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Financial Reporting Risk Assessment and Audit Pricing

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Abstract - Financial statement fraud cases misled users such as investors and creditors. Therefore, the main objective of this study is to identify the association between five ratios of financial reporting risks to predict fraud. Consequently, this study also investigates the impacts of fraud detection on audit fee. Thus, sample of 10 of fraudulent companies and sample of 40 non fraudulent companies are being identified to achieve the objective. Stepwise logistic regression was being employed. The results clearly indicate that changes in sales, receivables and allowance for doubtful debts have significant effect of fraud detection. However, fraud detection gives no or little impact on audit fees.

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Financial Reporting Risk Assessment and Audit Pricing

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I. Introduction

An epidemic of white-collar crimes in the last few years in Malaysia has often induced questions on the role of an auditor in detecting financial abnormality that leads to financial statements fraud. According to Gomes (2010), the ignorance towards auditors' role is one of the main reasons why fraud exists and it continues to grow. Thus, auditor should provide a comprehensive risk assessment which includes designing audit procedures that would assist in detecting fraud and errors that are material to the financial statements. However, despite these efforts, results have shown that auditor still fails to detect corporate irregularities that led to financial statement fraud.

In a survey made by KPMG in 2009 on financial statement fraud, the result shows that only 8% (out of 31% fraudulent financial statement cases) were detected by external auditors. As auditors plays an important role to provide reliable opinion especially in the cases of fraudulent financial statement, a strong and effective audit framework needs to be established. To do this, a detailed preparation by the auditor that encompasses comprehensive audit procedures and thorough risk assessment is essential in order to enable them to detect fraud. This task however could be very time consuming as upon any abnormalities found, additional audit testing is required in order to collect audit evidence. This translates to additional extensive audit procedure that would attract more cost to the auditor and subsequently, a higher audit fee.

Malaysia Institute of Accountants (MIA) provides a guideline on charging fees to client. The fees are dependent on audit skills and knowledge required; and time occupied for such work. However, some auditors believe that audit fees in Malaysia are comparatively low against other countries in the region (Teck and Azam, 2008). In relation to the issue, this paper serves to investigate whether there is a relationship between audit fees and financial reporting risks and fraud.

This paper aims to provide Audit Committee a new proposal on audit fee derivation that integrates financial reporting risk as fraud detection mechanism. Failure to standardize audit pricing would lead to price war between the auditing firms in Malaysia which consequently results to poor audit quality. This would severely impact auditor reputation as they would be blamed for the client's fraud.

II. Research Questions &Objectives

A statistic states that a reduction in value of share price can attain approximately 500 to 1,000 times to the amount of the fraud (Gomes, 2010). In relation to KPMG Malaysia fraud survey in 2009, 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. Thus, audit committees are expected to assess more on financial reporting risk as one of the audit framework in fraud detection to maintain audit quality. Audit quality is highly critical to gain public confidence in audited financial statements.

The pioneer researcher on the determinants of audit fee suggests that, auditors will charge clients a premium to compensate themselves for the increase in client risk. Accordingly, other recent researchers such as Choi et al. (2008) and Messier et al. (2008) empirically proved that audit fee increases in line with the company's risk. Thus, the issue here is whether low audit fees acts as the main factor of increasing financial reporting fraud cases in Malaysia. For example, by referring to the case of Transmile Group Bhd in year 2005 and 2006 where the audit fees charged by Deloitte KassimChan were RM73,000 and RM150,000 as compared to their revenues RM356,379,000 and RM655,831,000 respectively. Whereas in 2007 when KPMG took over the audit assignments, the audit fees increased to RM280,000, while the revenue dropped to RM616,227,000. In fact, Transmile Group Bhd was caught overstating its revenue by RM622 million during

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the years (The Star, 2007). This is clearly an evident that low audit fees charged to a company would result to "hidden" fraudulent case despite that they fall into the high risk category.

Therefore, this paper intends to investigate the relationship between fraud, financial reporting risk and audit fee. Thus, the research questions are:

1. Does financial reporting risk has an association to predict fraud?
2. Do financial reporting risk and audit fee predict fraud better than financial reporting risk by itself?

The objectives of this paper are as follow:

1. To investigate whether the co-relation between financial reporting risks and audit fee would assist in fraud prediction.
2. To develop model on the relationship between financial reporting risks, fraud detection and audit fee.

