate governance and tax compliance.

Tax Aggressiveness

The concept of tax aggressiveness has been a focal point of several academic studies, including those by Thanos et al. (2020), Muhmad et al. (2020), Kasim and Saad (2019), and Irianto et al. (2017). These studies generally concur on the use of firm-specific characteristics as influential factors determining a corporation's level of tax aggressiveness. These characteristics typically encompass capital intensity, leverage, profitability, firm size, and labor intensity.

Interestingly, while these variables are broadly recognized as relevant, their specific impact and the nature of their relationship with tax aggressiveness remains contested. This discrepancy in findings has attracted substantial academic attention. Studies by Dyreng et al. (2017) and Mgammal (2015) highlight this lack of consensus about the determinants' signs - in other words, whether these firm-specific characteristics positively or negatively influence tax aggressiveness. This is a crucial aspect for corporations, as understanding these relationships is key to formulating effective tax planning strategies, (Mustapha et al., 2020).

Against this backdrop, the present study aimed to delve deeper into the association between firm-specific characteristics and corporate tax aggressiveness. The goal was to gain a nuanced understanding of the main factors that influence the level of corporate tax aggressiveness, (Ado et al., 2020). Unveiling these relationships could provide valuable insights for companies seeking to optimize their tax planning strategies and contribute to the existing body of academic literature on the subject.

In operationalizing tax aggressiveness for this study, the Effective Tax Rate (ETR) was chosen as a proxy. The ETR, as used in the tax literature, is an effective tool to quantify a firm's level of tax aggressiveness. It calculates the proportion of profits a company pays in taxes, providing a comprehensive measure of its tax liability. As suggested by Frank et al. (2009) and Zainazor et al. (2023), lower ETR values indicate higher tax aggressiveness, implying that firms are deploying strategies to minimize their tax obligations. Therefore, by examining ETR in relation to firm-specific characteristics, this study hoped to shed light on the dynamics of corporate tax planning and the levers that companies use to manage their tax obligations.

Development of Hypotheses

Firm performance and tax aggressiveness

The first factor that increases the motivation of the companies to conduct tax aggressiveness is firm performance (Muhmad et al., 2020). It is a widely held view that firm performance can describe the ability of a business to generate profit over a certain period as measured by its return on asset (ROA). A higher profitability ratio contributes to higher tax paid because the amount of profit is closely related to the amount of tax paid. Studies by Jaffar et al. (2021) and Ann and Manurung (2019) reported that

higher profitability business have a positive and significant relationship with the level of tax aggressiveness. Companies tend to be more aggressive in their corporate tax planning activities by utilising the tax incentives available and other tax allowances to minimize their taxable income and, thus, pay a smaller tax. However, Ribeiro et al., (2015) found contradicting results. Ribeiro et al., claimed that because large companies have visibility and they are exposed to greater political pressure, highly profitable businesses in London are subject to a high corporate tax burden. Therefore, based on the above arguments, the first hypothesis of this research was;

H1: There is a positive relationship between profitability and tax aggressiveness.

Audit quality and tax aggressiveness

Besides, previous studies also suggest that audit quality can influence tax aggressiveness (Lestari & Nedya, 2019). As defined by DeAngelo (1981), audit quality is the assessment by auditors in discovering the breach in the client's accounting system and reporting the breach. High audit quality implies that the audit process has been conducted effectively and in accordance with professional standards, leading to greater confidence in the financial information provided by the company. A study by Rizqia and Lastiati (2021) suggested that higher audit quality can help mitigate tax aggressiveness. This is because, when auditors identify that there is an aggressive tax planning strategy carried out by the company, they may challenge the company's approach, leading to the possibility of lower tax aggressiveness. Furthermore, as stated by Suprimarini and Suprasto (2017), high audit quality protects companies against misstatement in the financial transactions further lowering corporate tax obligation of the companies. Therefore, based on the above argument, the second research hypothesis was formulated as follows:

H2: There is a negative relationship between audit quality and tax aggressiveness.

