Corporate Tax Burden and Financial Attributes of Fraud Firms and Non-Fraud Firms

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Abstract The goal of this study was to examine corporate tax burdens and the financial attributes of fraud firms (FF) and non-fraud firms (NFF) in Malaysia. This study used the company's effective tax rate (ETR) to determine the level of corporate tax burden. The sample of fraud firms was obtained from the Enforcement Release reported by the Securities Commissions focusing on criminal prosecutions from the year 2001 to 2010. The fraud firms were then matched with the non-fraud firms on the basis of size, time period and industry. The investigation period of this study covered a period of four years, i.e., a fraud year and the three years prior to the companies being prosecuted for fraud. Using a total of 264 firm-years from 33 fraud firms and 33 non-fraud firms, this study examined the level of corporate ETR, the variation of corporate ETR from Statutory Tax Rate (STR), and the association between companies' financial attributes and their ETR. Five financial attributes were examined; firm size, leverage, return on assets, capital intensity and inventory intensity. The statistical results revealed that both the mean ETR for fraud firms (50.14%) and non-fraud firms (36.07%) were higher than the mean STR (27.67%) imposed by the government during the period under study. The findings indicate that fraud firms paid higher tax expense than the non-fraud firms. Further, the findings also indicate that return on assets and capital intensity were significantly associated with the variability of the corporate ETR. The study has provided empirical evidence that both fraud firms and non-fraud firms paid higher effective tax rate than the statutory tax rate. Thus, the findings imply that the sample fraud firms were not tax-motivated. Hence, the study has contributed to the tax literature on the financial attributes of fraud firms which could

assist relevant authorities, specifically in selecting cases for the tax audit and investigation.

Keywords Effective tax rate; fraud firms; non-fraud firms; statutory tax rate.

1   Introduction

There is growing global concern of the increasing numbers of financial criminology or financial frauds being reported among the public listed companies. Since the collapse of Enron and Arthur & Andersen, more cases have been reported. Like other developed and developing countries, Malaysia is no exception as can be seen from the number of corporate scandals which have been highlighted in the media (Ahmad, Norlela & Siti, 2011). Examples of fraud cases highlighted in the media include the economic scandal in the year 2006 involving Megan Media Berhad, which reported false revenue amounting to RM1 billion in its financial statement and another case involving GP Ocean Berhad, which reported RM25.7 million of fictitious sales for its shares to be listed on the Bursa Malaysia.

The increase of corporate fraud in Malaysia has attracted the interest ofresearchers and motivated them to study this issue further. Raziah, Jamal, Murray and Norhayati (2010) for instance, conducted an analysis on fraud cases reported by Malaysian Securities Commissions from 2002 to 2007. Recent statistics on economic crime reported that corporate fraud is one of the most problematic issues for businesses around the world (Raziah et al., 2010). All these corporate scandals have disappointed not only the shareholders but also other stakeholders as a whole and has affected the business environment in Malaysia.

When discussing the issues of financial statement fraud and tax evasion, the element of tax planning activities should also be considered as most companies tend to engage in tax planning activities to reduce their tax liabilities in order to maximize shareholders' return on investment. Hence, this study examined the corporate tax burden of fraud and non-fraud firms (the proxy by the corporate effective tax rate or ETR). The corporate effective tax rate is defined as the actual tax paid divided by pre-tax income. The corporate ETR has been used as a proxy in previous studies to examine the tax planning among companies. Rohaya, Nor'Azam and

Bardai (2008) in their study used corporate ETR as a proxy of tax planning. They found the variability of ETR of companies within and across ten sectors for 3432 firm-years for the period of 2000 to 2004. Additionally, Rohaya, Syazwani and Nor'Azam (2010) revealed that average ETRs for Malaysian listed companies during the self-tax assessment system (effective from the year of assessment 2002) were lower than during the official tax assessment system.

At the same time, the increase in reported cases of corporate fraud globally has enhanced the awareness of the business societies at large. Spathis (2002) had also reported the increasing trend in false financial statements over the last few years. Furthermore, the Securities Commission of Malaysia had also disclosed the seriousness of corporate frauds in Malaysia (Raziah et al., 2010). They found that over the last six years, fraud cases involving market manipulation and/or illegal share trading were the most common fraud cases reported. In addition, a survey conducted by KPMG (2009) found 78% of the respondents anticipated that financial statement fraud would rise. Hence, these findings suggested that the upward trend of fraud cases among companies in Malaysia is expected as a result of the financial crisis.

All the above studies have examined the distribution of ETR among the Malaysian listed companies. However, at present, there is still no study which has examined the association between companies' ETR and fraudulent financial statement of fraud firms. The question to ask is whether these fraud firms are also involved in tax fraud or are they also aggressive tax avoiders? Thus, the objectives of the current study are to examine the tax burdens and financial attributes of fraud firms and non-fraud firms. This paper is organized as follows; the following section is the review of related literatureon the subject matter of this study; the second section explains the research methodology. The third section clarifies the empirical findings and the final section details the conclusions. This study is expected to provide indicators for detection of tax fraud cases, which will be useful for tax authorities in tax audit and investigation programs.

