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Risk Management practices and potential fraudulent financial reporting: evidence from Malaysia

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Abstract

Purpose – This paper investigates the relationship between risk management practices and potential fraudulent financial reporting in Malaysia by considering recent regulatory reforms of the Malaysian government on risk management practices.

Design/methodology/approach – The sample of this study was based on 257 firm-year observations during the 2012–2017 period. This study employed panel-least square regressions with period fixed effects.

Findings – This study found a significant association between risk management activities in the disclosure and potential fraudulent financial reporting. Nevertheless, this study found there is insignificant effect of the risk-management committee in reducing potential of fraudulent financial reporting.

Originality/value – This study is a pioneer research that relates firms' risk management practices with potential fraudulent financial reporting measured by F-score. Thus, this study provides an insight to regulators on the extent of risk-management practices in deterring potential fraudulent financial reporting which can be used as an input for greater enforcement of risk-management regulations.

Keywords Risk management, Fraudulent financial reporting, F-score, Corporate governance

Paper type Research paper

JEL Classification — G34, G38, M41, M48

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1. Introduction

Discussion on fraud receives a high level of attention from regulators, auditors and the public due to the increase in corporate failures. Most fraud cases occur within organizations rather than in external dealings. Contrary to popular beliefs, 68% of fraud cases occur within organizations by employers and employees, with the rest occurring externally by those in the value chain (KPMG Malaysia's Fraud, Bribery and Corruption Survey, 2014). Fraud consists of three main types which are asset misappropriation, corruption and financial statement fraud (ACFE, 2018). From those three, ACFE (2018) reports that financial statement fraud is the most serious problem for all types of organizations. Among those three, it was reported that financial statement fraud is the least common form of fraud. Despite of that, the type of fraud results in the highest median loss for companies (ACFE, 2020; ACFE, 2022). Fraudulent financial reporting is the intentional misrepresentation of a firm's financial statements with the aim of giving investors a mistaken impression about the firm's operating performance and profitability.

The significant impact of fraudulent financial reporting as one type of fraud has led to congressional questions on the role of risk management. For example, the Statement of Auditing Standards (SAS) No. 99 was announced by the American Institute of Certified Public Accountants (AICPA) in October 2002 to curb the weaknesses in fraud detection and thus highlight the importance of assessing fraud risk factors in organization. Iyer and Samociuk (2016) stress that due to exposure of companies to diverse kinds of risks, firms should implement fraud defense strategies which can be achieved through systematic risk management. In Malaysia, a new Malaysian Code on Corporate Governance (MCCG) 2017 was released by the Securities Commission Malaysia to highlight the importance of risk management. The new code took effect on April 26, 2017, replacing the earlier MCCG 2012 code. The new MCCG 2017 introduced several substantial changes and recommendations to raise the standards of corporate governance of firms in Malaysia. Among the recommendations is establishing Risk Management Committee (RMC), which comprises a majority of independent directors to oversee a firm's risk management framework and policies, and its implementation. As for MCCG 2012, the code recommended firms to establish a clear framework on risk management. Bursa Malaysia has also introduced the Guidelines for Risk Management and Internal Control which is known as The Statement on Risk Management and Internal Control: Guidelines for Directors of Listed Issuers (Guidelines). This statement was published on 31 December, 2012 with the purpose to assist firm directors in preparing appropriate disclosure on risk management and internal control aspects in a firm's annual report.

Nevertheless, while regulators are concerned with the implementation of risk management practices, studies showed that risk management practices are still lacking (Ishak and Mohamad Nor, 2017). Many studies were done to relate risk management practices with cash flow volatility (Lobo *et al.*, 2019), value creation (Dilling and Harris, 2018), financial crisis (Gonidakis *et al.*, 2020), auditing (Johnstone and Bedard, 2003; White *et al.*, 2020) and taxation (Doyle *et al.*, 2009). Even though extensive studies have been done, there is less evidence on the ability of risk management in deterring fraud. Previous studies have investigated the role of risk management in reducing earnings management (Johnston and Soileau, 2020; Choi *et al.*, 2015; Krishnan *et al.*, 2013). No studies have yet been done to investigate the effect of risk management using financial misstatement prediction method such as F-score. According to Aghghaleh *et al.* (2016), Dechow financial misstatement prediction model outperforms other models such as Beneish M-score in predicting fraud accurately. They conclude that this model fits more to Malaysian financial statement fraud cases.