Firm size and tax aggressiveness

Ogbeide (2017) emphasized that firm size is one of the factors that can influence the level of tax aggressiveness of the company. Studies by Belz et al., (2019) and Ann and Manurung (2019) found a significant relationship between firm size and tax aggressiveness. They claim large firms have access to specialized tax departments or external tax advisors who can guide companies on tax planning strategies and identify loopholes in tax laws to reduce their corporate tax payments. Therefore, as stated by Kimsen et al., (2018) by implementing efficient tax structures and utilizing legitimate tax planning techniques, larger firms can optimize their tax. However, according to research by Susanto et al., (2019), firm size had a negative effect on tax aggressiveness. This is due to larger firms often subject to more stringent corporate governance requirements making it impossible for companies to practice tax aggressiveness. Therefore, based on the description, the hypothesis proposed in this study was;

H3: There is a positive relationship between firm size and the tax aggressiveness.

Firm leverage and tax aggressiveness

The company's choice of capital structure whether to use debt financing or equity financing to finance its operations will also affect the company's tax aggressiveness (Graham et al., 2014). Debt financing involves interest-based instruments, while equity financing does not involve interest-based instruments (Ribeiro et al., 2015). Since debt financing carries interest costs that can be deducted from taxable profits while equity financing does not, companies can minimize their corporate tax liability by adopting debt financing. Previous studies by Muhmad et al., (2020) and Lee and Swenson, (2018) claimed that companies which have high leverage can be indicated as doing a strategy of tax aggressiveness to reduce their corporate tax burden. This is because businesses with high debt levels

will also have high interest costs, which lowers the total amount of taxes the business must pay. Dekle and Lee (2015), however, drew attention by stating that the widespread use of debt financing has led to a bad perception among financial institutions. Financial institutions may be hesitant to lend additional money to companies with high debt financing. As a result, companies have constraints to generate more business income with high levels of debt in business transactions. Based on the description, the hypothesis proposed in this study was;

H4: There is a positive relationship between leverage and tax aggressiveness

METHODOLOGY

Sample Selection

This section provides a detailed overview of the sample selection process and data collection methods. The goal was to select a representative sample of companies that would provide meaningful insights into the relationship between firm-specific characteristics and tax aggressiveness. The research focused on companies listed on Bursa Malaysia and classified as industrial entities. The time period under study spanned six years, from 2016 to 2021. Bursa Malaysia, being the main stock exchange in Malaysia, hosts a diverse range of companies from various sectors, including the industrial sector which this research aimed to explore. By focusing on the period 2016-2021, this study utilised a timeframe characterised by significant regulatory, economic and reporting developments in Malaysia, providing a relevant and insightful context for analysing corporate behaviour. The introduction of the Companies Act 2016 introduced sweeping reforms to corporate governance, financial reporting and compliance in Malaysia. These changes were aimed at improving transparency, accountability and the overall legal framework. Examining the period following the introduction of the Act shed light on how these reforms have impacted corporate tax practises.

Financial data for these companies was sourced from the Thomson Reuters Data stream, a renowned global financial database that offers accurate and comprehensive financial and economic information. The robustness and reliability of this database contributed to the quality and credibility of the research. The financial data was retrieved based on specific measurements for each variable over the six-year period. This approach ensured that the data was consistent, facilitating comparability and strengthening the analysis.

Table 1 outlines the criteria used to filter the initial dataset and arrive at the final sample. The selection process started with 218 industrial product companies listed on Bursa Malaysia from 2016 to 2021. From this initial pool, the dataset was refined further to exclude certain companies. Companies with negative pre-tax income, numbering 127, were removed from the sample. Negative pre-tax income could imply business losses, which might distort the findings since tax planning strategies might differ significantly between profit-making and loss-incurring companies. Additionally, three companies that were delisted from Bursa Malaysia during the period under study were also excluded. Delisted companies might not have complete data for the entire six-year period, which could potentially introduce biases or inaccuracies in the analysis.