2   Related Literature

2.1   Malaysian Fraud Scandals

Fraud can be defined in various terms to represent the wrongful actions. Elliott and Willingham (1980) defined management fraud as deliberate fraud committed by management that injures investors and creditors through misleading financial statements (cited in Spathis, 2002, p.179). Meanwhile, Wallace (1995) defined fraud as a scheme designed to deceive which can be accomplished with fictitious documents and representations that support fraudulent financial statements (cited in Spathis, 2002, p.179). After the collapse of Enron and Arthur & Andersen, the cases of financial statement fraud reported among the public listed companies have increased all over the world including Malaysia. Even the media has highlighted the fraud cases which occurred in Malaysia and various ways of combating the issues were suggested, but such mismanagement seems to still continue. As an example, Transmile Group Berhad, which was involved in one of the most talked about fraud cases in Malaysia, was reported to overstate its group's revenue figures by 30% in 2006's financial statement and 35% in 2005's financial statement of their consolidated revenues. Another example is Megan Media Holdings Berhad, which was suspected to be involved in fictitious trading of more than RM500 million. Other cases involvingfraudulent actions and misconduct include Tat Sang Holdings and Hospitech Resources Bhd. Both companies submitted false statements in the year 2000 and 2002 respectively. Moreover, Pasaraya Hiong Kong Sdn Bhd and Polymate Holdings were alleged for submission of false statement in the year 2003. The economic scandals continuedto occur in the following years, where in 2006, Welli Multi Corp Bhd and GP Ocean Food Berhad were charged for submitting misleading information. Similarly, MEMS Technology Bhd was also charged for submitting misleading informationin year 2007.

       In 2009, PwC's survey on global economic crime disclosed that 66% of Malaysian companies reported a decline in financial performance, presumably as a result of the economic downturn. The results also indicated that 82% of the respondents faced increased pressure to report better financial performance, and this could have led to more fraudulent activities within their companies. Further, KPMG (2009) revealed that 61% of the respondents believed that fraud would rise in the next two years as more than three quarters of

the respondents believed that financial statement fraud would continue. The survey also found that about 49% of the respondents experienced at least one fraud during the survey period with a total of 714 separate fraud incidences being reported with the value of fraud reported to be RM63.95 million. However, not all respondents disclosed information on the number of fraud incidents or the value of fraud detected. This was expressed by only 15% of the 85 respondents, who claimed that they were victims of fraud, but they were unsure of the number of incidents. Meanwhile, only 53% stated being unsure about the value of financial losses. Therefore, these findings suggest that losses may be far bigger than the disclosed amounts. The regulators had taken action on those companies and perpetrators involved in fraud cases, and the professional accounting bodies had given recommendations to enhance good governance to the business entities. However, the mismanagements, wrongful actions and economic scandals in Malaysia are still being reported by the media, which indicates that the issue of fraud is still transpiring.

2.2 Fraudulent Financial Statement

Financial statement refers to a set of account statements which contains a statement of comprehensive income (i.e. income statement), statement of financial positions (balance sheet), statement of changes in equity, statement of cash flow and also notes to the accounts. The financial statement is an important medium of reporting the financial position of a company to its users, namely the stakeholders. According to Spathis (2002), falsifying financial statements primarily consists of manipulating elements of overstating assets, sales and profits, or understating liabilities, expenses, or losses. Therefore, the occurrence of fraud is when a financial statement contains falsifications where its elements no longer represent the true picture (Spathis, 2002). Mulford and Comiskey (2002) defined fraudulent financial statement as intentional misstatements or omissions of amounts or disclosure in financial statements made to deceive financial statement users. Generally, the accounting practices are not alleged to be fraudulent until theyhave been alleged by the administrative, civil or criminal proceeding either by the Securities and Exchange Commission or a court. Raziah et al. (2010) discussed the importance of financial statements as a source of information used by shareholders, investors and other stakeholders in assessing company's performance; thus, it must be free from bias, material errors, or misstatements. Hence, it is important to examine

the element of tax avoidance strategy among the fraud firms to ensure the interest and welfare of the financial statement users are secured.