III. Literature Review

Malaysian fraud cases such as United U-Li Corporation Bhd, Transmile Group Bhd and Megan Media Holdings Bhd has becoming corporate polemic. However, fraud detection by auditors is a relatively rare circumstance (Harold et. al, 2010). Auditors need to be provided with clear defined procedures in auditing to help them to detect fraud. Indeed, it is expected that high financial reporting risk would leads to fraud.

a) Financial Reporting Risk and Fraud

Sun and Liu (2011) suggest that clients' high risk can force auditors to perform more effectively. Therefore, financial reporting risk should be incorporated in audit procedure and audit testing to identify "red flags" signals that lead to possibilities of fraudulent activity. In fact, there is requirement by The Malaysian Approved Standards on Auditing, Al 240 on "Fraud and Error" (MIA, 1997) and Al 400 on "Risk Assessments and Internal Control" (MIA, 1997) for the auditor to assess the risk of fraud and error during the audit of financial statements. As such, audit procedures are designed by integrating fraud risk indicators to obtain reasonable assurance that material misstatements arising from fraud and error are detected.

Risk assessments are critical because it forms as the basis of judgments in the audit process to support the overall audit opinion (Schultz et. al., 2010). Nahariah (2009) identified that risk level influences the external auditors' judgments in fraud detection because in a high risk environment, external auditors are more conscious of the possibility of fraud occurring. One of the reasons for that wary, auditor has a tendency to be sued for financial statement fraud. According to Bonner et. al.(1998), the most common type of financial reporting frauds litigation cases on auditors occur from fictitious transactions. Thus, it is time consuming to perform audit testing and audit fee charged foresee to reflect on fraudulent companies.

b) Audit Fee and Fraud

Mande and Sona (2011), found that lengthy interaction between clients and their auditors reflects high audit risk factors. However, one of the issues relates by this circumstance, audit cost is increasing in consistent with the amount of time consumed to perform substantive testing to detect material misstatement (Stanley, 2011). In fact, auditors are blamed for the higher fees charged. This will cause increasing pressure for auditors to reduce the fees as well as the related cost to conduct the audit. However, Charles et al. (2010) provides empirical evidence that audit fees will surge in response to increases in risk to detect fraud. Malaysia Institute of Accountants (MIA) provides guideline on charging fees to client. This includes duration of the assignment which will be reflected on the fees charged. Empirical evidence, for example, Hay et al. (2006), suggests that higher audit fees are associated with high risk clients. As such, audit fees expected to have an impact towards fraudulent financial statement.

IV. Research Method

a) Selection of Variables

This paper uses financial ratios and trend analysis to evaluate financial reporting risk. The selection of variables is based on empirical literature on financial statement fraud. The most common technique in the cases of fraudulent financial statement is through inflation of revenue. Consistent with Perols and Lougee (2010) research, they have found some evidence that firms are more likely to be committing fraud by overstating revenue. Methods used includes by manipulating documents and producing false report (Corner, 1988). As such, this will incurred additional account receivables of unearned sales. In addition, Beaseley (1999) found that half of fraud detected involved in understating allowance for doubtful debts. The manipulation of loopholes in accounting standards of allowance for doubtful debts are due to it is subject to judgment of estimating uncollectible debt. This type of financial statement fraud scheme relate to wrong execution of accounting principles and method for provision and measurement (Razaee, 2002). Thus, this paper includes sales, account receivables and allowance for doubtful debts variables to compute ratio of financial reporting risks.

The first ratio considering test of account receivables to sales (REC/SAL) as the ratio being applied by prior researchers such as Fanning and Cogger (1998) and Spathis (2002). The second ratio to assess risk of fraud as adopt by Green and Choi (1997) by measure allowance for doubtful debt to account receivables (AFDD/REC). Trend analysis of sales,

account receivables and allowance for doubtful debts also widely use for fraud detection mechanism. This method being applied by Lin et al. (2003), where the ratio computed by identified the changes in the year of fraud committed and the preceding year. Finally, in order to identify the association between fraud and audit fee, the ratio of audit fee to sales (AuditFee/SAL) being applied. It is based on assumption that the work for audit testing on financial reporting risk will increase in relation to size of sales.

b) Sample and data

The sample for this study consists of companiesisted on the Bursa Malaysia that are representing by fraudulent and non-fraudulent. The list of fraudulent companies is obtained from the Malaysian Securities Commission (SC) website (www.sc.com). The record shows that there are twelve companies identified as committing fraud in its financial statement. However, GP Ocean Bhd and Ganad Corporation Bhd are excluded from the analysis due to unavailability of data, although they were discovered to commit such fraud in 2006 and 1997 respectively.