Finally, any company with missing data was eliminated, ensuring a comprehensive and complete dataset for analysis. Only one such company was identified and removed. After applying these selection criteria, a total of 87 companies remained for inclusion in the study. Multiplying these companies by the six years under study yielded a final sample of 522 firm-year observations. This meticulous selection process and the rigorous data filtration criteria helped ensure the reliability of the study's findings, contributing to the accuracy and integrity of the research. The final sample size of 522 firm-year observations provided a substantial dataset for the investigation, offering a robust basis for the analysis and conclusions.

Table 1: Firm Sample Selection

Criteria	Number of companies
Industrial product companies listed on Bursa Malaysia (2016-2021)	218
Companies with negative pre-tax income	(127)
Companies delisted from Bursa Malaysia (2016-2021)	(3)
Missing data	(1)
Total number of companies included in the sample	87
Final sample: firm-year observation (87 firms x 6 years)	522

Measurement and model specification variables

In this study, fixed effect, random effect, and pooled ordinary least squares (OLS) models were used to estimate the coefficients of the explanatory variables and compare the results in terms of robustness. The rationale behind the selection of fixed and random effects models lied in their capacity to incorporate both observed and unobserved firm heterogeneity in their estimation models. Rohaya et al. (2008) found that these models provided more accurate estimates of specification than pooled OLS. Moreover, Feeny et al. (2006) pointed out that it is usually essential to determine the suitability of fixed or random models for a given data set. The empirical analyses in this study used the following regression model:

$$ETR_{it} = \beta0 + \beta1ROA_{it} + \beta2AQ_{it} + \beta3TA_{it} + \beta4LEV_{it} + \varepsilon$$

ETR refers to tax aggressiveness measured as current tax expense divided by pre-tax income; ROA was firm performance based on the profitability ratio; AQ was audit quality represented by audit fees; LEV was firm leverage measured as long-term debt divided by total assets; TA was firm size and was measured as logarithm of total assets; $\beta0...\beta4$ are co-coefficients; ε was the error term; i was the i-th company; t was the company years, which spanned from 2016 to 2021.

RESULTS AND DISCUSSION

Descriptive Statistics

This study utilized measures such as mean, median, and maximum and minimum values to present the data. These statistical measures helped analyse the distribution and trends of the data throughout the study period. In terms of the ETR, the mean value indicated that on average, industrial product companies in Malaysia had a tax liability of 27%. This meant that across all the companies surveyed, approximately 27% of their earnings were typically paid as taxes. However, it was worth noting that this is only an average figure and individual company values varied greatly.

The ETR is often used as a measure of the level of aggressiveness of a company's tax planning strategies. In this context, a lower ETR signifies that a company is more aggressive in its tax planning. Thus, the companies with a 0% ETR can be considered highly aggressive in their tax planning, potentially exploiting tax loopholes or incentives to minimize their tax liabilities. This could suggest that these companies did not meet their tax obligations, either due to business losses, tax evasion, or through aggressive tax planning strategies to minimize their tax liabilities. Alongside the ETR, other financial metrics were also analysed including Return on Assets (ROA), Asset Quality (AQ), Total Assets (TA), and Leverage (LEV) as shown in Table 2.

Table 2: Descriptives statistics

	ETR	ROA	AQ	TA	LEV
Mean	27.04215	7.130000	529.2481	16917.73	0.145739
Median	24.00000	5.760000	229.5000	4258.620	0.108796
Maximum	100.0000	55.43000	14000.00	457850.0	0.5222124
Minimum	0.000000	-5.250000	35.00000	443.7400	0.0000000
Std. Dev.	18.25397	0.538330	963.1114	0.138554	5062539.

The average ROA of 7.13% signified the average rate of return that companies were able to generate from their assets. The median ROA at 5.76% gave an indication of the middle value of the dataset, helping to reduce the skewness caused by extreme values. The maximum ROA achieved by any company in the study was a remarkable 55.43%, while the minimum was -5.25%, indicating a company that experienced a loss. AQ had a mean of 529.25, suggesting the average quality of assets held by the companies. The median AQ was much lower at 229.5, indicating that half of the companies had an AQ less than this figure, while the other half had a higher AQ. The maximum AQ value recorded was 14000, which might represent a company with superior asset quality or large asset holdings. On the other hand, the minimum value was only 35, possibly indicating a company with inferior quality assets or fewer assets.