Previous literatures have discussed the potentials of financial ratios as indicators in detecting fraudulent financial statement (Pearsons, 1995; Spathis, 2002; and Kaminski, Wetzel and Guan, 2004). Pearsons (1995) reported that financial statement data can be used to identify factors associated with fraudulent financial statement. The study selected a set of samples among fraudulent financial reporting firms and non-fraudulent financial reporting firms and found that financial leverage, capital turnover, asset composition and firm size were significant factors associated with fraudulent financial reporting. Hence, this evidence suggests that accounting data are useful to identify fraudulent financial reporting. Spathis (2002) extended the study in Greece by using a sample of 76 firms including 38 with false financial statement and 38 with non-false financial statements. This study examined ten financial variables as potential predictors of false financial statement and found that several variables (NP/TA, WC/TA, GP/TA, TD/TA and Z-score) may help in detecting false financial statement. Further, Kaminski et al. (2004) conducted a similar study to determine whether the financial ratios of fraudulent companies differed from the non-fraudulent companies. The samples of fraudulent firms were obtained from the SEC's accounting and Auditing Enforcement Release. The fraudulent firms were then matched to the non-fraudulent firms on the basis of size, time period and industry. This study analysed 21 financial ratios for a seven-year period including the fraud year, three preceding years and three subsequent years, (i.e. fraud year and +/-3 years). The study revealed that 16 ratios were significant. However, out of those 16 ratios, only five (AR/TA, COGS/SAL, FA/TA, IE/TL and SAL/AR.) were significant during the period prior to the fraud year, i.e., can be used as the indicator in detecting fraudulent financial statement.

The issues of fraudulent financial reporting and fraud cases not only arise in Europe but have also attracted public attention in Malaysia. Raziah et al. (2010) analysed the fraud cases reported by the Malaysian Securities Commissions for the period of 2002 until 2007. The study revealed the number of corporate fraud reported from 2002 to 2007 which were categorised by nature of the fraud, perpetrators, ethnicity, industry and type of companies. The highest number of cases for criminal prosecutions was reported in 2002 with fifteen cases, while the lowest was four cases in 2004. The offences

can be divided to two categories namely; accounting and auditing related offences and other offences. The accounting and auditing related offences refer to violations of accounting and auditing requirements in terms of reporting and disclosures such as providing or furnishing misleading financial statement and so forth. The other offences on the other hand, refers to the offences committed, which are unrelated to accounting and auditing requirement such as unlicensed trading, unlicensed investment advice, criminal breach of trust, manipulation of market share price and unauthorized and unlicensed fund collection.

2.3 Corporate Tax Planning

Tax planning refers to how taxpayers manage and strategize to reduce their income tax burdens by utilizing the tax incentives given by the government within the boundaries of legal tax law. According to Choong (2007), tax planning is crucial to achieve the objective of eliminating, minimizing, or deferring the income tax to a later year of assessment within the ambit of the law. Generally, a majority of the companies are subjected to pay taxes to the government, specifically to the Inland Revenue Board of Malaysia (IRBM). However, with strategic tax planning, the amount of tax paid could be lowered. Most of the corporate firms will specifically hire professional tax agents so as to fully utilize the tax incentives given by the government in order to reduce their tax burden. The common issue in tax planning strategies, however, is whether it is legal. The answer is if the tax planning is conducted within the boundaries of the tax law, it is legal. But, if it is done beyond that, it may fall under tax avoidance or tax evasion. Therefore, it is crucial for an organization to have an effective tax planning strategy in managing their financial affairs as it would not only secure tax benefits, but also contribute towards significant cost savings and increase the bottom line in their financial statements. But, the tax strategies to minimize or mitigate tax liabilities must be within the boundaries permitted under the tax law. A good tax strategy may increase a company's bottomline by utilizing the tax incentives given by the government. The tax incentives comprise of pioneer status, investment tax allowance, reinvestment allowance, double deduction of expenses, export allowance and exemption duties on export and import.

As an example, the pioneer status tax incentive allows the exemption of income tax up to 100% on a company's statutory

income for a period of five years. Therefore, this pioneer status seems to be more favourable to the companies which are expecting to generate huge profits immediately in the short term. The exemption period may be extended for another five years depending on the type of promoted activities or products. Thus, this exemption might help companies with pioneer status to lower their corporate tax burden. Moreover, companies may also reduce their tax burden by using the elements of group relief. Effective from the year 2006, all locally incorporated resident companies can utilize the group relief subject to the necessary terms and conditions. Under this provision, a company may elect to surrender 70% of its tax losses to related claimant companies. Therefore, this allows the companies to minimize their tax liability by utilizing this provision. Companies may also strategize their tax planning via the current tax loss. Basically, the current year loss exists when the revenue expenses exceed the gross income. However, this current year loss can be deducted from the aggregate income. Any excess amount can then be carried forward to the subsequent years but the offset is restricted to business statutory income and not to other sources of income. Therefore, if the companies combine their related business, hence the total statutory business income can be minimized so that it can lower their corporate tax liability.

There are many other tax planning strategies offered to obtain lower tax liability including the disposal of assets, income shifting, retirement plan and charitable contribution, to name a few. All these allow the companies to manage their tax planning strategies tominimize tax liability through utilizing of available allowances, deductions, exemptions and other incentives to reduce income or capital gains. These measures will later affect the variability of the corporate ETR among the companies and sectors. In tax planning strategies, firms are taking advantage of the different regulations between financial reporting and tax reporting to lower their income tax liabilities. Hence, if the company is unable to provide supporting documents and evidence on its tax planning strategies as required by the tax authority, the case can be considered as tax evasion.

