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# Assessing the Tendency of Corporate Tax Fraud: Panel Data Analysis of Technology Companies in Malaysia

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## ABSTRACT

This study investigated the potential indicators of corporate tax fraud by assessing the effective tax rate amongst technology companies listed on Bursa Malaysia between 2016 and 2022. A final sample of 26 firms, accounting for 182 unique observations, was chosen for this study, excluding companies with negative pre-tax income and insufficient data. The panel data analysis was performed using both a Hausman test and a fixed effect model, highlighting the significant inverse relationships between financial distress and firm size with the constant factor. Descriptive statistics were provided to understand the nature of the dataset, with significant variances in the mean, median, and extreme values of all the variables under study. The trend of ETR from 2016 to 2022 was also investigated, providing further insights into the overall tax behaviour of these firms. The study revealed a significant negative relationship between financial distress and firm size towards corporate tax fraud. This research could help regulators, tax authorities, and corporate entities in their efforts to prevent and mitigate tax fraud, by understanding the financial markets that might indicate such tendencies.

## 1. INTRODUCTION

Corporate tax fraud has become a serious problem worldwide due to its significant economic repercussions. It interferes with the equitable distribution of tax burdens across businesses, distorts competition, and deprives governments of income needed for public spending. Given the importance of technology

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enterprises in the national economy, the ramifications can be serious, particularly in growing nations such as Malaysia. By analysing the relationship between the indicators of corporate tax fraud and effective tax rate (ETR), this study intended to shed light on potential signs of corporate tax fraud among technological companies.

Numerous studies have been conducted throughout the years to investigate various elements of corporate fraud, with the majority focused on the immediate consequences of fraudulent behaviour. However, detecting and preventing corporate tax fraud necessitates a thorough grasp of the various leading indicators. As a result, financial distress, firm size, sales growth and leverage ratio were used as proxies for the proclivity for corporate tax fraud in this study. These criteria are important in this context because corporations in financial difficulties may resort to aggressive tax planning tactics, potentially leading to tax fraud.

This study focused on technology companies listed on the Bursa Malaysia from 2016 through 2022. Given its rapid expansion and growing importance to the Malaysian economy, the Malaysian technology industry provided an appealing backdrop for our study. Understanding the mechanics of corporate tax fraud in this industry could have far-reaching consequences for tax rules, corporate governance, and the sector's general health. The findings of this study could help shape successful ways to avoid corporate tax evasion, resulting in more strong economic growth.

## **2. THE ECONOMIC IMPLICATIONS OF CORPORATE TAX FRAUD**

Corporate tax fraud is a significant challenge in the economic landscape, particularly in dynamic sectors like technology in Malaysia. This fraudulent activity, involving the deliberate misrepresentation or omission of information to reduce tax liabilities, disrupts the equitable distribution of tax burdens, leading to unfair competitive advantages (Mathias & Wardzynski, 2023). Such deceitful practices have far-reaching implications, affecting not just individual businesses but the entire economic environment, necessitating a thorough exploration of its consequences and the development of robust detection and prevention strategies.

At the macro level, corporate tax fraud can severely impact the economy. When companies in the technology sector engage in such practices, they contribute less to government revenues. This shortfall can limit the government's ability to fund public services and investments, crucial for overall economic growth and stability. Furthermore, tax fraud can lead to an uneven playing field, where honest businesses are at a disadvantage compared to those evading taxes. This imbalance can distort market dynamics, leading to inefficiencies and potentially stifling innovation and growth in the sector.

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Alm, (2021) asserted that technological businesses often have complex and rapidly evolving business models, making it easier to obscure financial transactions and engage in corporate tax fraud. A notable example is the case of Satyam, where the company falsified its accounts for several years, significantly inflating its revenues, profits, and cash balances. These practices enabled Satyam to manipulate expenses and deductions, creating a facade of compliance while effectively minimizing actual tax payments and potentially evading appropriate tax liabilities. In Malaysia, high-profile corporate fraud cases involving technology companies like Nasioncom, Wimems, and MEMs Technology have shocked stakeholders and the public. Despite the introduction of various mechanisms to improve the quality of financial reporting, such as the Company Act 2016, these technology companies have engaged in various financial and accounting malpractices.

In addition, Safeei (2022) highlighted that technology companies are especially prone to corporate tax fraud due to their intricate and constantly evolving business models, which can obscure financial transactions. Operating on a global scale, these companies often shift profits to low-tax jurisdictions, exploiting regulatory gaps to minimize their tax burdens. Additionally, they manipulate the valuation of intangible assets like intellectual property to reduce their taxable income. These practices create significant opportunities for aggressive tax planning and potential corporate tax fraud. For example, by strategically allocating profits to subsidiaries in countries with favorable tax regimes, tech firms can drastically cut their overall tax liabilities, making it harder for tax authorities to track and regulate these activities.