Regarding the TA, the average was found to be approximately 16917.73 units. The highest TA among the companies was 457850 units, while the lowest was 443.74 units. Therefore, the LEV of the companies was analysed. The mean value of leverage was 0.145739, with the median slightly lower at 0.108796. This indicated that on average, the companies were moderately leveraged. The company with the highest leverage had a LEV of 0.5222124, suggesting that it relied heavily on debt financing. Conversely, the minimum leverage value recorded was 0, suggesting a company that did not use any debt financing at all.

Diagnostic Test

Diagnostic tests play a crucial role in regression analysis as they ensure the model's validity and reliability. These tests are designed to detect and address potential issues such as multicollinearity, heteroscedasticity, and autocorrelation. Multicollinearity occurs when independent variables in a regression model are highly correlated, leading to unreliable and unstable estimates of regression coefficients. Heteroscedasticity refers to the presence of non-constant variance in the error terms, which can affect the efficiency of estimators and the validity of hypothesis tests. Autocorrelation is the correlation of residuals across time or space, which can lead to inefficient estimates and biased standard errors. Addressing these issues is vital for accurate interpretation of regression results and ensuring the efficiency of the model estimates.

Multicollinearity

One common diagnostic test for detecting multicollinearity is the Variance Inflation Factor (VIF) test. The VIF quantifies how much the variance of an estimated regression coefficient increases due to multicollinearity. A VIF value greater than 5 is often used as a threshold to indicate significant multicollinearity, which might necessitate corrective measures such as removing or combining variables or applying techniques like ridge regression. High VIF values suggest that the corresponding independent variable is highly collinear with other variables in the model, which can make the coefficient estimates unstable and difficult to interpret. Table 3 provides the VIF values for the independent variables in the model.

Table 3: Variance Inflation Factor

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
ROA	0.016895	3.721039	1.123678
AQ	2.84E-06	4.224043	2.330488
TA	2.44E-10	2.380506	2.140960
LEV	20.13751	2.674667	1.245620

In the presented regression model, the Centered VIF values indicated that multicollinearity was not a significant issue. None of the independent variables had VIF values above 5, suggesting that the model did not suffer from severe multicollinearity. For example, the centered VIF for Return on Assets (ROA) was 1.123678, which was well below the threshold of 5. This implied that ROA was not highly collinear with the other variables in the model, allowing for reliable coefficient estimates. Similarly, the centered VIF values for Asset Quality (AQ), Total Assets (TA), and Leverage (LEV) were 2.330488, 2.140960, and 1.245620, respectively, all of which were also below the threshold, confirming the absence of significant multicollinearity. Therefore, the regression model was evaluated using the VIF test to detect multicollinearity. The results showed that none of the independent variables had Centered VIF values above 5, indicating that the model did not suffer from serious multicollinearity problems. This is crucial for the validity and reliability of the model, as multicollinearity can distort the results and lead to misleading conclusions. By ensuring that multicollinearity was not a significant issue, the model's estimates were more stable, interpretable, and efficient, providing a robust basis for further analysis and decision-making.

Heteroskedasticity Test

The Breusch-Pagan-Godfrey test is a widely used method for detecting heteroscedasticity in regression models. Heteroscedasticity occurs when the variance of the errors is not constant across observations, which can lead to inefficient estimates and unreliable hypothesis tests. The Breusch-Pagan-Godfrey test helps to identify whether heteroscedasticity is present by examining the relationship between the error terms and the independent variables. Specifically, the test evaluates whether the variance of the errors is related to the independent variables, thereby indicating potential heteroscedasticity. Identifying and addressing heteroscedasticity is crucial for ensuring the reliability and validity of the regression model's estimates. Table 4 shows the results of the heteroscedasticity test.