Therefore, the objective of this study is to investigate the extent of risk management practices among public-listed firms in Malaysia since the framework for risk management was introduced in 2012 till the new amendment of MCCG 2017. For this purpose, we used risk management activities disclosure together with the establishment of risk management committee in measuring risk management practices. Even though the practices is on general risks, we believe that this study will provide an initial evidence on the role of risk management practices in mitigating potential fraudulent financial reporting.

Malaysia provides a unique institutional setting to be studied as fraud cases keep on increasing despite the introduction of risk management practices. According to a survey report by PricewaterhouseCoopers (PwC) (2018), the number of Malaysian organizations' fraud victims that reported losses exceeding US$1m had increased by 9% as the percentage showed 22% during the year 2018 compared to 13% in the year 2016. PwC's report in (2020) also indicated that the incident of fraud in Malaysia remains high with almost half of their survey respondents being a victim of fraud. The report reveals that in 2020, Malaysia was ranked the fifth highest in the count of fraud in the Asia Pacific region and surprisingly, the percentage increased in 2022 which makes Malaysia ranked third with the highest count of fraud in Asia Pacific region (PwC, 2022). The report highlighted that the incident of fraud in Malaysia is 41% in the year 2018 and increased to 54% in 2021. This is worrying enough as other Southeast Asian countries showed a decrease in the level of fraud (from 40% to 29%) between 2020 and 2022. In addition, Malaysia provides an appealing institutional setting which can be characterized as family connected (Abdul Rahman and Mohamed Ali, 2006), rich people connected (Sriram *et al.*, 2021) and politically connected (Sun *et al.*, 2012) which may influence the less enforcement of regulations in this country. This setting may influence fraud risks differently. According to Ishak and Mohamad Nor (2017), while regulators are concerned on firms' risk management disclosure and practices, studies show that corporate governance disclosure, especially on risk reporting among firms, is still lacking (Ishak and Mohamad Nor, 2017). A study done by Bursa Malaysia indicated that although the quality of disclosure has increased, many firms keep publishing general disclosures in the Statement of Risk Management and Internal Control (The Star, 2016).

Our findings show that risk management practices in terms of risk activities disclosure can significantly reduce the likelihood of fraud. Nevertheless, the result for the risk management committee is insignificant. The result also indicates that family firms are more protective of the firms' value, thus reducing the likelihood of fraud. In addition, the result shows that having a more independent board can also reduce the possibility of fraud in the firms.

The paper is organized as follows. Section 2 describes the requirement of risk management practices. Section 3 explains the literature review and hypotheses development of this study followed by the research methodology in Section 4. We present the result of the study in Section 5 and conclude its implications in the last section of the paper.

2. Literature review and hypotheses development

Due to some very notorious fraud cases and international scandals such as the Enron case, WorldCom and Lehman Brothers, organizations, in general, are facing legal requirements by the authorities and regulators that demand the implementation of increasingly more sophisticated risk management practices. Moreover, as technology helps organizations to be more efficient, it has also exposed them to different sorts of new significant threats. Thus, the practice of risk management process and the establishment of RMC are important to mitigate threats to firms before they actually happen.

Risk management is the key element in making stakeholders' investment decisions (Nahar *et al.*, 2016). According to agency theory, larger firms need to disclose more information to different users to reduce costs and mitigate the risk of information asymmetries (Watts and Zimmerman, 1983; Inchausti, 1997) [1]. Kaiser (1999) demonstrated that agency theory also focuses on the ways principals try to mitigate the problem by selecting certain types of monitoring action formed by using various amounts and types of positive and negative sanctions. One of them is through the establishment of a risk management process. Thus, by having a systematic process, managers and directors have implicit obligations to ensure that firms run smoothly to meet shareholders' interests.

Brealey and Myers (2002) and Block and Hirt (2000) agreed that shareholders' wealth maximization should be the overall goal of every corporate entity. Based on the agency theory, risk management implemented by the management as an agent to shareholders can help shareholders to achieve its business objectives and, ultimately, maximize their firms' value (Bowen *et al.*, 2006). Allayannis and Weston (2001) suggested that active risk management practices contribute to shareholders' value. Risk management adds value to individual firms and supports overall economic growth by lowering the cost of capital and reducing uncertainties in commercial activities. Shenkir and Walker (2006) stated that according to the Committee of Sponsoring Organizations of the Treadway Commission (COSO), the widely-used Enterprise Risk Management (ERM) model requires executive management commitment for its rigorous implementation. It is suggested that firms' key executives should be eager to commit to ERM because they are ultimately responsible for the overall protection, creation and enhancement of shareholders' value.

