

The Mediation Effects of Financial Distress on the Relationship between Capital Intensity and Return on Assets towards Corporate Tax Avoidance

Siti Nasuha Muhmad ^{*}, Che Ku Hisam Che Ku Kassim and Nur Raihana Mohd Sallem

Universiti Teknologi MARA, Terengganu, Malaysia

ABSTRACT

This paper investigated the relationship of capital intensity (CAPINT) and return on assets (ROA) on corporate tax avoidance (CTA) level among public listed companies. However, prior literature has failed to recognise the role of financial distress (FDR) in influencing the relationship between firm characteristics and CTA. Therefore, this paper enriches the existing literature by providing evidence on the role of FDR as a mediator in exploring the influence of company characteristics on CTA level. A balanced panel data set of 477 firm years-observations for the period from 2010 to 2019 was used. The data was retrieved from ThompsonOne Data Stream database. The statistical results confirmed a significant relationship between CAPINT and ROA with CTA level. This implied that such corporate traits can be used as a red flag to identify aggressive tax planners, who can then be investigated further for potential tax fraud. Moreover, it was also evident that FDR had a considerable effect on the relationship between CAPINT and ROA towards CTA level among the sampled companies. Because prior studies have often focused on the relationship between financial determinants and CTA, there appeared to be a dearth of studies stressing the mediating effects of FDR on the relationship between company characteristics and the extent of CTA.

Keywords: Corporate Tax Avoidance, Capital Intensity, Return on Assets, Financial Distress

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^{*} Corresponding Author: Siti Nasuha Muhmad; Universiti Teknologi MARA, Campus Terengganu, 23000 Dungun, Malaysia; Email: nasuhamuhmad@uitm.edu.my

INTRODUCTION

According to statistics, corporate income tax accounts for roughly 79% of Malaysian revenue (Suffian et al., 2017). In Malaysia, numerous tax incentives have been introduced to help taxpayers. Such incentives allow firms to increase their income after tax by lowering corporate taxes. In addition, the reduction of tax rates also attracts many investors to Malaysia (Razali et al., 2018). Despite this, the issue of CTA by corporations has not been resolved (Kasim & Saad, 2019). Following the implementation of the Self-Assessment System (SAS) regime, companies in Malaysia are more aware of aggressive tax avoidance activities. Under SAS, companies must accurately report and assess their sources of income, estimate their income tax liability, maintain records for audit purposes, and be aware of all other income tax laws, while the tax authority is only involved in post-assessment checking and verification of tax returns. Contrary to the former Official-Assessment System (OAS), where the tax authority transmits the tax return to the companies. With no enforcement mechanism in place, the SAS system is therefore proven to be beneficial in promoting voluntary compliance, which lowers the assessment workload for tax authorities (Hanefah & Ariff, 2002; Isa & Pope, 2011). However, due to changes from the OAS to the SAS in Malaysian tax regulation, non-compliance activities on tax avoidance issues surface (Noor et al., 2010). Companies may use tax avoidance accounting techniques to manipulate certain transactions in order to pay the tax authorities the least amount feasible.

Statistical data from the Ministry of Finance (MoF) shows a significant drop in the government's revenue reserve from 2012 to 2016, with figures of RM139.73 billion, RM134.85 billion, RM115.96 billion, RM95.28 billion, and RM94.48 billion for the relevant years. Alsaadi, (2020) and Wahab et al. (2017) highlighted that the decrease is primarily due to insufficient tax payments by companies and the failure to meet the annual government revenue targets. It can be speculated that the decrease in government revenue reserve may be due to the increase in strategies for CTA activities which were made possible by the initiatives introduced by the tax authorities. When firms engage in aggressive CTA strategies, the government is likely to miss out on the maximum money it could have collected from companies' income tax payments.

The objective of corporate income tax is to increase the country's revenue and provide sources to fund government activities (Bimo et al., 2019). However, firms have different perspectives about tax, as it seems to burden their financial position and reduce their income (Dhamara & Violita, 2018). With such a conflicting perspective, it drives firms' management to engage in non-compliance with tax regulations. CTA is an attempt by firms to reduce tax payable, and it is seen as a strategy in maximising their business income by lowering income tax expenses (Richardson et al. 2015). The extant studies have highlighted various factors that may contribute to CTA (Edwin & Victor, 2019; Higgins et al., 2015; Abdul Wahab et al., 2017). One of the factors is the company's characteristics (Mohanadas et al., 2018). In this study, company characteristics such as CAPINT and ROA created variation in effective tax rate (ETR) across companies.

As suggested by Devi et al. (2018), corporate characteristics play an important role in determining tax aggressiveness. Yet, previous studies (Kim & Im, 2017; Pratama, 2017; Vintila et al., 2018; Muhmad et al., 2020) found inconclusive findings on the relationship between CAPINT, ROA and CTA. For example, Yinka and Uchenna, (2018) found a positive relationship between CAPINT and CTA, while Wahab et al. (2017) suggested a negative relationship. In another study, Lestari and Solikhah, (2019) indicated a significant relationship between ROA and CTA, whereas Dianawati and Agustina, (2020) found an insignificant relationship. Thus, based on the findings above, it is confirmed that there are variations and inconsistencies in the factors that influence CTA. These inconsistencies have created a gap that needs to be filled, and it implies that further empirical investigations are needed to provide convincing evidence that could better explain the CTA. Therefore, this study intended to provide some useful input by investigating the possible association between CAPINT and ROA towards CTA level.