2.4   Corporate Effective Tax Rate

A substantial number of prior research have examined corporate effective tax rate (ETR) as a measure of corporate actual tax burdens (Gupta and Newberry, 1997; Janssen and Buijink, 2000; Richardson and Lanis, 2007; and Rohaya et al., 2008). The corporate tax burden

is the outcome of the tax competition strategy of a particular country
in promoting internal and external investments. The tax competition
strategies include imposing lower statutory tax rate and providing
various tax incentives. However, Rohaya et al. (2008) argued that
provision of tax incentives to particular economic activities will only
benefit certain companies. This can be related to the issues of
neutrality and equality in a country's tax system. Hence, the
corporate ETR is volatile and it fluctuates due to several reasons such
as earnings management, tax planning activities and also changes in
the tax laws. Prior literature revealed the variability of the corporate
ETR, for example, Rohaya et al. (2008) provided evidence of the
variability of ETRs across sectors, which suggests that the tax
incentives only benefited companies within the particular sectors.
Therefore, there is an issue of non-neutrality of the corporate tax
system. Moreover, the findings also explained the impacts of tax
incentives to corporate ETRs and determinants of corporate ETRs.
The empirical evidence revealed that the Malaysian corporate tax
system does indeed provide a substantial amount of tax incentives to
companies, thus, encouraging the companies to engage in aggressive
tax planning.

2.5   ETR and Financial Attributes

There are substantial amount of studies which have examined the
relationship between ETR and its determinants (i.e. financial
attributes) including Gupta and Newberry (1997), Janssen and
Buijink (2000), Richardson and Lanis (2007) and Rohaya et al.
(2008). The financial attributes refer to firm size, capital structure
(leverage), profitability (i.e. return on assets), capital intensity and
inventory intensity. Gupta and Newberry (1997), Richardson and
Lanis (2007) indicated the negative association between ETR and
some companies' characteristics namely; leverage, capital intensity
and inventory intensity. However, the relationship between ETR and
firm size and return on assets has been found to be inconsistent.

Researchers agreed that firms of different sizes experience
differing effective tax burdens. Previous research revealed that there
are two conflicting views about the relationship of firm size to ETR;
(1) political power theory; and (2) Political cost theory. Richardson
and Lanis (2007) agreed that there are two competing views on the
association between ETRs and firm size. However, the empirical
evidence of the relationship between size and ETR are mixed.

Zimmerman (1983) and Rohaya et al. (2008) for example, found a positive association between ETR and firm size, while Porcano (1986), Derashid and Zhang (2003), Richardson and Lanis (2007) and Rego (2003) found a negative association between these variables. As there are various conflicting findings regarding the relationship between ETR and firms size, thus, only a few researchers agreed that the difference is due to the different time period examined (such as Kern and Morris, 1992).Most prior research found that there was a negative relationship between ETR and leverage, which indicates that companies with higher debt experienced lower ETR and vice versa. Research by Gupta and Newberry (1997), Richardson and Lanis (2007) found a negative association between ETR and leverage. Studies conducted by Derashid and Zhang (2003) and Rohaya et al. (2008) on Malaysian firms also revealed that there was a negative association between the ETR and leverage. However, findings on the relationship between ETR and ROA are mixed in prior studies. Gupta and Newberry (1997) found that ETR was systematically related to a company's return on assets. Studies conducted by Derashid and Zhang (2003) and Rohaya et al. (2008) on Malaysian firms found that there was a negative association between the ETR and ROA. This means that profitable companies (i.e. higher ROA) are trying to lower their ETR by utilizing the tax incentives given. Most prior studies revealed consistent results on the association between ETR and capital intensity, i.e., ETR is negatively associated with capital intensity. Gupta and Newberry (1997), and Derashid and Zhang (2003) found a negative association between ETR and capital intensity. Gupta and Newberry (1997) provided evidence that firms with a larger proportion of fixed assets had lower ETR due to tax incentives, while firms with a greater proportion of inventory had higher ETR. Rohaya et al. (2008) found that highly capital intensive companies faced lower ETR. Prior research indicated that there was no conflicting finding between ETR and inventory intensity as most of the results were the same. Gupta and Newberry (1997), Richardson and Lanis (2007) found a positive association between the ETR and inventory intensity. This means that companies with larger proportion of inventory paid higher ETR. However, the research conducted on Malaysian companies indicated that the relationship between ETR and inventory intensity was not significant (Rohaya et al., 2008).

3   Methodology

3.1   Selection of Sample

The sample selection of this study was based on the list of Enforcement Release reported by the Securities Commissions of Malaysia (Kaminski et al., 2004; and Raziah et al., 2010). The Enforcement Releases were obtained from the website of Securities Commissions of Malaysia. The enforcement action reported by Securities Commissions of Malaysia consists of criminal prosecutions, civil actions, cases compounded and administrative actions. However, the selection of sample used in this study only focused on criminal prosecutions for the period of 2001 until 2010. Only companies with available data were selected as sample of the fraud firms. The next step was to find the match companies for each of the fraud firms, i.e. the non-fraud firms. The selection of matched companieswas made based on the same industry and equivalent total assets.The methodology employed by this study is similar to Kaminski et al. (2004), where they matched the fraud firms and non-fraud firms on the basis of firm size, time period and industry. The size was selected based on the Total Asset, which represents the same capacity. Overall, 33 fraud firms and 33 non-fraud firms were selected to be the sample of this study.