The challenge of addressing tax fraud in technology companies is further compounded by weak corporate governance. Strong corporate governance is essential for ensuring transparency and compliance with financial regulations, (Mustapha et al., 2020). However, when governance structures are inadequate, the likelihood of financial manipulation and tax evasion increases. Boards of directors and audit committees play a crucial role in overseeing tax strategies and financial reporting, but their effectiveness depends on their vigilance and commitment to ethical standards. Strengthening corporate governance involves implementing stringent internal controls, conducting regular audits, and fostering a corporate culture that values ethical behavior and adherence to tax laws. Moreover, regulatory bodies need to enhance their oversight and enforcement capabilities to counter the sophisticated tax avoidance schemes used by tech companies. By ensuring that these companies contribute their fair share of taxes, regulators can maintain the integrity of the financial system. Ultimately, the relationship between corporate governance and tax planning is pivotal; companies with strong governance are less likely to engage in fraudulent tax practices, promoting greater transparency and accountability within the technology sector, (Mahmud et al., 2019).

On a microeconomic scale, the implications of corporate tax fraud are equally concerning, (Li et al. 2024). Companies engaging in fraudulent activities risk severe financial and reputational damage. Discovery of such practices can lead to legal penalties, loss of investor confidence, and a tarnished public image. These consequences can be particularly detrimental in the technology sector, where trust and credibility play a vital role in attracting investments and maintaining customer loyalty, (Ado et al., 2022). The long-term viability of these enterprises can be jeopardized, affecting not only the companies themselves but also their employees, suppliers, and customers.

In Malaysia's technology sector, the importance of effective mechanisms for detecting and preventing corporate tax fraud cannot be overstated. Implementing robust regulatory frameworks and compliance

systems is crucial to safeguard the sector's integrity and competitiveness. This includes the use of advanced technologies for monitoring financial transactions and ensuring transparency. Additionally, fostering a culture of ethical business practices and corporate responsibility is essential in mitigating the risks of tax fraud, (Mandal & S, 2023).

Beyond the direct economic implications, corporate tax fraud in the technology sector can have broader social consequences. Reduced government revenues mean less funding for essential public services like healthcare, education, and infrastructure development. This can have a ripple effect, impacting the quality of life and economic opportunities for the broader population. The social contract is also undermined, as public trust in both the corporate sector and government institutions can be eroded, (Huntjens & Kemp, 2022).

The economic implications of corporate tax fraud in Malaysia's technology sector are multifaceted and far-reaching. They encompass not only direct financial impacts but also broader social and economic consequences. Addressing this challenge requires a concerted effort from both the private and public sectors. This includes the adoption of stringent regulatory measures, the promotion of ethical business practices, and the use of technology to enhance transparency and accountability. By tackling corporate tax fraud effectively, Malaysia can ensure a more equitable, competitive, and sustainable economic environment for its technology sector, (Das et al. 2023)

## **2.1 Indicators Of Corporate Tax Fraud**

In the context of business, particularly in the fast-paced technology sector, the issue of tax malpractices is becoming increasingly prominent. This is especially true in Malaysia, where the intersection of swift growth and complex financial operations has brought this concern to the forefront. Authorities and analysts are intensifying their efforts to understand and address the risks linked to these deceptive financial activities. A critical aspect of this endeavour is examining the effective tax rate, a key indicator of corporate tax fraud that can reveal much about a company's approach to tax liabilities (Adefolake & Omodero, 2022). In this study, corporate tax fraud involves the deliberate manipulation or falsification of a company's financial statements or tax documents to evade tax liabilities, reduce tax payments, or misrepresent financial performance, with the effective tax rate serving as a proxy for detecting such fraud. This rate can provide valuable insights into the aggressiveness of a company's tax management strategies. Significantly lower effective tax rates compared to the statutory or industry averages often trigger suspicions about possible tax avoidance or evasion. This study attempted to examine the relationship between the indicators of corporate tax fraud towards corporate tax fraud to gain a deeper understanding of the prominent factors that influence corporate tax fraud.

One of the significant aspects of corporate tax fraud is the role of financial distress, which can be a harbinger of such unethical practices. Companies grappling with financial challenges may feel compelled to enhance their financial standing, sometimes resorting to aggressive tax planning or even outright deceitful practices. This is a critical concern in the technology sector, characterized by rapid shifts and intense competition, leading to unpredictable financial outcomes. Understanding how financial distress might correlate with unethical tax activities is crucial for regulators and auditors, aiding in the identification of companies at greater risk of such behaviour, (Azmi et al., 2020). This is in line with Wu (2024) who

asserted that businesses in financial difficulties are more likely to evade taxes in order to preserve liquidity and prevent bankruptcy.

The relationship between effective tax rates and financial distress in the context of potential tax malpractices is intricate. A low effective tax rate, while indicative of tax planning, does not automatically equate to illegal activities. Conversely, financial distress, though a risk factor, is not conclusive evidence of tax fraud. The challenge lies in differentiating between lawful tax-saving measures and illicit actions, (Kemsley et al. 2023). This demands a deep understanding of tax laws, corporate finance, and the unique aspects of Malaysia's technology sector. Analysts need to meticulously review financial records, tax filings, and other pertinent data to identify patterns that could suggest fraudulent conduct.