Table 4: Heteroskedasticity Test: Breusch-Pagan

F-statistic	1.072364	Prob. F	0.3697
Obs*R-squared	4.296573	Prob. Chi-Square	0.3674

In the context of the current regression model, the Breusch-Pagan-Godfrey test results indicated no significant evidence of heteroscedasticity. This conclusion was based on the p-values of both the F-statistic and the ObsR-squared statistic. The F-statistic measured the overall significance of the model, while the ObsR-squared statistic was used to test the null hypothesis of homoscedasticity (constant variance). In this case, the F-statistic was 1.072364 with a corresponding p-value of 0.3697, and the Obs*R-squared value was 4.296573 with a p-value of 0.3674. Both p-values were above the common significance level of 0.05, indicating that there was no significant evidence to reject the null hypothesis of homoscedasticity.

These results suggested that the variance of the error terms in the regression model was constant, meaning that heteroscedasticity was not a concern. This is important because the presence of heteroscedasticity can lead to inefficient estimates and affect the validity of hypothesis tests, potentially leading to incorrect conclusions. By confirming the absence of significant heteroscedasticity, the reliability and efficiency of the regression model's estimates were upheld, allowing for more accurate interpretation and robust statistical inferences.

Autocorrelation

The Durbin-Watson statistics are a widely accepted and frequently used test for detecting the presence of autocorrelation, particularly first-order autocorrelation, in the residuals of a regression model. Autocorrelation occurs when the residuals (errors) are correlated across time or observations, which can lead to inefficient estimates and biased test statistics. Detecting and addressing autocorrelation is essential for ensuring the accuracy and reliability of the regression model. The Durbin-Watson test specifically assesses whether there is a systematic pattern in the residuals, which would indicate the presence of autocorrelation. In the current regression model, the Durbin-Watson statistic was calculated to be 2.071741. This value was close to 2, which is the ideal value indicating no autocorrelation. Values significantly different from 2 suggest the presence of positive or negative autocorrelation. In addition to the Durbin-Watson statistic, the significance of the F-statistic and its corresponding p-value were also examined. The F-statistic was significant with a p-value of 0.0000, which is typically interpreted as strong evidence against the null hypothesis. However, in this context, the focus was on the Durbin-Watson statistic rather than the F-statistic itself.

Table 5: Durbin Watson

Durbin-Watson statistic	F-statistic
2.071741	0.0000***

Based on the Durbin-Watson value of 2.071741 and the significant F-statistic as indicated in Table 5, there was no significant evidence of autocorrelation in the residuals of the regression model. This is crucial for the validity of the model, as autocorrelation can distort the results and lead to incorrect inferences. The absence of significant autocorrelation ensures that the residuals are independent, which is a key assumption of the classical linear regression model. Consequently, the model's estimates were efficient and unbiased, allowing for more reliable and accurate interpretation of the regression results.

Regression Results

This research combined both time-series and cross-sectional data, which demanded the application of two distinct econometric models: the fixed-effect model and the random-effect model. These models are crucial in panel data analysis to examine relationships between a dependent variable and one or more independent variables. The critical task of choosing the most appropriate model for the data at hand was executed using the Hausman test. This statistical test compares the consistency of an estimated coefficient in the fixed effects and random effects models, guiding an evidence-based model selection. The result of the Hausman test indicated that the random effects model was the most suitable for this study, implying that the variation across entities, such as companies, is random and uncorrelated with the predictor variables over time. Consequently, the primary analysis was conducted using the random effects model, under the assumption that the individual effects vary randomly across the entities being studied and were not correlated with the independent variables.

Table 6 provides the results from the estimation of factors influencing corporate tax aggressiveness. Each variable is reported with its coefficient, standard error, t-statistic, and p-value (probability). The result showed that the regression results indicated that firm performance, audit quality and firm size had a remarkable impact on tax aggressiveness. It is worth highlighting that the adjusted R^2 value was 0.3394, indicating that numerous extrinsic and intrinsic factors could have a remarkable influence on tax aggressiveness in Malaysian industrial firms. It implied that 33.94% of the variance of tax aggressiveness was explained by the independent variables of the model. This value indicates how well the independent variables (ROA, audit quality, firm size and firm leverage) explain the variability of tax aggressiveness of the companies in the sample. The F-statistic was highly significant (p-value < 0.001), suggesting that the overall model was statistically significant. This understanding can help policy makers, regulators and stakeholders develop strategies to curb tax aggressiveness by focusing on these important factors.