Moreover, the study was also aimed to contribute to the FDR literature by studying the role of FDR on the relationship between companies' characteristics and CTA. Previous research on FDR on companies in developed markets are abundant. Most research on FDR has concentrated on the United States where researchers have identified certain important elements that lead to FDR (Abdullah, 2020).

There is a paucity of research addressing the issue of FDR in Malaysia. Since Malaysia is less developed than the United States and the reasons identified may not be relevant to the companies in Malaysia. Therefore, it is worth exploring any indicators that can identify the possibility of FDR in the company.

On a similar note, the study on FDR is deemed critical as it can lead to bankruptcy, which may adversely affect the economy of the country (Kamaluddin et al., 2019). Most prior studies in Malaysia focus merely on traditional financial ratios, while this study exploited the indirect effects of FDR as a mediator on the relationship between the companies' characteristics and CTA. This study was distinctive because it introduced a framework that incorporates the role of FDR on the relationship between firm characteristics and the level of CTA among companies listed on Bursa Malaysia. As argued by Richardson et al. (2015), FDR increases firms' incentive to avoid paying taxes. Evidence shows that during the financial crisis, where companies were experiencing financial difficulties, they were inclined to engage in CTA practices to reduce corporate tax payments (Dang & Tran, 2021; Campello et al., 2011).

This study sought to specifically provide compelling evidence about this combination since other elements that potentially impact the CTA level in Malaysia must be considered. As research on this issue remains inconclusive, and further work is needed to fill the gap. The objectives of this study were twofold. Firstly, it determined the relationship between company characteristics and CTA amongst public listed companies. CAPINT and ROA have been identified to test the possible association with the income tax expense level in business organisations. This objective provide evidence on the relationship between company characteristics and CTA. Secondly, it intended to examine the mediating effect of FDR in a relationship between company characteristics and corporate tax avoidance. The goal was to examine the indirect effect of FDR on the relationship between the companies' characteristics and CTA. In this study, the research framework also included the effect of FDR on the relationship between companies' characteristics and CTA.

The paper is structured in the following order. The next section presents a discussion on relevant literature on CTA and its influential factors. It is then followed with a theoretical perspective adopted in this paper. Next, a detailed description of the research methodology is presented. Afterwards, the results are tabulated and discussed. A conclusion at the end completes the paper.

LITERATURE REVIEW

Corporate Tax Avoidance

In general, CTA represents companies' efforts to reduce corporate tax burdens to the tax authorities. Hanlon and Heitzman (2010) defined CTA as a strategy undertaken by companies to minimise their tax liabilities. An effective CTA strategy generates tax benefits that lower the present value of companies' tax obligations. Therefore, if two companies have the same pre-tax income but pay different amounts of income tax, a company that pays less tax will be seen as practicing CTA. Previous CTA studies have yielded conflicting results on the relationship between companies' characteristics and CTA (Richardson & Lanis, 2015; Noor et al., 2010; Hseih, 2012; Kassem, 2012; Rashid et al., 2015).

Capital Intensity and Corporate Tax Avoidance

Previous research demonstrated that the corporate tax burden varies depending on the CAPINT (Hazir, 2019). CAPINT is the ratio of a company's total investment in fixed assets to its total assets. It is evident that increasing the tax avoidance level is due to the possibility of reducing companies' tax burden through investment in fixed assets (Sugeng & Zaman, 2020). In Malaysia, companies were provided with the capital allowance provisions for the investment transactions made to the companies' fixed assets. The tax incentives given in the capital allowance for the company asset transaction would encourage the companies to increase their companies' assets to enjoy lower taxable income (Ratnawati & Utomo, 2022). The relationship between CAPINT and CTA has been widely investigated by previous studies, where mixed results were reported. The positive results suggest that large investments in property, plant, and equipment would save money on taxes by qualifying for a capital allowance

deduction (Andhari & Sukartha, 2017; Yinka & Uchenna, 2018; Dwiyantri & Jati, 2019; Muhmad et al., 2020). It implies that the higher the level of CAPINT, the higher the level of CTA and the lower the company's tax burden. On the contrary, Wahab et al. (2017) report a negative relationship between CAPINT and CTA. This finding leads Wahab et al. (2017) to claim that companies with higher CAPINT tend to have lower CTA due to their inability to manage asset-related tax deductions. This finding aligns with Monika and Noviani (2021), who concluded that CAPINT does not influence tax avoidance. They interpreted that investments in fixed assets do not affect a company's propensity to engage in tax avoidance. Taking this reasoning into account, the following research hypothesis was proposed:

H1: Capital intensity positively influences the corporate tax avoidance level among public listed companies on Bursa Malaysia.