3.2   Investigation Period

This study covered a period of ten years from the year 2001 until 2010. The fraud firms from the Enforcement Release reported by Securities Commission of Malaysia were selected as the samples. However, the investigation period covered in this study was only for four years, which is one fraud year (i.e. year of offence) and three preceding years. Spathis (2002) in his study on fraudulent financial statement had similarly, used the year of fraud and also preceding years to get the overview of the possibility of fraudulent actions. Meanwhile, Kaminski et al. (2004) investigated the financial ratios of fraudulent firms for a period of seven years, i.e. the fraud year and +/- 3 years. However, due to difficulties in obtaining the financial statement data of these samples, this study only covereda four-year period, i.e. one fraud year and three preceding years.

3.3   Measurement of Effective Tax Rates

Corporate ETRs were used as a proxy in this study to compare the level and divergence of corporate tax burden, particularly on tax planning strategy among fraud firms and non-fraud firms. Basically, the numerator of the ETRs measurements was the tax liability, while the denominator was the company's income. Previous studies have used various methods for measuring corporate ETRs, with the measure of company's tax liability being the numerator, while the measure of its income being the denominator.However, this study only used the Accrual-based ETR which is Tax Expense (TE)/ Earnings before Interest and Tax (EBIT) to measure the corporate tax burden among the fraud firms and non-fraud firms.

3.4   Data Filtering and Recoding

As this study used a pooled-sample data, thus, all of the companies were required to have non-missing financial information during the investigation period. Hence, the companies with missing data were filtered. Furthermore, due to the limited number of samples collected in this study, data recoding was required since the ETR does not have any economic meaning and can distort the findings. The data recoding process applied in this study is as follows: (1) the ETR of a company with positive tax expense and positive pre-tax income remained positive; (2) the ETR of a company with negative tax expense and negative pre-tax income was recoded as 0; (3) the ETR of a company with positive tax expense and negative pre-tax income was recoded as 1; and lastly (4) the ETR of a company with negative tax expense and positive pre-tax income was recoded as 0. In addition, this study used the Binary Logistic Regression in order to fulfill the third objective. Hence, the dependent variable needs to be coded as this analysis is only able to analyze categorical value. Therefore, coding applied for the dependent variable includes; (1) 0 for any ETR lower than STR; and (2) 1 for any ETR higher than STR.

3.5   Empirical Model and Variable Definitions

The ETR model was used in the empirical analysisof this study. The ETR model was estimated by using accrual-based ETR, which was measured by total income tax expense divided by pre-tax income with the income tax expense (current income tax expense and deferred tax expense). As this study used Binary Logistic Regression

analysis, the ETR model estimated for fraud firms and non-fraud
firms is as follows:

*logit (ETR>STR) = β0 + β1SIZE + β2LEV + β3ROA + β4CAPINT +
β5INVINT + ε*

ETR refers to accrual-based ETR. β0 is the intercept or
constant; β1SIZE is the company size, measured as log of total sales;
β2LEV is the firm leverage, measured as total debts divided by total;
β3ROA is return on assets, measured as pre-tax income divided by
total assets; β4CAPINT is capital intensity, measured as fixed assets
(property, plant and equipment) divided by total assets; β5INVINT is
inventory intensity, measured as inventory divided by total assets;
and ε refers to an error term.

4   Empirical Findings

4.1   Descriptive Statistics and Univariate Analyses

Table 1 explains the descriptive statistics results of the fraud firms
and non-fraud firms. The descriptive statistics results reveal that the
mean accrual-based ETR of both fraud firms and non-fraud (50.14%
and 36.07% respectively) was higher than the STR, i.e. 27.67%. The
means between the fraud firms and non-fraud firms indicate that both
were higher than the STR, but the mean for fraud firms was higher
than the non-fraud firms by 14.07%. This suggests that both fraud
and non-fraud firms were not involved in aggressive tax planning. As
discussed earlier, utilizing the tax incentives offered by the
government can bring benefits to the companies by lowering their tax
liabilities by using a better tax planning strategy within the ambit of
the tax law. Hence, this suggests that both samples, i.e. fraud and
non-fraud firms were not aggressive tax avoiders. The results also
indicate that the standard deviation of ETR for fraud firms and non-
fraud firms (43.30% and 35.71% respectively) was higher than the
standard deviation of STR, i.e. 0.80%.This suggests that there is a
significant variation in the accrual-based ETR between the
companies among the fraud firms and non-fraud firms selected in the
sample. However, the arguments on the companies' preference to pay
high tax expense in achieving their earnings target are not covered in
this study, especially on the element of earnings management.