Table 6: Random effects model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-1.080130	0.119997	-9.001318	0.0000***
AQ	0.008625	0.002068	4.171331	0.0000***
TA	-0.000235	4.77E-05	-4.927794	0.0000***
LEV	-0.819463	3.866973	-0.211913	0.8323
C	25.99982	1.666384	15.60254	0.0000
Adjusted R-squared	0.339495	Durbin-Watson stat		2.071741
F-statistic	45.61468	Prob(F-statistic)		0.0000***

Notes: *** indicates statistically significant at the 1% significance level

The ROA had a negative coefficient of -1.080130, indicating that higher ROA leads to decreased tax aggressiveness. This suggested that companies with higher returns on assets generate more legitimate income, reducing the necessity for aggressive tax strategies. The statistical significance of this relationship at the 1% level supported its relevance in the model. A one-unit increase in ROA led to a decrease in ETR by 1.080130, which meant paying a lower tax. In practical terms, this implied that as firms became more efficient in generating profits from their assets, they were more inclined to engage in aggressive tax avoidance. The results supported H1 that firm performance was negatively related to ETR, implying that the higher the profitability, the greater the tax aggressiveness of a firm. Consistent with these results, Muhmad et al. (2020) argued the same view by claiming that firms were more aggressive in tax planning to avoid paying higher taxes due to their high profitability. This finding is crucial for policymakers and regulators as it suggests that improving corporate governance and operational efficiency could be effective strategies in reducing tax aggressiveness among firms.

Regarding audit quality, the result showed a positive relationship with ETR, suggesting that firms with high audit quality tend to avoid tax aggressiveness. The positive coefficient (0.008625) indicated that an increase in audit quality is positively associated with ETR. This suggested that companies with better audit quality might engage in less aggressive tax planning. The results of the study are consistent with the empirical evidence presented by Marzuki and Syukur (2021) and Zainazor et al. (2023) suggesting that audit fees are an indicator of the time spent by auditors to mitigate the potential risks associated with overly aggressive tax planning techniques. Hence, H2 was supported. Accordingly, the results are congruent with the Agency Theory, examined by Jensen and Meckling (1976) and Watts and Zimmerman (1978). They contended that the quality of the external auditor is viewed as a strategy to reduce agency costs by ensuring that the principal acts in the best interest of the agent at all times.

The results of this study supported H3 which posited that firm size was negatively associated with ETR. The negative coefficient in one unit of firm size led to a decrease in ETR by 0.000235, which meant paying a lower tax. This suggested that larger firms exhibited greater tax aggressiveness relative to smaller firms. Richardson and Lanis (2007) provided evidence to support the notion that larger firms are associated with lower ETR. This relationship can be attributed to the superior tax planning capabilities of larger firms, which allow them to optimize the use of their resources.

The final hypothesis of this study stated that there was a negative relationship between leverage and ETR. However, the results (p=0.8323) did not provide evidence for H4 and was therefore rejected as the result was not statistically significant. This suggested that interest cost relative to total debt had no effect on firms' tax aggressiveness. Darsani and Sukartha (2021) found similar results regarding the lack of impact on the ETR of mining companies listed on the Indonesia Stock Exchange during the period 2015-2019, despite the differences in their leverage ratios. The results presented were also consistent with the research of Richardson and Lanis (2007) and Harjito and Sari (2017), who indicated that the use of leverage, as measured by the debt-to-equity ratio, did not affect the tax aggressiveness of firms.

Insights from Hypotheses Testing on Tax Aggressiveness

This study significantly contributes to the existing literature on corporate tax behaviour by providing empirical evidence on how various firm characteristics relate to tax aggressiveness. The results presented in Table 7 offer valuable insights into the relationships between firm performance, audit quality, firm size, firm debt, and their influence on tax aggressiveness. Understanding these relationships helps to paint a more comprehensive picture of the factors driving tax planning strategies within firms. By examining these dynamics, the study highlights the multifaceted nature of tax aggressiveness beyond mere profitability, emphasizing the need for a broader perspective when evaluating corporate tax behaviours.