Another indicator of corporate tax fraud is firm size, determined by calculating the company's total assets. Larger firms often have more complex operations, diverse revenue streams, and intricate financial structures, which can make it easier to obscure financial transactions and engage in tax fraud, as noted by Kim and Im (2017). These complexities provide numerous opportunities for manipulation and concealment of financial irregularities, making it challenging for auditors to detect fraudulent activities. Larger companies may also employ sophisticated tax planning strategies that skirt the line between legal tax avoidance and illegal tax evasion, exploiting loopholes in tax regulations to minimize their tax liabilities.

Furthermore, Ngah et al. (2020) found a statistically significant positive relationship between firm size and tax fraud detected during tax audits. This indicated that larger companies are more likely to engage in fraudulent activities due to their expansive financial operations and the increased opportunities for manipulation. These firms might also engage in earnings management strategies, such as manipulating revenue recognition or expense reporting, to present a more favorable financial position. By doing so, they not only evaded taxes but also potentially mislead investors and regulators about their true financial health. The combination of complex financial structures and earnings management tactics in larger firms highlights the need for robust auditing and regulatory frameworks to detect and deter corporate tax fraud effectively, (Ado et al., 2020).

For Malaysia's technology sector, the implications are profound. As a vital contributor to the national economy, maintaining the integrity of this sector is essential for attracting investment and sustaining economic growth. Given the rapid evolution and inherent complexities of technology-based businesses, they are potentially more prone to tax-related malpractices. Hence, a comprehensive grasp of how effective tax rates and financial distress might signal possible tax fraud is crucial, (Wu & Zhang, 2022). Such knowledge is instrumental in formulating specific strategies to monitor and scrutinize companies exhibiting risk indicators. Safitri et al. (2024) held the view that firms that presented financial information in an opaque manner were more likely to engage in tax fraud, underscoring the need for transparency and accountability.

To effectively detect and prevent tax malpractices in this sector, a multifaceted approach is necessary. Regulators and auditors should be equipped with advanced tools and methodologies for precise financial data analysis. This includes the use of sophisticated data analytics and machine learning algorithms capable of detecting irregularities in tax payments and financial statements. Continuous education and training for professionals in this field are also vital to stay abreast of the evolving techniques used in tax fraud, (Alharasis et al. 2023). Furthermore, fostering collaboration among regulatory bodies, financial institutions, and technology companies is key to establishing a transparent and compliant business environment. Thus, understanding the relationship between the indicators of corporate tax fraud and the fraud itself is essential

for the Malaysian technology sector, as highlighted by Rakia et al. (2023). This understanding is the cornerstone for developing effective mechanisms to detect and prevent fraud.

As the technology sector continues to grow and innovate, companies often face immense pressure to maintain profitability and deliver value to shareholders. This pressure can sometimes lead to aggressive tax planning strategies that push the boundaries of legality. Meanwhile, a legitimate business strategy, becomes problematic when it crosses into evasion or fraud, undermining the integrity of financial reporting and the overall tax system. Research highlights the importance of factors such as tax knowledge, morale, and enforcement measures in influencing compliance behaviour. Findings suggest that a lack of understanding and awareness about tax obligations, coupled with weak enforcement mechanisms, can create opportunities for practices that blur the line between legal planning and unethical evasion. Strengthening these aspects is critical to fostering compliance, maintaining transparency, and upholding trust in financial reporting and tax systems, (Azmi et al., 2020b). Hence, it is crucial for companies to find a balance between optimizing their tax obligations and adhering to ethical standards.

Identifying signs of tax fraud, such as inconsistencies in financial statements or unusual fluctuations in effective tax rates, allows regulators and auditors to intervene early, preventing significant financial malpractices. As the Malaysian technology sector expands, adhering to ethical tax practices becomes vital for fostering a fair and competitive market. This adherence not only protects government revenue, which is essential for funding public services and infrastructure but also enhances the sector's reputation, attracting more investors and promoting sustainable growth. Effective corporate tax planning should be transparent and comply with legal requirements, ensuring long-term business success without compromising ethical standards, (Rashid et al., 2015). Strong corporate governance is critical in this context, with boards and audit committees playing a pivotal role in maintaining oversight and accountability. By fostering a culture of compliance and integrity, companies can avoid the pitfalls of tax fraud and contribute positively to the economy. Ultimately, a robust business ecosystem benefits everyone from the companies themselves to their employees, customers, and the broader community. In this way, ethical tax practices and sound corporate governance work together to create a thriving, sustainable economic environment.

### **3. METHODOLOGY**

The investigation began with a comprehensive list of 46 technology companies listed on Bursa Malaysia, the principal stock exchange in Malaysia. To ensure relevance and veracity in the analysis, a rigorous selection procedure was employed in this study. Initially, companies that reported a negative pre-tax income during the investigation period were eliminated. This phase was intended to eliminate any companies displaying signs of financial distress or underperformance, as these could potentially skew the results. This refinement eliminated fifteen companies from the initial list.