Return on Assets and Corporate Tax Avoidance

There is also no uniformity in the relationship between Return on assets (ROA) and CTA. ROA expresses the net income earned by a company as a percentage of the total assets available to be used by the company. ROA is frequently used to measure how efficiently a business is utilising its resources (Husna & Satria, 2019). The higher the ratio, the better the company's ability to generate net income from its assets. Some of the studies suggest that the level of ROA of the company has a negative impact on effective tax rates (ETRs) because the more efficient the company is, the less tax it pays (Yinka & Uchenna, 2018; Lestari & Solikhah, 2019). This is due to the fact that high-income businesses often take advantage by utilising tax incentives and other tax deductions to reduce their corporate tax burden. Jaffar et al. (2021), Akbar and Thamrin (2020), and Moeljono (2020) highlighted that large-scale companies tend to manage their ROA effectively due to the high tax impact. Consequently, these companies are more likely to engage in tax avoidance strategies to mitigate tax risks. Other than that, Alfina et al. (2018) and Fauzan et al. (2019) contend that high-profit companies can improve the efficiency of tax payment obligations through tax avoidance. However, in contrast to other findings, Dianawati and Agustin, (2020) suggest that profit has no influence on CTA. Therefore, the assertion served as the foundation for the following hypothesis:

H2: Return on asset positively influences the corporate tax avoidance level among public listed companies on Bursa Malaysia.

Financial Distress

FDR refers to a company's state in which management must be aware of the potential causes of the company's failure (Mahtani & Garg, 2018). Meanwhile, Platt and Platt (2002) defined FDR as companies that are on the brink of bankruptcy due to high debts and are unable to generate sufficient income and returns to meet the borrowings' obligations. When companies face such problems, it demonstrates that they are unable to satisfy the needs of their investors, resulting in lower company values (Li et al. 2020). Hence, predicting a company's FDR is critical as it allows managers to make early preparations or take measures to avoid bankruptcy in the future (Mselmi et al., 2017). Previous studies have found that financial motives can influence the level of FDR in companies (Habib et al., 2020). Financial motives that comprise CAPINT (Lee et al. 2011; Hsu & Jang, 2008) and ROA (Restianti & Augustina, 2018) have been recognised as having an impact on the FDR position in companies.

Capital Intensity and Financial Distress

Evidence shows that firms' CAPINT has a detrimental impact on FDR. Bachtiar and Handayani (2022) and Jaya and Rahmanto (2022) claimed that a lower level of CAPINT reflects that the company uses its assets efficiently and generates sales using low capital. Therefore, Bachtiar and Handayani (2022) concluded that a lower CAPINT reduces the risk of FDR. Besides, Fredric (2018), for example, utilised the Altman Z-score model to predict the financial failure of 58 Nigerian manufacturing companies from 2010 to 2016, highlighting that companies with high CAPINT are more likely to fail financially. The

negative impact of CAPINT on FDR implies that companies use debt to leverage their capital. However, relying on debt exposes companies to the risk of failure. The results cannot be generalised toward wider industries as different industries have different levels of CAPINT. Moreover, Monika and Noviani (2021) argued that high CAPINT does not necessarily lead to better financial outcomes and may not influence a company's tendency to avoid FDR. The substantial debt burden associated with these investments can strain a company's financial resources, especially if the expected returns do not materialize. In a different setting, Lee et al. (2011) examine the moderating effect of CAPINT on the relationship between financial leverage and FDR and discover that CAPINT can reduce the FDR of companies. By observing 1,648 restaurant companies in the US from 1990 to 2008, Lee et al. (2011) argued that companies with higher capital can save themselves from the threat of failure.

Return on Assets and Financial Distress

In terms of financial performance, companies with stronger financial standing illustrate the level of success of the company in carrying out its operational activities and are less likely to face FDR (Rohmadini et al., 2018). The finding is similar to that found in (Aslamiah et al., 2023) who asserted that ROA has a positive and significant impact on reducing FDR. They argued that companies with high ROA can generate sufficient profits to finance their operations and meet their obligations. The capability to cover operational needs and obligations allows these companies to avoid FDR. However, according to Dirman (2020), there are some companies may make substantial profits but struggle to manage their funds effectively, leading to FDR. Geng et al. (2015) investigated the prediction of FDR in China using 22 different financial indicators and discovered that when companies' profits are low, they are more likely to experience FDR. They also revealed that profitability is a significant indicator for FDR, as lower profits reflect a company's inability to convert the income into profits. In another setting, Kazemian et al. (2017) examined the determinants of companies' FDR using financial indicators among 814 listed companies on Bursa Malaysia from 2010 to 2014 and prove that company performance, as measured by Tobin's Q and net profit margin, was negatively related to FDR. In addition, financial leverage was found to be positively related to FDR implying that higher profits and income can reduce the risk of failure.

Financial Distress and Corporate Tax Avoidance

One of the factors that drives CTA practices is the decline in the company's financial condition (Salehi et al., 2020). Since the global economy has its ups and downs, the situation of economic actors will not always be favourable. Therefore, when a company faces financial difficulties and the possibility of bankruptcy, it often employs CTA strategies to lower its corporate tax burden (Dhamara & Violita, 2018). This was supported by Saputra et al. (2017) and Dang and Tran, (2021), who argued that in the event of a financial crisis, companies try to manage their tax reporting strategies effectively in order to reduce their corporate tax burden. They also claimed that the greater the financial distress a company faces, the more likely it is to engage in tax avoidance. Meanwhile, Sadjiarto et al. (2020) asserted that FDR had a positive effect on CTA, suggesting that managers are likely to engage in aggressive tax avoidance in order to lower their tax obligations and reduce the risk of bankruptcy.

