The Influence of Business Risk on Audit Pricing and Fraud

Wan Mardyatul Miza Wan Tahir [1] [+] and Halil Paino [1]

[1] Faculty of Accountancy, Universiti Teknologi MARA (Pahang), Malaysia

Abstract. Business risk approach to the audit is expected to provide a better basis for assessing indicator that might lead to financial statement fraud. In addition, high business risk of client, will lead to increased in auditor's business risk which may damage the reputation of auditor as professional auditing practices. Thus, more audit works to perform to avoid auditor's expected losses. Consequently, this supposes result in an increase on audit fee. Thus, this paper intends to develop a model to identify the relationship between business risk, fraud and audit fee. A sample of ten fraudulent companies and sample of 90 non fraudulent companies are being identified to achieve the objective. Stepwise logistic regression was employed. The results clearly indicate that business risk and audit fee entered the fraud prediction model.

Keywords: Business Risk, Audit Fee, Fraud.

1. Introduction

Business risk is generally defined as a circumstance that may influence the operation, survival and profitability of a firm as a result of internal and external conditions. While, auditors refer the term business risk as a potential for organization is failure to perform business process effectively [1]. The Malaysian Approved Standards on Auditing (MASA), ISA 240 on "The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements" hence requires the auditor to assess the risk of fraud and error by incorporating various risks indicators into audit planning during the audit of financial statement. Conventional audit risk focuses more on internal accounting control error and accounting process error. Thus, this might overlook the external risks, for example, in the situation of business survival. In fact, companies experiencing financial difficulties are found to be associated with fraudulent financial reporting [2]. Client business risk is an indicator of material misstatements due to error or fraud [3]. This consequently leads to the external stakeholders believing that higher audit fee charged by the auditor the more risky the client is assumed to be [4]. As such, this paper investigates whether client's business risks are a leading indicator of committed fraud. The audit price observed also is expected to increase parallel to client's business risk when fraud predicted.

The United State's seventh largest accounting firm, Laventhol and Horwath (L&H), filed for bankruptcy in 1990. Part of the reasons, L&H which specialized in real estate industry is blamed for its clients' loss on sharp decline in property price due to economic recession in the late 1980s. Accordingly, investors demand compensation from auditors to recover their loss, although the auditor is not responsible for that [5]. As such, L&H became the largest professional accounting firms that had failed in that period before the most debatable case, Arthur Andersen in 2001 [6]. The failure of Arthur Andersen, also known as Big-5 world-wide established accounting firm, also resulted from a collapse of its client, Enron. Which was caught engaged in accounting fraud by inflating revenue and not disclosing liabilities. This led to Enron being said as the largest audit failure. These cases have proven that client's business risk and fraud discovery do affect auditor's business risk. The KPMG Malaysia fraud survey in 2009 has found that 61% of respondents believed that the fraudulent attempt for Malaysian business is set to increase over the next two years, which is substantially higher as compared to 44% in 2004 survey. As a result, to minimize auditor's risk, the audit procedure is expected to incorporate various risk factors. Yet, these audit works are believed to reflect on the audit fee charged. Therefore, this paper intends to assess whether or not there is connection exists between business risk, fraud and audit pricing. The research questions to be answered for this purpose are:

- Does financial assessment on business risk able to detect fraud?

[+] Corresponding author. Tel.: +60122609652.
E-mail address: mardyatul79@yahoo.com.

- Does business risk and amount of audit fees charged by auditor warn existence of fraud?

The objectives of this paper then are to investigate in fraud prediction whether there is a co-relation between:

- business risk and fraud prediction
- business risk, audit fee and fraud prediction

2. Literature Review

Business risk audit is a relatively new audit approach incorporated in audit assessment in response to prominent audit failures that enforce auditors to evaluate clients' risk in every aspect [7]. In fact, auditors are urged by professional auditing standards of International Federation of Accountants (IFAC), ISA 315, to obtain information on client's business risk and understand it thoroughly to detect material misstatement. As such, [8] claimed that business risk is eventually interpreted as the risk of financial statement fraud that leads to business failure. Accordingly, poor financial performance affected by economic, industry or operating activities would increase pressure for a manager to commit financial statement fraud [9]. For example, [10] found evidence on the tendency of managers to provide discretionary accruals to show superior income in a situation of infringement of debt covenants. Thus, it is proven by [11] that the level of leverage ratio associated to this scheme. Whereas, [12] argued that financial distress firm are likely to involve in financial fraud measure by times-interest earned ratio. The ratio measures the ability of the firm to cover its interest commitment on debt obligation. [13] stated that current ratio is considered as prime indicator of account manipulation. Part of the methods used to improve current ratio includes inflating fixed assets [14] or liability concealment. Managers tend to manipulate Return on Asset (ROA) as its often use as basis to measure their performance. In fact, [15] reported of significant difference of ROA between fraud and non-fraud firms.