Due to the role of risk management, it has been investigated to relate it with fraud particularly financial reporting fraud. Jaswadi *et al.* (2022) investigated cases of fraudulent financial statements that have occurred in Indonesia and found that publication of fraud cases is limited since the introduction of risk-based supervision. The study highlighted how risk-based supervision can mitigate the occurrence of fraud cases. Brazel *et al.* (2015) highlighted that investors who emphasize the importance of fraud risk assessment to avoid fraud red flags can avoid fraudulent investments. Leech and Leech (2011) stressed that the Sarbanes–Oxley Section 404 calls for opinions from CEOs, CFOs and external auditors of US listed companies on control effectiveness over financial reporting which has almost certainly proven to be the costliest regulatory intervention. Thus, they recommended that US Congress enacts an amendment to Section 404 that requires the opinions of CEO, CFO and external auditor on the "effectiveness of risk management processes" instead of "control effectiveness". This is because a risk management process that requires a true risk-based approach would allocate resources to the most statistically probable root causes of materially wrong financial statements which can lead to fraud cases.

According to Ko *et al.* (2019), an institution like a bank may incur significant losses as a result of increased operational risk. Therefore, to avoid losses, the banks may manipulate accounting data to make their performance more outstanding. Given that fraudulent acts are often hidden and rarely made public, firms need to manage their operational risks, which include the process of identification, assessment, analysis, monitoring and control of operational risks with good sound of corporate governance. Meanwhile, Novatiani *et al.* (2022) highlighted that the establishment of risk management committee (RMC) provides oversight role of organization's risk management strategies, policies and processes which can serve as an important governance support mechanism. Their result found that risk management can prevent false financial reporting as good risk management creates innovation, embeds courage to take risks and inculcates attention to detail.

Rahman and Al-Dhaimesh (2018) investigated the impact of risk management based on COSO (Committee of Sponsoring Organizations of the Treadway Commission) framework which consists of five components of internal controls in bank in Damascus, Jordan and their result revealed that risk management can reduce internal control risks and hence reduce fraudulent financial reporting. Based on their study, among the components of risk management that significantly affect fraudulent financial reporting are internal environment variable, events identification, risk assessment, response variable and control activities. Their result found that monitoring, communication and information system variables have no effect in reducing the fraudulent financial reporting in Damascus, Jordan.

Generally, previous literature has indicated that due to operational risks, firms are exposed to losses and hence are more exposed to the possibility of manipulating data in financial statements to show good performance. As such, having risk management practices can help to reduce operational risks and the potential of fraudulent financial reporting. Thus, we hypothesize that:

H1. There is a negative relationship between risk management practices and potential fraudulent financial statement.

3. Research methodology

3.1 Sample selection

Our sample consisted of all Malaysian firms that were listed in the main board of Bursa Malaysia from 2012 to 2017 which consisted of 667 firms. Thus, the sample included 4,002 firm-year observations over the period of 2012–2017. We started with the year 2012 since during that year, the MCCG recommended firms to establish a clear framework on risk management. We excluded 2,838 observations due to missing data in calculating F-score as our dependent variable. We also excluded 89 observations due to non-disclosure of risk management (the companies do not disclose anything about risk management) and 361 observations due to non-disclosure of risk management committees. Finally, we excluded 163 and 294 observations due to missing data of control variables and outliers, respectively, which yielded a final sample of 257 observations. Even though the exclusion of these non-disclosures and missing data led to small sample size, the exclusion is important in order to allow the investigation to capture unique characteristics of firms that have high probability of fraudulent financial reporting with the same firm and corporate governance characteristics. The distribution of observations is presented in Table 1 (available online at: https://docs.google.com/document/d/1ZffaPyczpuurWJqCNYRhLp2WdYDnE2K1?rtpof=true&authuser=marzianamarzuki%40gmail.com&usp=drive_fs).

3.2 Data collection and variable measurements

3.2.1 Dependent variable. This study's dependent variable is potential fraudulent financial reporting model as measured by Dechow F-Score and developed by Dechow *et al.* (2011). Dechow *et al.*'s (2011) model is a fraud risk assessment tool used to generate an output known as "F-score" which indicates the possibility of fraudulent financial reporting. The details of F-Score model are outlined in Appendix 1 (available online at: https://docs.google.com/document/d/1ZffaPyczpuurWJqCNYRhLp2WdYDnE2K1?rtpof=true&authuser=marzianamarzuki%40gmail.com&usp=drive_fs).

3.2.2 Independent variable. Since MCCG 2012 requires firms to disclose risk management framework which is usually described as risk activities and MCCG 2017 requires firms to establish risk management committee, we use both risk management activities disclosure and risk management committees to be a proxy for risk management practices among the listed firms in Malaysia. The use of these two applications of MCCG 2012; 2017 is able to highlight whether risk management practices are significant in reducing the likelihood of fraud.