In the subsequent phase, a comprehensive data sufficiency check was performed. For the validity of any panel data analysis, a complete and consistent data set is indispensable. Companies with insufficient data or inconsistent reporting were therefore eliminated from consideration. This process resulted in the elimination of five more businesses due to insufficient data. Following these procedures, the final sample consisted of 26 technology companies that were emblematic of the sector in the Malaysian market. This

meticulously selected sample size ensured the validity and dependability of the results by minimizing any distortions that could arise from outliers or data anomalies.

The analytic procedure utilized a balanced panel data approach, a statistical technique that combines cross-sectional and time series data for robust inference statistics. From 2016 to 2022, a total of 182 observations were collected for the ultimate sample of 26 companies over a seven-year period. These observations represented the data of the 26 companies for each of the seven years and provided a solid foundation for analysing trends, patterns, and relationships between the variables under consideration. Table 1 summarizes the entire selection procedure and provides a comprehensive breakdown of sample refinement.

Table 1. Sample selection procedures

Description	Number of companies
Technology companies listed in Bursa Malaysia	46
Less: Companies with negative pre-tax income	(15)
Less: Companies with insufficient data	(5)
Final sample	26

As shown in Table 2 below, the study employed a set of meticulously chosen variables to comprehensively understand the relationship between corporate tax fraud and various company characteristics. The dependent variable, corporate tax fraud, was represented by the Effective Tax Rate (ETR). ETR was calculated as the total income tax expense divided by pre-tax income, serving as a proxy to gauge the extent of tax fraud. A significantly lower ETR compared to industry norms can suggest aggressive tax management strategies or potential tax evasion. By focusing on ETR, the study aimed to uncover patterns and deviations in tax reporting that may indicate fraudulent activities.

The independent variables in this study were selected to capture different dimensions of a company's financial health and operational characteristics. Financial distress (FD) was quantified using the Altman Z-score, a well-established metric that combines five financial ratios to assess a company's likelihood of bankruptcy. A lower Z-score signals higher financial distress, which might drive firms to engage in deceptive tax practices to appear more financially stable. Sales growth (SGR) was measured by the year-over-year change in sales, highlighting how rapid changes in revenue might influence tax strategies. Leverage (LEV), calculated as the ratio of total debt to total assets, reflected a company's debt dependency, which can impact its tax deductions and potential for fraud. Lastly, firm size (FSZ) was gauged by total assets, recognizing that larger firms often have more resources and complex financial structures, potentially facilitating sophisticated tax avoidance schemes. These variables collectively provide a robust framework for analyzing how different financial pressures and characteristics influence a company's propensity to commit tax fraud.

Table 2. The Proxies of Corporate Tax Fraud

Variables	Indicators	Measurement	Proxy
Dependant Variable	Corporate tax fraud	$ETR = \text{Income tax} / \text{Pre income tax}$	ETR
Independent Variables	Financial distress	$Z \text{ score} = 1.2x(1) + 1.3x(2) + 3.3x(3) + 0.6x(4) + 1.0x(5)$	FD
	Sales growth	$(\text{Current year Sales} - \text{Previous year Sales}) / \text{Previous year sales}$	SGR
	Leverage	Debt ratio	LEV
	Firm size	Total assets	FSZ

#### 4. RESULTS ANALYSIS

The results section presents a comprehensive analysis of the data gathered from the selected sample of 26 technology companies listed on Bursa Malaysia, extending from 2016 to 2022. This analysis aimed to scrutinize the tendency of corporate tax fraud among these firms and identify any potential patterns or relationships. The analysis begins with a preliminary examination of the data, which primarily involved detailing the key characteristics of the dataset. By investigating the individual variables, the study aimed to establish a solid foundation for further and more detailed analyses.

The following section, provides the initial exploration and understanding of the dataset, focusing on the central financial information related to the sample of companies. The variables of interest which were ETR, FD, SGR, LEV, and FSZ were dissected using descriptive statistics. The intent was to offer a preliminary view of the dataset, thereby establishing a context for the subsequent analyses. The average values, range, and degree of variation for each variable presented a broad picture of the financial health and tax behaviour of the sampled firms, setting the stage for deeper inferential statistics and trend analysis.

##### 4.1 Preliminary Data Analysis

The initial stage of the analysis involved providing a comprehensive understanding of the dataset by detailing the primary characteristics of the financial information related to the selected companies. This analysis focused on five key financial variables: the Effective Tax Rate (ETR), Financial Distress (FD), Sales Growth Rate (SGR), Leverage (LEV), and Firm Size (FSZ). Each variable was examined to understand its central tendencies and variability, offering insights into the financial health and tax behaviors of the companies in the sample. By breaking down these elements, the analysis provided a foundation for interpreting the broader implications of the data and understanding the nuanced behaviors within the Malaysian technology sector.