Table 1: Descriptive STR and ETR of Fraud Firms and Non-Fraud
Firms

	STR	Accrual-based ETR	
	%	%	%
		FFs	NFFs
Mean	27.67	50.14	36.07
Standard Deviation	0.80	43.30	35.71
Minimum	25.00	0.00	0.00
Maximum	28.00	100.00	100.00
Firms-years	132	132	132

Table 2 details the findings on the distribution of corporate ETR by years for both fraud firms and non-fraud firms. This analysis follows Gupta and Newberry (1997), where they classified the corporate ETR into three categories which are as follows: (1) ETRs less than 10% was classified as low; (2) ETRs between 10% to the top statutory tax rate was classified as normal; and (3) ETRs above the statutory was classified as high. As this study involved a variety of STR due to the different fraud years, starting from the year 2001 until 2010, thus, the mean for STR represents the average value of the STR and was used throughout the investigation period. The study found that during the Year -3: (1) 21.21% both fraud firms and non-fraud firmspaid effective tax below 10% for; (2) 15.15% of fraud firms and 33.33% of non-fraud firms paid effective tax between 11% to 28% and this is classified as normal; and (3) 63.63 % of the fraud firmspaid effective tax above the statutory tax rate, and 45.45% for the non-fraud firms. Overall, during Year -3, most of the fraud and non-fraud firms paid effective tax above the statutory tax rate and this indicates that they did not practice aggressive tax planning. Meanwhile, for Year -2, the results show that; (1) 27.27% of fraud firms and 30.30% of non-fraud firms paid effective tax below 10%; (2) 15.15% of fraud firms and 33.33% of non-fraud firms paid effective tax between 11% to 28% as 10% of the top statutory tax rate is classified as normal; and (3) 57.58 % of the fraud firmspaid effective tax higher than the statutory tax rate, and 45.45% for the non-fraud firms. As for the results for the Year -1, which was one year before the fraud year, are as follows; (1) 24.24% of fraud firms and 27.27% of non-fraud firms paid effective tax below 10%; (2) 28.28% of fraud firms and 25.25% of non-fraud firms paid effective tax between 11% to 28% as 10% of the top statutory tax rate is classified as normal; and (3) 57.58% of the fraud firms and non-fraud firms paid effective tax higher than the statutory tax rate. This

indicates that more than half of the fraud firms and non-fraud firms paid higher than the statutory tax rate. Lastly, during the fraud year, i.e. Year 0, the analysis revealed that; (1) 27.27% of fraud firms and 33.33% of non-fraud firms paid effective tax below 10%; (2) 27.27% of fraud firms and 33.33% of non-fraud firms paid effective tax between 11% to 28% and this is classified as normal; and (3) 45.45 % of the companies paid effective tax above the statutory tax rate for both fraud firms and non-fraud firms. Hence, these findings suggest that most of the fraud and non-fraud firms paid higher rate of tax expense than the statutory tax rate.

Table 2: Distribution of Corporate ETR by Year

Year	ETR Range	Fraud Firms	Non-Fraud Firms
Year -3	0% - 10%	7 (21.21%)	7 (21.21%)
	11% - 27.67% (STR)	5 (15.15%)	11 (33.33%)
	> 28%	21 (63.64%)	15 (45.45%)
	Total	33	33
Year -2	0% - 10%	9 (27.27%)	10 (30.30%)
	11% - 27.67% (STR)	5(15.15%)	8 (24.24%)
	> 28%	19 (57.58%)	15 (45.45%)
	Total	33	33
Year -1	0% - 10%	8 (24.24%)	9 (27.27%)
	11% - 27.67% (STR)	6 (28.28%)	5(15.15%)
	> 28%	19 (57.58%)	19 (57.58%)
	Total	33	33
Year 0	0% - 10%	9 (27.27%)	11 (33.33%)
	11% - 27.67% (STR)	9 (27.27%)	7 (21.21%)
	> 28%	15 (45.45%)	15 (45.45%)
	Total	33	33
Total Firm-years		132	132

Table 3 presents the results of T-test in comparing the mean ETR between fraud and non-fraud firms. These findings explain the

divergence of corporate ETR from the STR imposed by the government. The *p*-value was 0.003, i.e. below the significant value of 0.005 which indicates that there is a significant difference at 5% level between the mean ETR of fraud firms and non-fraud firms where the mean of ETR for fraud firms (50.14%) was higher than mean ETR of non-fraud firms (36.07%). Thus, this suggests that the fraud firms paid higher tax expenses compared to non-fraud firms, but both samples paid a higher rate than the statutory tax rate. This indicates that both samples were not aggressive tax avoiders.