Edwards et al. (2016) provided evidence that the position of FDR in companies can potentially drive them to minimise the current tax payable in order to save money. They argued that financially distressed businesses are more tax sensitive than other companies. This means that companies facing FDR are highly responsive to potential tax incentives to reduce their tax burden. Contrary to earlier studies, Hamid et al. (2018) concluded that the effect of tax incentives on investment may vary depending on the firm's cash flow and if it has financial constraints, the company would be less receptive to tax incentives. Ariff et al. (2023) also highlighted that cultural and regulatory differences significantly influence how firms in financial distress approach tax avoidance. For instance, firms in countries with more lenient tax regulations were found to engage in more aggressive tax avoidance compared to those in countries with strict tax enforcement.

Additionally, a positive relationship between FDR and CTA was evident during the global financial crisis (Richardson et al., 2015; Tilehnoei et al., 2018). This is because companies must retain cash on hand in order to pay their current tax debt. According to Tilehnoei et al. (2018), during the global financial crisis, the management of financially distressed companies was forced to employ tax avoidance strategies that were rarely practiced prior to the crisis. On a similar note, Habib and Jiang (2015) also discovered that during the global financial crisis, financially distressed companies tend to manipulate earnings to display lower earnings. This will lower income tax expenses and thereby boost the company's cash flow.

However, there are contradictory evidence in the literature. Cita and Supadmi (2019), for example, discovered that FDR had a negative effect on CTA. Meanwhile, Nugroho and Firmansyah (2017) revealed that FDR has no significant effect on CTA. Given the lack of solid evidence in the literature, this study examined the mediating effects of FDR on the relationships between financial motives and CTA levels in companies. Therefore, the foregoing discussion leads to the following hypothesis:

H3: There is a significant influence of financial distress on the relationship between capital intensity and return on assets towards corporate tax avoidance level.

THEORETICAL PERSPECTIVE - AGENCY THEORY

The Agency Theory describes the relationship between business owners as principals and managers as agents (Jensen & Meckling, 1976). An agency relationship is a contract between a principal and an agent that requires the principal to delegate decision-making authority to the agent in order for him to complete the work at hand. However, agency conflicts arise as a result of disparities in interests between agents and principals, each of which has a vested interest in getting their own gains. The principal forces the agent to carry out his instructions by offering a large sum of money, (Lee et al., 2015). Therefore, in order to get the remuneration promised by the owner, managers therefore look for ways to enhance the performance and value of the business. One of the elements that must be evaluated in this case is net income, which is a measure of the company's performance. This is because the owners and investors believe that the company's success can be measured by an increase in earnings. Therefore, one of the manager's efforts to increase earnings is to reduce the expenses paid by the companies to the Inland Revenue Board (IRB).

Managers often plan the amount of tax that will be submitted to the IRB, in order to lower the tax burdens of the company (Richardson & Lanis, 2013; Desai & Dharmapala 2015; Gaaya et al., 2017). However, managers of the companies are required to follow the tax regulations imposed by the tax authority in order to lessen the burden of corporate taxes. As a result of the capital market's tax regulation systems, shareholders' interest in the agency theory towards the business income level would be constrained. Prior studies claimed that the practice of CTA is a management approach for decreasing the amount of tax liability that the company must pay to the state by exploiting existing tax regulations (Kasim & Saad, 2019; Noor et al., 2010; Dyreng et al., 2010; Lim, 2011).

This study has provided evidence supporting the agency theory, showing that management engages in tax avoidance to reduce the business tax burden. Managers are mandated by the owner to engage in legal tax avoidance, so that in the end the amount of net profit paid into taxes is minimised. Managers engage in tax avoidance by utilising government-provided tax benefits. Therefore, firms often acquire more assets to utilise capital allowances and decrease corporate tax payments. Companies with high ROA often utilise aggressive CTA strategies to reduce their tax obligations. Moreover, enterprises facing FDR will raise their capital investment level to reduce taxable income by taking advantage of tax incentives available at that time. This finding aligns with previous research conducted by Jaffar et al. (2021), Muhmad et al. (2020) and Rashid et al. (2015). Therefore, the agency theory demonstrates the divergent underlying interests of managers and business owners in pursuing their individual objectives. Figure 1 summarises the research framework of the study.