The Effective Tax Rate (ETR) is a critical measure used to assess the tax efficiency of firms. On average, the ETR across the companies was approximately 0.189. This indicated that, on average, the firms paid 18.9% of their pre-tax income in taxes. However, there was considerable variation, with the ETR ranging from a minimum of 0 to a maximum of 1.753. The median ETR was slightly lower than the mean,

at 0.166, suggesting that while some firms managed to keep their tax liabilities exceptionally low, others paid a substantially higher rate. This variation could be attributed to differences in tax planning strategies, operational efficiencies, and possibly aggressive tax avoidance practices. Such discrepancies in ETR among firms could be due to various factors, including the nature of their operations, the geographical spread of their income sources, and their ability to leverage tax laws to their advantage.

Financial Distress (FD) was measured using a composite score that reflected the financial health of the firms. The average FD score was around 2.218, with a median value of 2.077. The range was quite broad, with the FD score varying from a minimum of 0.547 to a maximum of 5.529. This indicated that while some firms were financially stable, others faced significant financial challenges. Firms with higher FD scores were likely experiencing greater financial distress, which could lead them to engage in aggressive tax planning or even fraudulent activities to improve their financial position. Understanding the distribution of FD scores helped highlight the varying degrees of financial health within the sample. Firms under financial distress might adopt risky strategies to preserve cash flow, including deferring tax payments or exploiting loopholes in the tax system to report lower taxable incomes.

Sales Growth Rate (SGR) was another important variable that indicated the growth trajectory of the firms. The average SGR was 0.199, but this figure varied widely across the sample. The minimum SGR was -0.457, indicating a significant decline in sales for some firms, while the maximum was 5.614, reflecting substantial sales growth for others. The median SGR was 0.107, suggesting that while many firms experienced moderate growth, a few outliers significantly skewed the average. This wide range in sales growth highlighted the dynamic nature of the technology sector, where rapid innovation and market shifts could lead to significant variations in firm performance. Companies experiencing high growth may be better positioned to invest in tax planning resources, whereas those with declining sales might struggle to maintain compliance with tax regulations.

Leverage (LEV), measured by the debt-to-assets ratio, provided insights into the capital structure of the firms. On average, the LEV was relatively low at 0.049, with a median value of 0.028. The range extended from a minimum of 0 to a maximum of 0.309. This indicated that while some firms operated with minimal or no debt, others relied more heavily on debt financing. The low average LEV suggested that, generally, the firms in the sample were not highly leveraged, which could imply a lower risk of financial distress from debt burdens. However, firms with higher leverage might engage in aggressive tax planning to maximize interest deductions and reduce taxable income. The capital structure of a firm can significantly impact its financial strategy, including how it approaches tax liabilities and potential investments in growth opportunities.

Firm Size (FSZ), measured by total assets, showed substantial variation across the sample. The average firm size was approximately RM 652,011.8, with a median of RM 446,384.5. The smallest firm had total assets of RM 33,048, while the largest had RM 4,466,610. This wide range indicated significant diversity in the scale of operations among the firms. Larger firms may have more resources and capabilities to engage in complex tax planning strategies, whereas smaller firms might be more constrained in their tax planning options. The variation in firm size underscored the need to consider firm-specific characteristics when analyzing tax behavior and financial health. Larger firms were often more visible to regulators and might have more sophisticated internal controls, while smaller firms may lack the resources to invest in advanced tax planning.

Table 3. Descriptive Statistics for the Final Sample

	<b>ETR</b>	<b>FDR</b>	<b>SGR</b>	<b>LEV</b>	<b>FSZ</b>
Mean	0.189110	2.218759	0.198882	0.048750	652011.8
Median	0.166028	2.077417	0.107408	0.028311	446384.5
Maximum	1.753322	5.528673	5.614405	0.309425	4466610.
Minimum	0.000000	0.546964	-0.457030	0.000000	33048.00

By examining these descriptive statistics from the Table 3 above, a detailed understanding of the financial landscape of the technology firms in the sample was achieved. The variations in ETR, FD, SGR, LEV, and FSZ highlighted the diverse financial conditions and tax behaviors within the sector. This comprehensive analysis provided a foundation for exploring the relationships between these variables and their impact on corporate tax fraud, offering valuable insights for policymakers, regulators, and stakeholders in the technology industry. Understanding these relationships can help in designing better regulatory frameworks and corporate policies that promoted fair tax practices and financial stability across the sector.