Table 7: Summary of Hypotheses Testing

Hypothesis	Description	Results
H1	There is a positive relationship between profitability and tax aggressiveness.	Supported
H2	There is a negative relationship between audit quality and tax aggressiveness.	Supported
H3	There is a positive relationship between firm size and the tax aggressiveness.	Supported
H4	There is a positive relationship between leverage and tax aggressiveness	Rejected

The findings indicated a positive relationship between profitability and tax aggressiveness, supporting Hypothesis 1. This suggests that more profitable firms are likely to engage in more aggressive tax planning strategies to reduce their tax liabilities. This behavior can be attributed to the greater resources and incentives that profitable firms have to invest in tax planning. Furthermore, the support for Hypothesis 2, which posits a negative relationship between audit quality and tax aggressiveness, underscores the role of high-quality audits in curbing aggressive tax practices. Firms with higher audit quality are subject to more rigorous scrutiny, which likely deters them from engaging in risky tax strategies that could be flagged during audits.

The analysis also revealed a positive relationship between firm size and tax aggressiveness, supporting Hypothesis 3. Larger firms may have more complex structures and greater resources to engage in tax planning activities, making them more likely to pursue aggressive tax strategies. This finding indicates that firm size is a significant factor in understanding corporate tax behavior. On the other hand, Hypothesis 4, which suggested a positive relationship between leverage and tax aggressiveness, was rejected. This indicated that higher levels of debt do not necessarily lead to increased tax aggressiveness, contradicting the expectation that firms with higher leverage would be more motivated to reduce tax liabilities to manage debt-related costs.

These findings have important implications for investors, auditors, and policymakers. Investors should consider factors such as firm size, profitability, and audit quality when assessing a company's tax risk profile. Understanding these relationships can help investors make more informed decisions about the potential risks and rewards associated with a firm's tax strategies. For auditors, the insights can improve audit planning and risk assessment by identifying key areas where aggressive tax planning might be more likely. Policymakers can also benefit from these findings by understanding the drivers of tax aggressiveness and potentially developing regulations or guidelines to mitigate such behaviours.

CONCLUSION

The primary objective of this research was to explore the relationship between specific characteristics of firms and their degree of tax aggressiveness. The overarching findings indicated that better performing and larger firms tend to exhibit a higher propensity for aggressive tax planning. This suggests that successful and sizeable companies have the resources and capabilities to strategize and optimize their tax obligations effectively.

Interestingly, the study also unveiled that firms boasting high audit quality are less likely to engage in tax aggressiveness. This underscores the importance of rigorous and comprehensive audits, which seem to deter companies from employing overly aggressive tax planning strategies. The results highlight the crucial role of auditors in ensuring proper tax reporting, suggesting that stringent enforcement of auditors' responsibilities could potentially curb tax manipulative behaviour.

Despite its significant insights, it is important to acknowledge certain limitations of this study. These limitations present opportunities for improvement and avenues for future research. One such opportunity could involve broadening the scope to include aspects of corporate governance such as ownership structures, board composition, and the functioning of the audit committee. This could provide a more comprehensive picture of the factors that influence tax aggressiveness, including potential checks and balances that could mitigate aggressive tax behaviour.

In addition, the scope of the study was primarily confined to analysing industrial companies. Future research could benefit from expanding the sample to encompass a broader array of industries. This would enhance the generalizability of the results, allowing for more encompassing conclusions about the link between firm-specific characteristics and tax aggressiveness. It would also offer a more holistic understanding of how different industries approach tax planning, providing further insights into the practices and strategies they use to navigate their tax obligations. In conclusion, while this study provides valuable insights into the factors influencing corporate tax aggressiveness, its findings should be understood in light of its limitations. The exploration of these limitations in future research could greatly contribute to a more nuanced and comprehensive understanding of corporate tax aggressiveness.

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