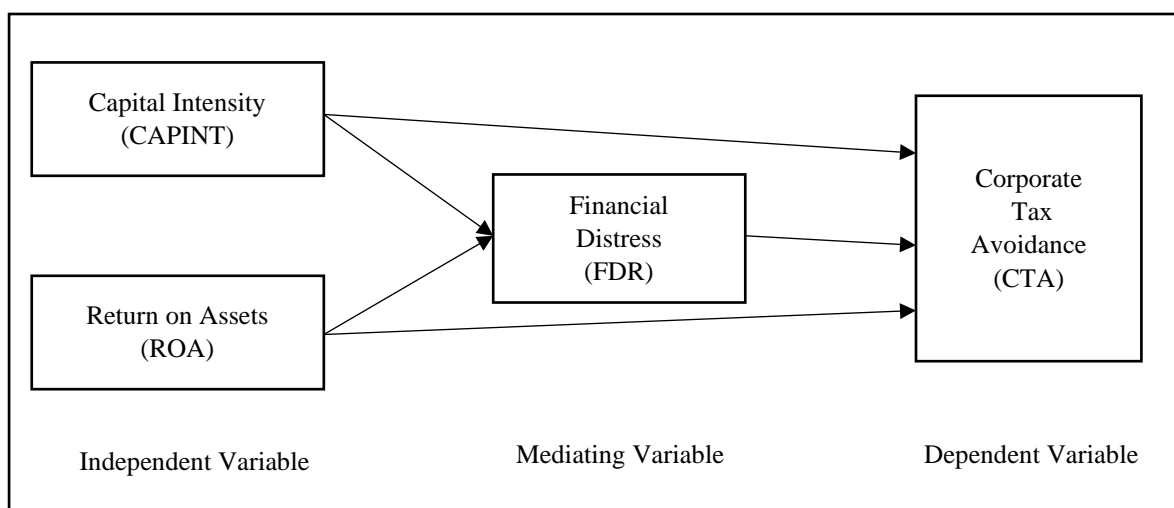


Figure 1: Research Framework for Corporate Tax Avoidance

RESEARCH METHODOLOGY

Sample Selection

The sample was drawn from a list of companies supplied by the ThompsonOne Data Stream database as of April 2020, the base year for data collection in this study. There were about 764 listed companies on the first and second boards of Bursa Malaysia. The data was gathered based on the respective sectors as specified by Bursa Malaysia industry classification, in which firms were categorised according to their main activities. The data sample consisted of firms from nine sectors namely trading and services, consumer product, technology, hotel, industrial product, properties, plantation, construction, and infrastructure industries. Furthermore, this study made use of secondary data which comprised samples from a balanced panel data of 477 public listed companies on Bursa Malaysia from 2010 to 2019. Table 1 shows a sampling of the industries traded on Bursa Malaysia. When both years were considered, the total number of firms was 4,770.

The sampling technique employed was purposive sampling, in which samples were chosen based on predetermined criteria. The purpose of using the purposive sampling technique was to produce a representative sample that met the predetermined criteria. The sample selection criteria are exhibited in Table 2. Besides, as according to Dragomir (2010), the reason to categorise the selected samples into certain types of industries was to avoid taxation, which was potentially sensitive among the selected industries. In addition, Samaniego (2010) also asserts that tax regulation incentives differ by industry in capital market transactions. Therefore, multiple investigations were employed in accordance with the selected industries in order to eliminate the bias effects produced by the selected industries. However, due to the many rules imposed on the financial institution industry, this industry was excluded from the present study (Noor et al., 2010).

Table 1: Composition of Sampled Industries in Bursa Malaysia

Industries	No of firms
Industrial Product	134
Trading and Services	96
Consumer Products	79
Properties	74
Plantation	31
Construction	34
Technology	17
Hotel	4
Infrastructure	8
Total	477

Previous study, for example Noor et al. (2010), indicated that ETRs fluctuated across years. Therefore, to counteract this impact, the firm’s data from numerous years were used. Additionally, the act of evaluating more than one year’s data has enabled the analysis of changes in income taxes when additional income was earned (Wahab & Holland, 2012). Furthermore, adopting sampling periods spanning many years would increase the validity of the evidence in research activities (Iacobucci, 2010).

The years 2010 to 2019 were selected since that is when Malaysia imposed a new tax regime on the self-assessment system, which went into force in 2001. Since 2001, companies in Malaysia have been compelled to abide by the self-assessment system from the official assessment system for their tax transactions to the tax authorities. Furthermore, there were no significant changes in the corporate statutory tax rate (STR) from 2010 to 2019. In Malaysia, the average STR from 2010 to 2019 was 24.5%, with 25% in 2010 and 24% in 2019. Hence, any changes in a firm’s effective tax rate over this period should be attributed to tax incentives and CTA activities (Rashid et al. 2015). Therefore, this justified the selection of the investigation period spanning ten-year accounting periods from 2010 to 2019.

Balanced Panel Data

The balanced panel data comprised 477 firms with 4,770 firm year observations from 2010 to 2019, representing 62% of total market capitalisation. Table 2 summarises the sample selection procedures.