Below are the lists of the fraudulent companies and their characteristics:

Table 1 : Composition of the Sample of Fraudulent Companies

No	Companies	Industry	Size (Total Asset) RM (million)	Year of Reported Fraud
1.	Tat Sang Holdings Bhd	Manufacturing; Trading	124	2000
2.	Polymate Holdings Bhd	Property developer	364	2003
3.	United U-Li Corporation Bhd	Manufacturing	119	2004
4.	Goh Ban HuatBhd	Properties	282	2004
5.	NasionCom Holdings Bhd	Voice and Data services	263	2005
6.	Transmile Group Bhd	Air Transportation services	2,044	2005
7.	Welli Multi Corporation Bhd	Management services	247	2005
8.	Megan Media Holdings Bhd	Manufacturing	1,398	2006
9.	MEMS Technology Bhd	Product development	158	2007
10.	Satang Holdings Bhd	Consumer Product	82	2007

The fraudulent companies are then matched with nine non-fraudulent companies in the year of fraud, based on its industry and size (measured by total assets) using the same sampling method adopted by Lin et. al, (2003). This resulted to samples of 10 fraudulent companies and 40 non-fraudulent companies, which makes a final combined sample of 50 companies. The target of the sampling method is to find out which financial reporting risks factors has significant influence in fraud detection.

Financial data for the variables were taken from its annual reports. The statistical method of logistic regression analysis is selected to achieve the objectives of this study. Indeed, this method was used by Spathis (2002) in almost similar study.

a) Model development

The development of a conceptual framework was estimated using the financial ratios that relates to financial reporting risk factors. The model is presented as follows:

$$Fraud = b_0 + b_1(REC/SAL) + b_2(AFDD/REC) + b_3(ChangeSAL) + b_4(ChangeREC) + b_5(ChangeAFDD) + e$$

Where;
Fraud = 1 if Fraud discovered, 0 otherwise.
REC/SAL = Receivables/Sales
AFDD/REC= Allowance for doubtful debt/Receivables
ChangeSAL = Changes of sales from preceding year/Sales of preceding year
ChangeREC = Changes of receivables from preceding year/Receivables of preceding year
ChangeAFDD = Changes of allowance of doubtful debt from preceding year/allowance of doubtful debt of preceding year

For Model 2; the variable AuditFeeSAL was added into the Model 1 above. The audit fee was included to investigate the association of Fraud and audit fee.

Therefore, Model 2 presented as:

$$Fraud = b0 + b1(REC/SAL) + b2(AFDD/REC) + b3(ChangeSAL) + b4(ChangeREC) + b5(ChangeAFDD) + AuditFeeSAL + e$$

Where;
Fraud = 1 if Fraud discovered, 0 otherwise.
REC/SAL = Receivables/Sales
AFDD/REC=Allowance for doubtful debt/Receivables
ChangeSAL=Changes of sales from preceding year/Sales of preceding year
ChangeREC= Changes of receivables from preceding year/Receivables of preceding year

V. Results and Discussions

a) *Univariate testing*

The univariate test was performed to identify any association between financial reporting risks ratios and audit fee in fraud detection. Table 2 indicates the mean, standard deviation and t-tests of variables for non-fraudulent companies and fraudulent companies.

Table 2 : Test difference in the Means

Variables	Mean		Standard Deviation		t-test	Sig. (two-tailed)
	Non-Fraud	Fraud	Non-Fraud	Fraud		
REC/SAL	0.2341	0.4262	0.1566	0.2683	2.222	0.051
AFDD/REC	0.0412	0.0645	0.1008	0.1645	0.645	0.520
ChangeSAL	0.0169	0.0332	0.1377	0.6685	0.645	0.535
ChangeREC	0.2155	0.4733	0.2752	0.3746	2.706	0.000
ChangeAFDD	0.1389	-0.4503	0.4107	1.0467	-1.765	0.110
AuditFeeSAL	0.0007	0.0009	0.0004	0.0009	0.399	0.698