Following Abdullah *et al.* (2017), risk management activities are measured by using dummy variable 1 if firms conduct risk management activities such as conduct risk meeting, risk identification and risk assessment as well as risk monitoring, and 0 if otherwise. We also used dummy variables for risk management committee by using dummy variable 1 if firms establish RMC to assist their risk operation and activities, and 0 if otherwise. All the data are hand-collected from firms' annual reports from the years 2012–2017.

To produce a robust model for this study, we used several control variables which included board of directors' structure, financial and institutional variables that are related to Malaysian political-economic setting. The inclusion of control variables is made to provide a more robust result by taking into account the factors that might influence potential fraudulent financial reporting other than risk management. Table 2 (available online at: https://docs.google.com/document/d/1ZffaPyczpuurWJqCNYRhLp2WdYDnE2K1?rtpof=true&authuser=marzianamarzuki%40gmail.com&usp=drive_fs) provides operational definition of the variables used in this study.

3.3 Empirical model and data analysis

In order to test the relationship between potential of fraudulent financial reporting and risk management practices, we used the following model:

$$F\_SCORE_{it} = RISK\_ACTIVITIES_{it} + RISK\_COMM_{it} + Control\_variables_{it} + \epsilon$$

The data were analyzed using panel data analysis. Considering the cross-sectional time series effects, panel data analysis is a more appropriate method than pooled ordinary least squares (OLS), which ignores the panel structure of the data and treats observations as being serially uncorrelated for a given firm, with homoscedastic errors across firms and time periods.

4. Empirical findings

4.1 Descriptive analysis and correlation analysis

Table 3 (available online at: https://docs.google.com/document/d/1ZffaPyczpuurWJqCNYRhLp2WdYDnE2K1?rtpof=true&authuser=marzianamarzuki%40gmail.com&usp=drive_fs) presents descriptive statistics for the variables being used. Our analysis in Panel A reveals that 42.4% of our samples were involved in potential fraudulent financial reporting. About 96.9% of the firms implemented risk activities. Nevertheless, only 40.9% of the samples established risk management committee to operate their risk activities. The result highlighted that the percentage of firms which established risk management committee has increased as compared to the findings by Abdullah *et al.* (2017) as their finding indicated only 34.6% of Malaysian firms established risk management committee in 2011. A possible reason for having a lower risk management committee may be due to the reason that some firms allocate this function under the Audit Committee rather than establishing a separate risk management committee. Panel B of Table 3 tabulates the descriptive results for the control variables of board of directors' structures and expertise. The average board size among the sample was 8, and 50% of the board was mostly independent. In terms of expertise, 26.8% of the board was financially literate where most of them have accounting background while 73.2% had no accounting and finance background. Only 11.9% of the board in the samples were women directors which indicates that women representation on the board of directors in Malaysia is still low but below the 30% as required by the government. For financial indicator variables, the mean values (median) for leverage and revenue were 11.940 (12.055) and 13.396 (13.099). Meanwhile, the mean (median) for firm size was 13.770 (13.782). Panel D of Table 3 indicates that 28.8% of the samples were family-connected firms and 10.9% of the firms were politically-connected.

We also tabulated the correlation analysis for the variables used in this study. The result in Table 4 (available online at: https://docs.google.com/document/d/1ZffaPyczpuurWJqCNYRhLp2WdYDnE2K1?rtpof=true&authuser=marzianamarzuki%40gmail.com&usp=drive_fs) indicates that there is a negative and significant correlation between *F_SCORE* and *FAMILY_CONN* using both Pearson and Spearman correlation (−0.163, $p < 0.001$), which provided alignment effects that family-connected firms protect the firms' value and thus reduce potential fraudulent financial reporting. Nevertheless, there is an insignificant relationship between *F-SCORE* and risk variables which is referred to as *RISK_*

ACTIVITIES and *RISK_COMM*. The correlation between *F_SCORE* and other control variables is also insignificant. In terms of risk management practices, the result indicates that family firms have less risk activities and it is significant for both ordinary and Spearman correlations (-0.232, $p < 0.001$). A larger board and firm size have a larger risk management committee. A larger risk management committee consists of more non-accounting expertise, produces more revenue and at the same time, more leverage. The results are all significant when using both ordinary and Spearman correlations. Overall, the correlations between variables suggest that there is no serious multicollinearity issue. We also ran Variation Inflation Factor (VIF) to evaluate the problem of multicollinearity. The result of VIF indicated that all the values of the variables are below 10; indicating that multicollinearity is not likely a serious problem in this study.