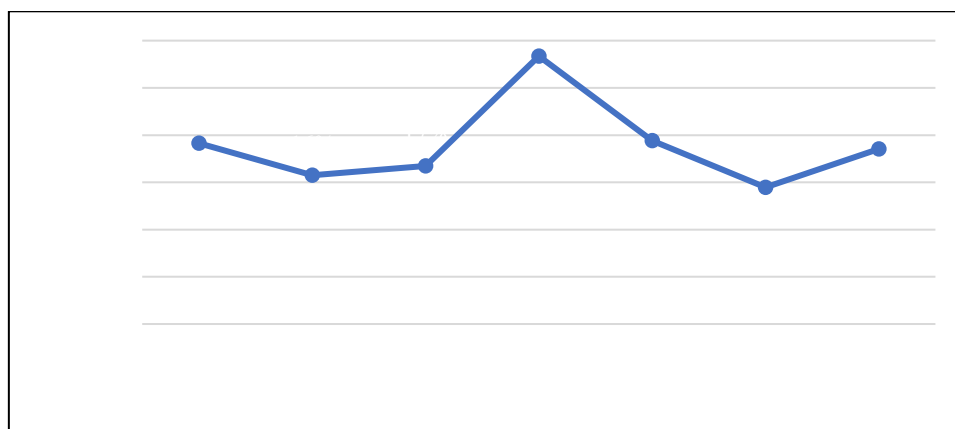


Figure 1. Trend of ETR from year 2016 until 2022

This research presents an in-depth analysis of the effective tax rate trends from 2016 to 2022 across the sampled technology firms in Malaysia, as illustrated in Figure 1. The temporal analysis of these trends is crucial in understanding the evolving patterns of corporate tax behaviour among these entities. The trends and fluctuations of the effective tax rate can reveal underlying tax strategies, hinting towards potential aggressive tax planning or fraud, thus necessitating greater scrutiny and regulatory attention.

The Hausman test was instrumental in guiding the model choice between fixed and random effects. The results as shown in Table 4, presenting a Chi-square statistic of 55.51 with 5 degrees of freedom and a

p-value of less than 0.01, led to the rejection of the null hypothesis. This implied the presence of systematic differences in the company-specific error term, rendering the fixed effects model more suitable for this study than the random effects model.

Table 4: Hausman test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	55.515779	5	0.0000

In the subsequent application of the fixed effects model, diverse patterns of statistical significance were observed among the variables, as shown in Table 5. The intercept term or constant was highly significant, suggesting the existence of a baseline effective tax rate that firms are expected to pay irrespective of other influencing factors. To formally represent this relationship, the following regression equation was used:

$$ETR_{it} = \beta_0 + \beta_1 FDR_{it} + \beta_2 LEV_{it} + \beta_3 SGR_{it} + \beta_4 FSZ_{it} + \epsilon_{it}$$

Where:

- $ETR_{it}$  is the effective tax rate for firm  $iii$  at time  $t$ ,
- $\beta_0$  is the intercept term or constant,
- $\beta_1 FDR_{it}$  is the coefficient for financial distress,
- $\beta_2 LEV_{it}$  is the coefficient for leverage,
- $\beta_3 SGR_{it}$  is the coefficient for sales growth,
- $\beta_4 FSZ_{it}$  is the coefficient for firm size,
- $\epsilon_{it}$  is the error term.

The variables of financial distress (FD) and firm size (FSZ) both displayed significant negative relationships with the ETR. This indicated that firms experiencing higher levels of financial distress or larger firms tended to have lower effective tax rates. The negative coefficient for FD implied that as financial distress increased, firms engaged in more aggressive tax planning to conserve cash flow, potentially crossing into fraudulent behavior. Larger firms, indicated by FSZ, utilized their resources to employ sophisticated tax planning strategies that reduce their tax liabilities. These findings hinted at the complex financial maneuvers undertaken by distressed or large firms to manage their tax burdens.

Conversely, the leverage (LEV) and sales growth (SGR) variables failed to show statistical significance, indicating that these factors might not substantially determine the ETR for the firms in this sample. The insignificance of LEV and SGR suggested that debt levels and sales growth did not have a consistent impact on tax rates across the sampled firms. However, this did not entirely dismiss their potential influence in different contexts or samples, highlighting the need for further research to explore these variables under varying conditions and in different industries.

The fixed effects model accounted for approximately 41.2% of the variation in the effective tax rate, as indicated by the adjusted R-squared value. Although this left a substantial portion of the variation unexplained, it still provided meaningful insights into some critical influencing factors. The model's ability

to explain nearly half of the variation in ETR emphasized the importance of FD and FSZ in understanding tax behavior in the Malaysian technology sector. The remaining unexplained variance suggested that other unobserved factors or variables might have also played a significant role in determining ETR, warranting further investigation.

Table 5: Fixed effect model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.383373	0.086519	4.431075	0.0000
FDR	-0.070527	0.034777	-2.027959	0.0447**
LEV	-0.195671	0.289727	-0.675365	0.5007
SGR	-0.039650	0.042858	-0.925147	0.3567
FSZ	-7.55E-08	3.35E-08	-2.255941	0.0258**
Adjusted R-squared	0.412600	F-statistic		4.629154
Durbin-Watson stat	2.146215	Prob(F-statistic)		0.000000

Notes: \*\* indicates statistically significant at the 5% significance level

The Durbin-Watson statistic value of 2.146 indicated no significant autocorrelation problem, affirming the reliability of the regression results. Autocorrelation could distort the validity of the model's findings, but the Durbin-Watson statistic close to the ideal value of 2 indicated that the residuals were relatively free from serial correlation. This enhanced confidence in the regression results and the robustness of the identified relationships between the variables and the ETR.