Table 3: T-Test Results- Mean Comparison of ETR between Fraud Firms and Non-Fraud Firms

	Mean FFs	Mean NFFs	t-stat	*p* −value
	%	%	%	%
ETR	50.14	36.07	2.979	0.003**

*** Significant at 1%-level (2-tailed)
**Significant at 5%-level (2-tailed)
* Significant at 10%-level (2-tailed)

4.2   Descriptive Statistics of Financial Attributes

Table 4 presents the descriptive statistics for financial attributes examined in this study. First, for the firm size, the mean of the fraud firms was 8.1567, i.e. equal with the non-fraud firms (8.2114). This indicates that the selection of the non-fraud firms is equal to the fraud firms for the matching process. The value for the standard deviation was 0.53403 for the fraud firms and 0.43841 for the non-fraud firms. Second, for the leverage, the mean for the fraud firms was 0.0823 and 0.0775 for the non-fraud firms. This indicates that on average, the fraud firms were facing higher debt compared to the non-fraud firms. However, there was not much difference between standard deviations for both samples, whereby the fraud firms recorded 0.13223 and the non-fraud firms recorded 0.12681. Third, for return on assets, the results indicate that the mean of ROA for fraud firms was -0.1734, lower than the non-fraud firms (0.0520). The values for standard deviation of these samples were 0.69779 for fraud firms and 0.17602 for non-fraud firms. Fourth, the mean of capital intensity for fraud firms and non-fraud firms were 0.3238 and 0.3403 respectively. Meanwhile, the standard deviation for fraud firms was 0.28882 and 0.44282 for the non-fraud firms. The descriptive statistics results of

Table 4: Descriptive Statistics of the Financial Attributes

	Financial Attributes	Fraud Firms	Non-Fraud Firms
1	**SIZE**		
	Mean	8.1567	8.2114
	Standard Deviation	0.53403	0.43841
	Minimum	6.54	7.36
	Maximum	9.56	9.75
2	**LEV**		
	Mean	0.0823	0.0775
	Standard Deviation	0.13223	0.12681
	Minimum	-0.19	0.00
	Maximum	0.79	0.75
3	**ROA**		
	Mean	-0.1734	0.0520
	Standard Deviation	0.69779	0.17602
	Minimum	-6.08	-0.40
	Maximum	0.85	1.04
4	**CAPINT**		
	Mean	0.3238	0.3403
	Standard Deviation	0.28882	0.44282
	Minimum	0.00	0.01
	Maximum	1.98	3.81
5	**INVINT**		
	Mean	0.1429	0.2109
	Standard Deviation	0.21427	0.54190
	Minimum	0.00	0.00
	Maximum	0.98	6.16
	Total Firm-years	132	132

the last financial attributes, i.e. inventory intensity indicates that the
mean for fraud and non-fraud firms were 0.1429 and 0.2109

accordingly. This shows that the mean of inventory intensity for non-fraud firms was higher than fraud firms. Then, the standard deviation value of inventory intensity for fraud firms was 0.21427, while non-fraud firms recorded 0.54190.

4.3   Logistic Regression Analyses

This study used the Binary Logistic with only two categorical values of dependence variables. In order to run this logistic regression, the dependent variable, i.e. corporate ETR was coded based on the mean of STR determined in a previous test (i.e. 27.6%). Hence, any corporate ETR higher than 27.6% is coded as 1, while ETR lower than 27.6% is coded as 0. Table 5 presents the results on Omnibus Tests of Model Coefficients which gives an overall indication of how well the model performs. For this set of results, high significant value (i.e. $p < .05$) among the fraud firms and non-fraud firms indicates that the model was performing well. The table shows that the chi-square values were 16.477 for fraud firms and 33.393 for non-fraud firms, both with 5 degrees of freedom.

Table 5: Omnibus Tests of Model Coefficients

	Chi-square		df		Sig.	
	FF	NFF	FF	NFF	FF	NFF
Step	16.477	33.393	5	5	.006	.000
Block	16.477	33.393	5	5	.006	.000
Model	16.477	33.393	5	5	.006	.000

Further, Table 6 of the Model Summary provides information on the usefulness of the model. The Cox & Snell R Square and the Nagelkerke R Square values provide an indication of the amount of variation in the dependent variable explained by the model (from a minimum value of 0 to a maximum of approximately 1). In this model, the two values for the fraud firms' model were .117 and .157, suggesting that between 11.7% and 15.7% of the variability are explained by this set of variables. Meanwhile, for the non-fraud firms' model, the two values were .224 and .298, suggesting that between 22.4% and 29.8% of the variability between ETR and STR are explained by this set of variables.

Table 6: Model Summary

2 Log likelihood		Cox & Snell R Square		Nagelkerke R Square	
FFs	NFFs	FFs	NFFs	FFs	NFFs
164.570[a]	149.597[a]	.117	.224	.157	.298

This is followed by Table 7 which presents the Hosmer and
Lemeshow Test results to support the *valuable (value) of the model*.
This test, which SPSS states as the most reliable test of model fit, is
interpreted very differently from the omnibus test discussed above.
For the Hosmer-Lemeshow Goodness of Fit, Testpoor fit is indicated
by a significant value of less than .05. Hence, to support the model,
the significant value must be greater than .05. For this study, the chi-
square value for the Hosmer-Lemeshow Test was 10.521 for the
fraud firms and 11.135 for the non-fraud firms with a significance
level of .230 and 1.98 respectively. Hence, the p>.05 of both samples
indicates the models are supported.