Table 2: Sample Selection Procedures

Sector	Data Stream Extracted on March 2020	Firms With Missing Data	Firms With Net Operating Losses	Balanced Panel No. of Firms (%) 2010-2019	Balanced Panel Firm-Years 2010-2019
Industrial Product	294	50	110	134(28%)	1340
Trading and services	231	60	75	96(20%)	960
Consumer Products	95	55	40	79(17%)	790
Properties	76	30	46	74(16%)	740
Plantation	23	6	17	31(6%)	310
Construction	32	15	17	34(7%)	340
Technology	5	0	5	17(4%)	170
Hotel	4	0	4	4(8%)	40
Infrastructure	4	4	0	8(2%)	80
Total	764	220	314	477	4770
Percentage	100%	29%	41%	62%	

The Measurement of Independent Variables

Since CTA is closely related to tax accounting transactions, the study examined the relationships between various types of selected tax accounting information in the business transaction activities. Therefore, the companies’ CAPINT and ROA which are connected to CTA, were assessed. The CAPINT ratio measures the proportion of a company’s investment activity that is in the form of fixed assets (Judzik & Sala, 2015). Companies having a lot of fixed assets will benefit from the capital allowance deduction since it will decrease their effective tax rate level. The CAPINT formula is as follows:

$$\text{Capital Intensity} = \frac{\text{Fixed Assets}}{\text{Total Assets}} \tag{1}$$

ROA, on the other hand, is a measure of a company's ability to generate profits and is calculated as the ratio of net income to total assets at the end of the period (Kurniasih et al., 2013). Net income was obtained from the company's income statement and was the profit after deducting taxes. According to Kimsen et al. (2019), profitability increases when net income increases, and ROA increases. The ROA formula was as follows:

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}} \quad (2)$$

The Measurement of Mediating Variable

The study examined the indirect impact of FDR of the companies on the application of CAPINT and ROA to the CTA level. Therefore, a well-known measuring technique was employed to evaluate the FDR position in business transaction activities (Altman, 1968). FDR was calculated by the application of the Z-score formula. According to Ezazi et al. (2011), the Z score formula is used to assess the companies' financial health. If the Z score is above 2.99, the company is considered to be in the safe zone (not experiencing distress), if the Z score is between 1.81 and 2.99, the company is in the grey zone, while if the Z-score is less than 1.81, the company is experiencing distress. FDR's formula is as follows: $Z = 1.2x(1) + 1.3x(2) + 3.3x(3) + 0.6x(4) + 1.0x(5)$.

The Measurement of Dependent Variable

ETR was used as a proxy for CTA because it gives a basic overview of tax performance that reflects how much a company pays in taxes in relation to its gross profit (Harris & Feeny, 2000). Moreover, ETR has long been utilised by policy makers and interest groups in tax reform debates, especially when discussing corporate tax provisions (Gupta & Newberry, 1997). The ETR is of concern as it summarises the cumulative effects of various tax incentives. Corporate ETR has been used as a tool to gauge the extent of neutrality of the tax system and the characteristics of companies with higher and lower tax burdens since there is evidence that it fluctuates among companies and over time.

Generally, there are three primary models for measuring the ETR which are accrual-based ETR, current-based ETR, and cash-based ETR. This study employs the accrual-based ETR model, as it accurately reflects the actual income tax expenses paid by companies on their generated business income (Martinez & Ramalho, 2014). Accordingly, the accrual-based ETR for the selected companies was estimated using two components: corporate income tax expenses and pre-tax income from business transactions. The effective tax rate is calculated as follows:

$$\text{Effective Tax Rate} = \frac{\text{Income tax}}{\text{Pre} - \text{Income Tax}} \quad (3)$$

RESULT AND DISCUSSION

As part of the diagnostic analysis, this study examined descriptive statistics to provide a summary of the data to be analysed and an overview of each research variable (Ghozali, 2010). Table 3 displays descriptive statistics for the variables tested in order to offer an overview of the data. The data from 2010 to 2019 comprised the mean, standard deviation, median, minimum, and maximum of independent variables.

Table 3: Descriptive Statistics

Variables	Observation	Mean	Median	Max	Min	Standard Deviation	Skewness	Kurtosis
Independent Variables:								
CAPINT	4770	0.529	0.537	0.967	0.011	0.236	0.250	2.61
ROA	4770	0.162	0.056	1.005	0.010	0.235	-0.569	3.45
Mediating Variable:								
FDR	4770	1.564	1.542	8.420	2.644	1.325	0.102	2.40
Dependent Variable:								
ETR	4770	0.145	0.134	0.210	0.120	0.329	0.29	3.52

Notes: Abbreviations are defined as follows: CAPINT= Capital Intensity, ROA=Return on Asset, FDR= Financial Distress, ETR=Effective Tax Rate

As indicated in Table 3 the average value for CAPINT was 0.529. This showed that more than 50% of public listed companies invested their capital in fixed assets. As a result, it gave an impact on the amount of capital allowance that the company can claim which ultimately reduced the amount of tax paid to the tax authority. Based on studies from 2000 to 2004, Noor et al. (2010) recorded the CAPINT level of Malaysian enterprises to be 0.43. On the other hand, the mean value of ROA was 0.162. It can be interpreted that the average company can generate a net profit of 16% out of its total assets owned. In comparison, a study conducted from 2000 to 2004 by Noor et al. (2010) produced an ROA score of 0.08. Meanwhile, Abidin et al. (2017) discovered that the ROA in Malaysia from 2012 to 2016 was 0.035 (Abidin et al., 2017). Therefore, the average ROA value in this study was higher than those of Noor et al. (2010) and Abidin et al. (2017). FDR had a mean of 1.564 with a minimum value of 2.644 and maximum value of 8.420. Lastly, ETR had an overall average value of 0.145, with the minimum and maximum values of 0.120 and 0.210, respectively. The average ETR value of 0.145 indicated less than one quarter of the companies' pre-tax earnings. This ratio showed that these companies were likely to engage in tax avoidance. The average score with this range was in line with Rashid et al. (2015) who found that the average value of ETR from 2001 to 2012 was 0.146.