The robust analysis carried out on the sample of Malaysian technology firms had surfaced intriguing patterns in their tax behavior, especially concerning financial distress and firm size variables. The study revealed a significant negative relationship between these two variables and the ETR, suggesting that firms under FD and larger firms had a higher tendency towards aggressive tax planning or even corporate tax fraud. FD showed a negative coefficient, indicating that firms facing higher levels of distress tended to report lower ETR. This could be attributed to these firms' attempts to protect their financial position by minimizing tax liabilities and potentially employing aggressive tax strategies that border on fraud. This highlighted the need for more stringent regulatory scrutiny and enforcement for firms exhibiting signs of financial distress to deter potential tax fraud.

Similarly, the FSZ also displayed a negative association with the effective tax rate, implying that larger firms were more likely to have lower effective tax rates. One possible explanation for this could be the availability of more sophisticated tax planning strategies and resources to larger firms, which might allow them to reduce their tax liabilities more effectively, sometimes even crossing into fraudulent practices. This finding underlines the importance of maintaining transparency and stringent tax auditing processes for larger firms to ensure adherence to tax regulations and prevent fraudulent behavior. Therefore, the analysis

sheds critical light on the potential propensity towards corporate tax fraud among technology firms in Malaysia, particularly under conditions of financial distress and larger firm size. These insights call for tailored regulatory responses and vigilant oversight to curb the tendency of corporate tax fraud and safeguard the integrity of the tax system.

## **5. DISCUSSION**

This study dived into the significant patterns of corporate tax fraud in Malaysia's technology companies, situating these findings within a broader context. Corporate tax behavior is complex, shaped by many internal and external factors. Grasping these nuances is vital for crafting effective strategies to combat tax fraud and bolster regulatory frameworks. The Malaysian tech sector is particularly dynamic, with firms rapidly evolving in size, scope, and operations. This rapid growth brings numerous tax-related challenges that need to be deeply understood to create robust policies. The findings of this study shed light on how financial distress and firm size impact tax behaviors, revealing patterns that might otherwise remain hidden.

One of the standout findings is the significant inverse correlation between financial distress (FD) and the effective tax rate (ETR). This suggests that companies facing financial difficulties are more likely to engage in aggressive tax planning or even fraudulent activities to ease their fiscal pressures. This aligns with some previous research but contradicts other studies that argued that financially troubled firms are less likely to commit fraud due to increased scrutiny from creditors and the threat of bankruptcy. The discrepancy in these findings could be due to the unique characteristics of the tech sector or specific tax regulations and enforcement in Malaysia. This highlights the need for more focused research to explore these dynamics further. The distinct operational models and financial pressures in the tech sector might create unique conditions that encourage tax avoidance behaviors not seen in other industries. The Malaysian technology sector is characterised by rapid innovation and high growth potential. Companies often invest heavily in research and development (R&D) and technological infrastructure. However, this growth usually associated at a significant cost, which can lead to financial constraints if revenue growth does not keep pace. To manage cash flow and maintain operations, financially distressed technology companies can employ aggressive tax planning strategies to conserve funds, reduce tax liabilities and support their R&D activities.

In addition, the Malaysian government is actively promoting the growth of the technology sector through various tax incentives that grant tax exemptions to qualified companies in the digital economy. The 12<sup>th</sup> Malaysian Plan promotes the growth of eight key technology-oriented companies and offers higher tax benefits (Razi et al., 2024). This is supported by Wang et al. (2024), where governments often offer tax incentives that specifically target certain industries to attract both domestic and international investors. While these incentives aim to attract foreign investment and encourage the development of the technology sector, they can also create opportunities for financially distressed companies to capitalise on the tax benefits. This unique regulatory environment may contribute to the observed inverse relationship between FD and ETR in the technology sector.

Another significant finding is the inverse correlation between firm size and ETR. It's often expected that larger corporations, given their visibility and extensive operations, would adhere more strictly to tax regulations. However, the results indicated that larger firms might have greater capabilities to implement sophisticated tax planning strategies that reduce their tax liabilities. These strategies could include the use

of advanced tax advisory services, strategic international tax planning, and, in some cases, potentially unlawful practices. This finding calls for a deeper investigation into the methods employed by larger firms to minimize their tax obligations and the effectiveness of current regulatory measures in curbing such practices. The implications are profound, suggesting that larger firms might leverage their resources to exploit gaps in the regulatory framework, undermining the tax base.

The results revealed a diverse array of corporate tax practices within the Malaysian tech sector. Factors like financial distress and firm size significantly influence effective tax rates. However, the complexity of tax behavior means these factors interact in intricate ways, necessitating further research to fully understand the mechanisms of corporate tax fraud. The study underscores the importance of regulators and policymakers in identifying and addressing potential loopholes and challenges in managing aggressive tax planning and fraud. The intricate interactions between various financial and operational factors within firms require a multi-faceted regulatory approach that goes beyond simple tax rate adjustments or policy changes.