Table 7: Hosmer and Lemeshow Test

Chi-square		df		Sig.	
FFs	NFFs	FFs	NFFs	FFs	NFFs
10.521	11.135	8	8	.230	.198

Table 8: Classification Table

Observed		Predicted					
		ETR				Percentage Correct	
		Lower than STR		Higher than STR			
		FFs	NFFs	FFs	NFFs	FFs	NFFs
ETR	Lower than STR	36	47	22	19	62.1	71.2
	Higher than STR	15	21	59	45	79.7	68.2
	Overall percentage					72.0	69.7

a.   Constant is included in the model.
b.   The cut value is .500

Table 8 provides an indication of how well the model is able to predict the correct category (lower than STR/higher than STR) for each case. The model correctly classified 72.0% for the fraud firms and 69.7% for the non-fraud firms of cases overall. The cut value of this test is 50%, hence, both models for fraud firms and non-fraud firms have been classified correctly for the dependent variable (lower than STR/higher than STR).

Table 9 shows the variables in the equation for fraud firms and non-fraud firms. The table provides information on the contribution or importance of each of our predictor variables. The test that has been used here is known as the Wald test. Any significant values less than .05 contribute significantly to the predictive ability of the model. The results indicate that for the fraud firms only ROA was significant with $p=$ 0.015. This indicates that ROA is one of the major factors influencing the variability of the ETR from STR among the fraud firms. Other variables (SIZE, $p=.696$; LEV, $p=.429$; CAPINT, $p=$ .056; and INVINT, $p=$ .422) did not contribute significantly to the model of fraud firms. Then, the B values provided in the table are equivalent to the B values obtained in a multiple regression analysis. These are the values that were used in an equation to calculate the probability of a case falling into a specific category. The positive or negative B values explain the direction of the relationship (which factors increase the likelihood of higher than STR and which factors decrease it). In the model of fraud firms, the results show a negative B value (-1.980) for ROA. This indicates that the higher the profitability of a fraud firm the less likely it is that they will pay higher than STR and vice versa. This supports the findings of previous correlation test among the fraud firms. Meanwhile, for the non-fraud firms' model, the results indicate that there were two significant variables: (ROA, $p=0.001$; and CAPINT, $p=0.000$) which contribute significantly to the variability of the ETR than STR (i.e. lower or higher than STR) among the non-fraud firms. For the ROA, the B value (-9.157) showed a negative relationship, which indicates the higher the profitability of a non-fraud firm the less likely it is that they will pay higher than STR and vice versa. Hence, this result is consistent with the fraud firms. As for the CAPINT, the B value (-5.429) indicates a negative relationship with the dependent variables. Therefore, the lower the investment in fixed assets of a non-fraud firm, the less likely it is that they will pay higher than STR and vice versa.

Table 9: Variables in the Equation of Fraud Firms and Non-Fraud Firms

Model:
logit (ETR>STR) = β0 + β1SIZE + β2LEV + β3ROA + β4CAPINT + β5INVINT + ε

	B		**S.E.**		**Wald**		**df**		**Sig.**		**Exp(B)**	
	FFs	NFFs	FFs	NFFs	FFs	NFFs	FFs	NFFs	FFs	NFFs	FFs	NFFs
SIZE	-.178	-.145	.457	.621	.152	.055	1	1	.696	.815	.837	.865
LEV	1.188	-1.362	1.502	2.220	.625	.377	1	1	.429	.539	3.280	.256
ROA	-1.980	-9.157	.817	2.762	5.878	10.992	1	1	.015	.001	.138	.000
CAPINT	-1.564	-5.429	.818	1.413	3.660	14.761	1	1	.056	.000	.209	.004
INVINT	.835	-2.803	1.041	1.544	.644	3.296	1	1	.422	.069	2.306	.061
Constant	1.808	3.662	3.873	5.219	.218	.492	1	1	.641	.483	6.095	38.938

a. Variable(s) entered on step 1: SIZE, LEV, ROA, CAPINT, INVINT.

5   Conclusion

The empirical findings of this study provide evidence that the samples of fraud firms were not aggressive tax planners, i.e., there is no element of tax-motivated exists in the financial statement fraud.Nevertheless, the current study has discovered several potential issues which warrant further investigation. For example, future research should examine earnings management and taxation, that is, how income tax expense can be used to achieve earning targets. The chronology in preparing the financial statement also suggests that the tax expense is a logical context that is being used to achieve earning targets (Dhaliwal, Gleason, and Mills, 2004). This can be related to the situation where in order to achieve earning targets, firms are willing to hold the tax expense and pay higher tax expenses so that they can attract more investors. Finally, the limited sample used in the current study might affect the results. Hence, future research can be extended by using a bigger sample of the fraud firms in Malaysia to provide more accurate empirical evidence on this issue.

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