Table 4: Descriptive Analyses of Corporate Tax Avoidance for 2010-2019

Industries	N	Firm-Years	ETR Mean %
Technology	17	170	9.75
Consumer products	79	790	11.29
Hotel	4	40	11.32
Industrial products	134	1340	12.21
Construction	34	340	12.64
Infrastructure	8	80	13.25
Properties	74	740	13.79
Plantation	31	310	16.21
Trading and Services	96	960	21.02
All samples	477	4770	13.5

Table 4 depicts the descriptive analyses of CTA among nine selected Malaysian capital market industries from 2010 to 2019. According to the results, corporate ETR varied across sectors, and it fell below the statutory tax rate. The mean for the statutory tax rate was 25.94%. The findings suggested that public listed companies appeared to be able to avoid income taxes using tax incentive programs from 2010 to 2019. It is important to note that the CTA level measured in this paper does not imply that companies are engaged in aggressive CTA activities. There are numerous provisions in the tax laws that allow companies to plan their taxes. Therefore, substantial discrepancies between the STR and corporate ETR indicated that companies have benefited from high levels of tax incentives, whilst minor differences indicated that companies have benefited from low levels of tax incentives through their corporate tax avoidance strategies. As previously stated, changes in the STR and government tax incentives impact company ETR (Rashid et al., 2015). With a fixed STR, the variations in ETR were

mainly due to tax incentives utilised by companies in their CTA strategies. Therefore, this study found that there were significant disparities in the STR and ETR between companies from nine sectors, indicating that the degree of tax incentives provided by the government varied significantly among sectors.

Next, the discussion of the findings continues on the variability of corporate ETR. This was done by investigating CAPINT and ROA with CTA among companies. Three regression analysis methods were used: pooled ordinary least square regression, fixed effect regression, and random effect regression. These analyses permit further examination to estimate the significant influence of the importance of CAPINT and ROA on the CTA level. The equation of the analysis used was as follows: $ETR = \beta_1CAPINT + \beta_2ROA + \varepsilon$.

Table 5: Results of Summary of the Best Specification Methods

Independent variables	Pooled OLS	Fixed effects	Random effects
CAPINT	***0.000 [-0.048]	***0.000 [-0.015]	***0.002 [0.025]
ROA	***0.000 [-0.002]	***0.000 [-0.002]	***0.004 [0.002]
ETR	***0.000 [0.866]	***0.000 [0.941]	***0.000 [-0.977]
Hausman Test		0.0015 (33.20) ***	
BP-LM Test			0.0122 (5.02) ***
R ²	0.759	0.836	0.518

Notes: *** Significant at 1%-level; ** Significant at 5%-level; and * Significant at 10%-level Variable Definitions: ETR is the accrual-based tax rates, β_0 is the intercept, $\beta_1CAPINT$ is the Capital Intensity, β_2ROA is the Return on Asset, β_3ETR is the one period lag of dependent variable (as remedies for serial correlation) and ε is the error term. Each of the variable components is winsorised to 5% and 95% percentile to remove the outliers.

As shown in Table 5, the Hausman Tests were used to choose between the fixed effects and random effects model. The Hausman Test indicated that p was less than 5%, thus the choice between random effect and fixed effect must reject the random effect model. Therefore, the fixed effect model was selected as the best model. In terms of the Breusch Pagan Lagrange Multiplier (LM) Test, the p value had a significant meaning that showed the appropriateness of the random effect model, but the value of R^2 shows that fixed effect was better than random effect where the value of R^2 of fixed effect was higher than random effect model ($0.836 > 0.518$). Therefore, the fixed effect model was considered to be the best choice for this analysis.

The Relationship between Capital Intensity and Corporate Tax Avoidance

Table 6 shows the results of the relationship between CAPINT and the level of CTA among companies in the capital market. Companies with high CAPINT levels led to high levels of CTA, which lowered the value of ETR. Therefore, hypothesis 1 was supported. This is because Malaysian public listed companies have utilised capital allowances to lower their ETR levels as part of their CTA schemes. The significant relationship between CAPINT and CTA level was consistent with prior study findings, including those of Mgammal (2015) and Rashid et al. (2015). CAPINT was shown to have a significant relationship with CTA level among Malaysian public listed companies as they usually benefitted from capital allowance provisions provided by the government from capital investment in business organisations.

The Relationship between Return on Assets and Corporate Tax Avoidance

The importance of examining ROA has also been considered important in determining the level of CTA in organisations. As shown in Table 6 there was a significant and negative relationship between ROA and ETR with a coefficient value of -0.002. This demonstrated how highly profitable companies exploit tax incentives and other tax provisions available at that time to lower their ETR levels as part of CTA strategies. Therefore, hypothesis 2 was also supported. The results also showed that companies with

higher pre-tax income had greater incentives and resources to engage in CTA strategies. These findings supported the Agency Theory which asserted that high-performing companies had lower ETR levels because they engage in CTA strategies. This is supported by Kraft (2014) and Irianto (2017) results, which both discovered a significant relationship between ROA and CTA in foreign capital market transactions. Therefore, it is possible to deduce that ROA is negatively related to the actual tax paid by companies in business transaction activities.