Furthermore, the findings emphasize the critical role of regulatory oversight in preventing corporate tax fraud. As tech firms continue to innovate and grow, they may develop increasingly complex tax strategies that are difficult to monitor and regulate. Strengthening regulatory frameworks and enhancing the capabilities of tax authorities to detect and respond to sophisticated tax avoidance schemes is essential. This may involve adopting new technologies and analytical tools and fostering greater collaboration between regulatory bodies and industry stakeholders. Enhanced surveillance and monitoring mechanisms can provide regulators with the insights needed to preemptively address tax avoidance tactics before they become widespread practices within the industry.

Additionally, the study highlights the need for a holistic approach to combating corporate tax fraud. This involves not only improving regulatory measures but also promoting a culture of transparency and ethical behavior within companies. Firms should be encouraged to adopt robust financial management practices and adhere to fair tax payment standards. By doing so, they can contribute to a more equitable business environment and help build public trust in the corporate sector. Initiatives like corporate governance reforms, ethics training programs, and incentives for compliance can play pivotal roles in fostering a culture where tax fraud is not only discouraged but actively opposed by employees at all levels.

The broader implications of these findings suggest that addressing corporate tax fraud requires a concerted effort from both the private and public sectors. Companies need to recognize the long-term benefits of compliance, which include enhanced reputation, investor trust, and sustainable business practices. Regulators, on the other hand, must be equipped with the tools and authority to enforce tax laws effectively. This includes having access to real-time data, the ability to conduct thorough audits, and the imposition of stringent penalties for non-compliance. Collaborative efforts between these entities can lead to the development of a more resilient economic system that discourages fraudulent behaviors and promotes fairness.

Investigating the complexities of corporate tax fraud can lead to the development of more effective strategies to promote compliance and integrity in the global business landscape. Each new insight adds to the collective understanding, enabling policymakers to craft more precise and impactful regulations. Sustained and informed efforts are essential to address the challenge of corporate tax fraud, ensuring that

all firms contribute their fair share to the economy. As the global economy becomes increasingly interconnected, the lessons learned from the Malaysian technology sector can also inform international tax policy, contributing to a more equitable global financial system.

## **6. CONCLUSIONS AND RECOMMENDATIONS**

This study provided a thorough analysis of financial data from 26 technology companies listed on Bursa Malaysia, covering the period from 2016 to 2022. The findings revealed significant determinants that potentially influence the likelihood of engaging in corporate tax fraud. Specifically, the study highlighted the prominent roles of financial distress (FD) and firm size (FSZ) in determining the effective tax rate (ETR), which serves as a crucial indicator of tax behavior. The results indicated that higher levels of financial distress and smaller firm sizes are associated with lower effective tax rates, suggesting an increased propensity for engaging in corporate tax fraud. This relationship underscored the need for more nuanced understanding and monitoring of these factors.

Given these implications, it is crucial to enhance the oversight capabilities of regulatory authorities and auditing bodies, particularly concerning financially distressed firms and smaller entities. The findings from this study should not be viewed merely as academic observations but as actionable insights that can inform regulatory strategies. By implementing thorough audits and enacting targeted legislation to address areas identified as potential fraud hubs, regulators can significantly mitigate illicit tax practices. This proactive approach would help create a more equitable and transparent business environment, promoting fair competition and economic stability.

Moreover, it is essential for companies to adopt robust financial management protocols and adhere strictly to ethical business practices. Implementing strong financial reporting standards and ensuring compliance with fair tax payment regulations can foster a corporate culture characterized by transparency and integrity. Companies that commit to these principles not only enhance their reputation but also contribute to a healthier economic ecosystem. By promoting ethical behavior and accountability, businesses can play a pivotal role in curbing corporate tax fraud and supporting sustainable economic growth.

In light of the study's findings, it is recommended that future research efforts expand the scope to include additional industries and countries. Such an approach would provide a more comprehensive understanding of corporate tax fraud across different contexts and help identify universal patterns and unique industry-specific risks. Exploring alternative factors influencing corporate tax fraud, beyond financial distress and firm size, can also yield valuable insights. Variables such as corporate governance quality, market conditions, and regulatory environments should be considered in future analyses to develop a holistic view of the determinants of tax fraud.

Furthermore, ongoing discourse and research into corporate tax fraud are essential for developing effective prevention and detection strategies. The complexity of tax evasion tactics requires continuous adaptation and refinement of regulatory frameworks. By fostering collaboration between academia, industry, and regulatory bodies, a more robust and dynamic approach to combating tax fraud can be developed. Such collaboration can lead to innovative solutions and best practices that are responsive to the evolving landscape of corporate financial behavior.

Therefore, the goal is to build a resilient business climate grounded in equity and openness. By addressing the root causes of corporate tax fraud and promoting ethical practices, we can create an environment where businesses thrive on a level playing field. This not only benefits individual companies but also strengthens the overall economy, ensuring that resources are allocated fairly and efficiently. As we move forward, it is imperative to maintain a focus on ethical integrity, regulatory vigilance, and comprehensive research to safeguard the integrity of the tax system and foster sustainable economic development.

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