To be precise, prior researchers [12] and [16] applied these ratios to represent business risk measures since it reflects the firm's survival. This leads to financial fraud when the firms use accounting discretions to show good financial performance to manipulate investors in order to remain survive. As a consequence, auditors are expected to perform additional audit procedures when client is considered as high risk. This results in an increase of audit fee. In fact, audit literature provides evidence that business risk can impact audit costs [16], [17]. It is believed that the audit fee charged by auditors is potential information to reflect client's risk. To conclude, a large part of literature explains on the link between business risks measures to detect fraud and how risk give impact on audit pricing. However, to date, there is limited empirical evidence on business risk to integrate business risk, fraud and audit fee. This paper contributes to the literature on fraud prediction model in which both business risk and audit fee are incorporated and taken as fraud indicator.

3. Research Methodology

The selection of variables is based on the business risk approach of auditing financial statement. Thus, various financial measures have been identified by researchers to capture different aspects of the clients' economic condition to reflect clients' business risk. This paper considers a set of financial ratios widely used by similar prior studies such as [12] and [16] to represent business risk measures. The ratios are return on asset (ROA), which measured by earnings and cash flows, current ratio, leverage, and times interest earned. [18] believes that financial ratios are practical measure in detecting fraud. These measures are expected to correspond with client's business risk to detect fraud and are estimated to give impact on audit pricing.

To achieve the objectives of the study, the Malaysian Securities Commission (SC) website (www.sc.com) is scrutinized in order to identify companies committed to fraud from the 1990s until February 2012. Sample of companies comprises companies listed in a Bursa Malaysia. As such, ten fraudulent companies included in this study from the twelve that have been identified from the Malaysian Securities Commission (SC) website. These companies are Tat Sang Holdings Bhd, Polymate Holdings Bhd, United U-Li Corporation Bhd, Goh Ban Huat Bhd, NasionCom Holdings Bhd, Transmile Group Bhd, Welli Multi Corporation Bhd, Megan Media Holdings Bhd, MEMS Technology Bhd and Satang Holdings Bhd. The two companies are excluded from the analysis due to the unavailability of annual report under the period of investigation. Each

of the fraudulent company was matched with nine non-fraudulent companies based on size, measured by total assets and the industry related – all in the year the fraud was committed. Thus, total sample consist of 100 companies, comprises then fraudulent companies and 90 non-fraudulent companies. All financial data are collected from annual report which can be accessed at Bursa Malaysia website (www.bursamalaysia.com).

3.1. Model Development

Two models are developed to investigate the association between business risk and fraud whether there is a direct association or a joint correlation with an audit fee to detect the interaction effect. They are as follows:

- **Model 1 (without audit fee)**

Fraud = b0 + b1 (ROA earning) + b2(ROA cash) + b3(Current) + b4(Leverage) + b5(Interest)+ e

- **Model 2 (with audit fee)**

Fraud =b0+b1(ROA earning)+ b2(ROA cash) + b3(Current) + b4(Leverage) + b5(Interest) + b6(Audit)+e

Where,

Fraud ='1' if fraud exists and '0' otherwise

ROA earning = operating profit/total assets;

ROA cash = operating cash flows/total assets;

Current = current assets/current liabilities;

Leverage = total liabilities/total assets;

Interest =Interest expense/operating profit;

Audit Fee = audit fee/total assets; and

e = error term

4. Results and Discussion

The prediction model of this study utilizes logistic regression to predict fraud. However, this statistical method does not make any assumptions on normality of the variables, therefore, discriminant analysis is preferred. Table 1 below contains univariate ANOVA results for fraud and non-fraud firms.