The Mediation Effects of Financial Distress

The existence of FDR has forced companies to develop the right strategies to minimise the negative impact on them. Therefore, one of the strategies employed by the companies is to take advantage of the tax incentives available at that time in order to lower their corporate expenses. Theoretically, the presence of FDR often indicates that the company is experiencing an unfavourable financial situation. Therefore, companies strive to cut their business operating expenses in order to lessen the negative impact of FDR. These goals can be achieved by making effective use of tax incentives to lower corporate tax expenses. To assess these impacts, the study employed the bootstrapping method's step regression. Bootstrapping is a method for sampling with replacement technique, whereby one instructs the algorithm to take a sample of size from an existing dataset. The number of re-samplings could be between 500 to 1000 times (Awang et al. 2015). For each sample, the algorithm would compute the mean and standard error. The algorithm develops sampling distribution for the estimates based on the resampling procedure. In addition, the total effect, direct effect, and indirect effect between constructs was estimated using the sampling distribution. Finally, the 95% confidence interval values for total effect, direct effect, and indirect effect will be tabulated. The algorithm would tabulate the lower and upper limit, as well as the two-tailed significant values for the effects. The bootstrapping results for mediating effect of FDR on the relationship between CAPINT and ROA with CTA are shown in Table 6.

Table 6: Bootstrapping Results of FDR

Path	Construct	Standardized Estimate	P-Value	Bias corrected method 95% CI	
				Lower	Upper
c	CAPINT →CTA	0.353	0.000 0.010	.18	.25
	ROA →CTA	0.191		.01	.32
a	CAPINT→FDR	0.102	0.000	.13	.24
	ROA→FDR	0.001	0.001	.07	.31
b	FDR→CTA	0.190	0.000	.03	.30
c'	CAPINT→CTA	0.134	0.000 0.000	.00	.30
	ROA→CTA	0.023		.03	.47

Based on the results presented in Table 6, the indirect effect (path ab) was significant ($p > 0.05$), and the direct effect (path c') was also significant ($p < 0.05$). The results showed partial mediation since direct effect was still significant after the mediator variable enters the model. It can be concluded that FDR had a significant influence on the relationship between CAPINT and ROA towards CTA among public listed companies on Bursa Malaysia. Hence, hypothesis 3 was also supported.

In conclusion, this paper has identified that CAPINT had a positive influence on the level of CTA among Malaysian public listed companies. This connection stemmed from the ability of companies to claim capital allowances for business tax purposes. It further indicated that businesses that claim capital allowances for investment transactions on their assets are able to enjoy low ETR values. Additionally, a positive relationship of ROA and CTA suggested that highly profitable companies often participate in CTA to reduce their ETRs through tax incentives and other tax provisions. Furthermore, evidence also suggested that businesses with higher pre-tax income have more resources and incentives to engage in CTA through tax relief and allowances. The fact that FDR had a significant influence on the

relationship between CAPINT and ROA in response to changes in the CTA indicated that an increase in the level of FDR would have a significant impact on the level of ETR. Hence, in order to reduce the negative impact of FDR, companies usually resort to engaging in CTA strategies.

This study also revealed that the Malaysian corporate tax system offers significant tax incentives to firms, leading them to pursue aggressive tax evasion strategies. Furthermore, the variation in ETR among sectors indicated that the tax advantages only favoured enterprises in certain industries. Hence, the corporate tax system lacks impartiality. The findings could offer recommendations to tax authorities for conducting tax audits and investigations to uncover illicit tax evasion practices.

Limitations and Recommendations for Future Research

The study, however, has an inherent limitation. The existence of changes in the tax regulation system in capital market transactions was ignored. It is indeed crucial to note that the ignorance of the changes in the tax regulation system is due to the primary goal of the paper, which is to reveal the evidence of the connections between company characteristics and the changes in the CTA level in the selected companies. Therefore, this constraint is believed to have permitted explicit discussions on the potential impact of these accounting strategies on the relevant accounting transactions of the listed companies.

In terms of future research, an investigation of CTA could be conducted on specific groups of companies. The paper may be extended to look into how aggressively the selected companies avoid corporate taxes. Since this study discovered that the technology industry is more prevalent in CTA, thus future research should examine the CTA strategies undertaken by the technology industry. It is believed that a thorough investigation of the relationships between CTA aggressiveness and their impacts on changes in CTA level may provide better insights for those who are interested. Furthermore, since this study employed accrual-based ETR as a measurement for ETR, future research should explore alternative measurement of ETR, such as current-based ETR and cash-based ETR. In addition, as the paper primarily focused on the local Malaysian capital market transactions, it would be more fascinating if the investigation is carried out to include other countries in different economic regions. The evidence gathered from multiple countries is typically utilised as a global benchmark in establishing the relationship between company characteristics and their impacts on CTA in companies.

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