By referring to large difference of means value of the variables, with high statistical significance ($p<0.000$), it may indicate the ratio able to detect fraud. Thus, only ChangeREC was shown as statistically significant. This explains that significant increase of account receivables from prior year may indicate high possibility of fraud. From the mean value, it shows that ChangeREC, ChangeSAL and REC/SAL of fraudulent companies are slightly higher than non fraudulent companies. This might implies, falsifying invoices to increase revenue, resulting in significant increase in account receivables of fraudulent companies. As such, fraudulent companies have higher allowance for doubtful debts relating to account receivables as compared to non fraudulent companies shown by AFDD/REC ratio. However, by referring to ChangeAFDD of fraudulent companies, it shows that allowance for doubtful debt decrease from prior year. This mightexplain that, one of the motives of thesefraudulent companies is to show high profit during that particular year. Thus, decreasing in allowance for doubtful debt will reduce the expenses, consequently, resulting higher profit of the companies. This is clearly reflected in the results ($t=-1.765$, $p<0.110$) that the fraudulent company's ability to manipulate treatment on non-cash item on financial reporting to achieve their goals. Finally, on average, audit fee charged relative to sales of fraudulent companies is higher than non fraudulent companies. This might indicate auditor consumed more time for risk assessment on these companies thus shown on the fee charged.

b) *Multivariate Testing*

In order to secure a model to identify whether there is association between financial reporting risks variables, audit fees and fraud, multivariate testing need to be performed. Thus, Model 1with 5 variables, excluding audit fee presented below:

Table 3 : Stepwise Logistic Regression (Model 1)

Independent variables Model 1 (Without Audit Fee)	Unstandardized coefficient (B)	S.E.	Sig.
ChangeSAL	4.740	1.849	0.010
ChangeREC	5.231	1.994	0.009
ChangeAFDD	-2.908	1.445	0.044
Constant	1.327	0.492	0.007
X^2	18.981		0.000
N	100		
Correctly predicted:			
Non Fraud	100%		
Fraud	30%		
Overall	93%		

Table 3 represent stepwise logistic regression result without audit fee. From the result, 100 percent of non fraud prediction was correct, while, 30 percent of fraud prediction was correct. Overall percent of correct prediction of proposed model is 93 percent. The relationship ofdependentvariables (fraud and non-fraud) and independent variables is statistically significant by referring to $x2=18.981$ ($p=0.000$).

Three financial reporting risk variables of trend analysis found significantly entered the model. The analysis representing by ChangeSAL ($b=4.740$, $p<0.010$) and ChangeREC ($b=5.231$, $p<0.009$) have positive effect. Thus, the result indicate that, a significant changes in sales and account receivables from preceding year would indicate, this company probable classified into fraudulent companies. On the other hand,

variables of ChangeAFDD (b=-2.908, p<0.044) has significant negative effect. This mean that, changes of allowance for doubtful debt from preceding year implies that the company's probability being classified to non fraudulent companies.

The next step is Model 2 being tested using stepwise logistic regression by incorporate variable AuditfeeSAL. However, the result show that the AuditfeeSAL variable excluded from the equation. This indicates, audit fee to sales is not significant enough to predict fraud. As such, the result is not presented in this paper. Although Model 2 has no significant result, the important of Model 2 prediction will be discussed in next section.

VI. Conclusions

The objective of this paper is to identify the association of financial reporting risk, fraud and audit fee and hence, to develop a model of fraud detection. Thus, a sample consists of fraudulent and non fraudulent companies being identified. Five financial reporting risks ratio is observed from literature that believed as factors associate with fraud. As such, Model 1 shown that changes in sales, account receivables and allowance for doubtful debts have entered the model. The percentage of accuracy of the model is 93 percent. The results of this model indicate that trend analysis is important method for financial reporting fraud detection. This suggests auditors to perform audit risk assessment based on trend analysis in detecting fraud. This discussion addressed the first research question. However, Model 2 explained that audit fee is not entered into equation of the model. This result has been proven the issue of audit pricing in Malaysia. Although, on average, fraudulent companies audit fee is slightly higher than non fraudulent companies. This Model 2 addressed the second research question.

The limitations of this paper includes the sample of fraudulent companies consist of ten companies. All those companies discovered from cases in Malaysia. Thus, in future research, sampling can be acquired from Asia region financial statement fraud cases. The other alternative analysis methods, other than stepwise logistic regression, might give different result. The audit fee variable is based on assumption that the fees charged based on size of sales. As such, the changes of denominator will result different value of ratio. Noted that, basis of audit fee charge include on time allocation and skill of auditor. Thus, future research may anticipate these limitations for improvement.

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