Table 1: Means, Standard Deviations (SD) and t-test of each group

Companies	Business risk										Audit Fee	
	ROA(earnings)		ROA(cash)		Current		Leverage		Interest			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Fraud	-0.0154	0.1361	0.0310	0.1016	1.8806	0.9428	0.4800	0.1732	0.2016	5.4708	0.000355	0.000293
Non-Fraud	0.0699	0.0849	0.0693	0.0982	2.6850	1.5282	0.3827	0.2281	11.6129	15.4110	0.000543	0.000364
t-test	-3.083		-2.144		-2.510		2.395		-6.166		-1.871	
Sig.(two-tailed)	0.003		0.055		0.022		0.036		0.000		0.085	

The results show that only interest presents high statistical significance of p-value (0.000), which indicates that this ratio maybe associated to fraud prediction. From the mean value of Interest, there is clearly huge difference between fraud and non-fraud firms. This indicates, on average the fraud firm is not able to cover its interest on debts obligation. It is consistent with the notion that highly distressed firm tends to commit fraud [12]. However, mean value ROA between earning and cash for non-fraud firm shows slightly little variation as compared to fraud firm. This might suggest that fraud firm utilizes accounting discretion of non-cash items to attempt fraudulent activities. This result is consistent with [15]'s findings. In addition, current ratio and leverage value show quite small differences between fraud and non-fraud firms. However, both ratios indicate that the non-fraud firms are financially safe than the fraud firms. Overall performance of business risk measures shows that fraud firms bear higher risk than non-fraud firms. It is also found that the audit fee mean value of fraud firms is slightly lower than the non-fraud firms. This contradicts the previous argument. This low audit fee charged might signal (a) the undetected risk by the auditor or (b) the cost hidden on other services such as consultancy or/and low-balling effect.

Next, to measure connection between business risks and fraud prediction, stepwise logistic regression was being carried out. Table 2 shows the results of Model 1 that represents prediction of fraud on business risk assessment without audit fee.

Table 2: Model 1 - Fraud Prediction Model (without Audit Fee)

Independent variables	Unstandardized coefficient (B)	S.E.	Sig.
ROA earnings	-5.297	4.573	0.013
Interest	-.0.146	0.081	0.024
Constant	-1.290	0.387	0.001
X^2	15.706	0.000	
N	100		
Correctly predicted:			
Non-Fraud	100%		
Fraud	20%		
Overall	92%		

The result shows that ROA earnings and Interest entered the model which indicates that the variables have significant coefficient in fraud prediction. Both variables indicate negative effect where ROA earnings with b=-5.297 (p<0.013) and Interest with b=-0.146 (p<0.024). This means, the firms that have high return on asset measured by earnings and high times-interest earned have increased probability of being classified as non-fraud firm. As such, this result reflects that firms showing high return on assets measured by earnings and secure ability to repay interest obligation is an indicator of them not being involved in fraud. The ratios indicate that firms' survival is high therefore managers are not in pressured position. While, on the other hand, financially distressed firm are likely to involve in financial fraud [12]. This results are also consistent with [15]'s findings of significance different of ROA between fraud and non-fraud firms.

Model 2 then being performed to assess whether business risk and audit fee is a better model to predict fraud than business risk alone.

Table 3: Model 2 - Fraud Prediction Model (with Audit Fee)

Independent variables	Unstandardized coefficient (B)	S.E.	Sig.
ROA earnings	-9.969	5.353	0.043
Interest	-0.268	0.123	0.029
Audit Fee	-38.832	18.524	0.050
Constant	0.982	0.958	0.001
X^2	24.048	0.000	
N	100		
Correctly predicted:			
Non-Fraud	100%		
Fraud	40%		
Overall	94%		

The results show that Audit Fee entered the model as well as ROA earnings and Interest. This explains that these three variables have significant coefficient in the fraud prediction model with negative effect where ROA earnings b=-9.969 (p<0.043), Interest b=-0.268 (p<0.123) and Audit Fee b=-38.832 (p<0.05). High value of return on asset measured by earnings, times interest earned and audit fee to total assets, indicate increased probability of the firms being classified as non-fraud firm. This explains that as firms not involved in fraud have low business risks and high audit fee charged as compared to firms engaged in fraudulent activity. Overall prediction is 94% correct as compared to Model 1, with only 92%.

5. Conclusion

Model 1 and Model 2 addressed the first and second research questions respectively. The main findings indicate business risk assessment will assist in fraud prediction particularly Return on Asset (ROA)

measured by earnings and times-interest earned. Firms facing financial distress show increased probability to commit fraud. While, audit fee gives a sign of fraud when the audit fee charged is relatively low as compared to the other firm in the same size. Adding audit fee is a better model to predict fraud than business risk alone. This paper provides a valuable result for investors to identify 'red flag' by auditor's fee and business risk measures. However, this study does have its own limitations as limited data of fraud case and other statistical methods would give different results.

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7. References

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