4.2 Multivariate analysis

Table 5 (available online at: https://docs.google.com/document/d/1ZffaPyczpuurWJqCNYRhLp2WdYDnE2K1?rtpof=true&authuser=marzianamarzuki%40gmail.com&usp=drive_fs) reports the regression results for the effect of risk activities, risk management committee and control variables on F_SCORE_{it}. We present models 1 to 4 to show the effect of each variable on the potential fraudulent financial reporting as measured by *F_SCORE*. The obtained p-value for likelihood ratio statistic (LR statistic) showed that the significance of model is less than 0.05. Therefore, the null hypothesis is rejected, and this shows the regression model is totally significant. The result for the LR statistic is robust and significant as we added more control variables. Our final model (model 4) indicated that there is a significant and negative relationship between $RISK\_ACTIVITIES_{it}$ *and* F_SCORE_{it} (-0.847, $z = -1.739$, $p < 0.10$). This finding supported the notion that risky activities can reduce potential fraudulent financial reporting. The result is consistent with the roles of firms' risk management which are generally to protect, create and enhance shareholders' value (KPMG, 2014). The activities of firms in managing risks help the firms to identify, assess and control risks; thus, assist the managers to gain a better understanding of firm processes (Johnsone and Soileau, 2020). As a result, firms can prevent any risks of financial misstatements and the possibility of fraud cases. Nevertheless, the result for the risk management committee is insignificant for this regression. We provide several possible reasons for the insignificant result. First, the result of descriptive statistics have shown that the establishment of risk management committee among Malaysian listed firms is still low. Second, the insignificant result highlights the insignificant role of risk management committee since some firms combine the role of risk management committee with audit committee. The result is consistent with the findings of Adedayo *et al.* (2019) which found that by having a chief risk officer or independent risk management committee alone cannot reduce discretionary accruals. For control variables, the result indicated that a highly independent board can reduce the potential of fraudulent financial reporting (-0.014, $z = -1.932$, $p < 0.10$). The result is consistent with the findings of Adedayo *et al.* (2019) which found that having a chief risk officer or independent risk management committee alone cannot reduce discretionary accruals. Consistent with the correlation and univariate analysis, the regression analysis result supported that there is a significant negative relationship between FAM_CONN_{it} and F_SCORE_{it} (-0.416, $z = -1.968$, $p < 0.05$). The finding provided support that family-connected firms have a lower likelihood of fraud, supporting the alignment effect of having family firms with the firms' value. For financial indicators, the results of main regression found evidence that a larger firm size has a higher potential fraudulent financial reporting (0.236, $z = 1.889$, $p < 0.10$). In addition, having a larger revenue can reduce the tendency of firms to be involved in potential fraudulent financial reporting (-0.256, $z = -2.306$, $p < 0.05$).

4.3 Robustness test

Following Tarjo *et al.* (2023), we have also performed robustness test using the actual values of F-score for robustness test. The result of our ordinary least squares regression is consistent with our multivariate analysis which indicates there is significant negative relationship between potential fraudulent financial reporting and risk activities ((-0.317, $z = -1.719$, $p < 0.10$). Meanwhile, there is insignificant relationship between potential fraudulent financial reporting and risk management committee.

5. Conclusion

Based on a sample of 257 listed firms, we examined the association between risk management practices and potential fraudulent financial reporting in Malaysia. We focused on risk management practices due to recent regulatory reforms by the Malaysian government on the Guidelines for Risk Management and Internal Control. The reform was made by the government since the risk management system is promoted as a mechanism to help firms to proactively manage risk and perform monitoring in a continuous and conscious way to ensure that the strategic objectives are achieved. Despite the recent reforms made by the Malaysian government, research on the effect of firm's risk management practices is relatively scarce. Thus, this study fills the gap.

Our findings indicate that risk management practices as measured by risk management activities in the disclosure can reduce the potential of fraudulent financial reporting. The result supports the role of risk management activities in managing firms' risks, reducing firms' operational risks such as losses and hence reducing the potential of fraudulent financial reporting. Nevertheless, the result indicates that having a risk management committee has an insignificant effect on the likelihood of fraud. The result may be due to the lower rate of firms that establishes risk management committees. The combination role of risk management committee with audit committee by some firms might also lessen the efficiency of risk management committee and thus have insignificant role in managing risks. Our results provide implications to regulators as to have severe enforcement on the implementation of systematic risk management system. In addition, the government should make it mandatory for the companies to establish risk management committee in separation with other committees. The establishment of this committee is important in order to have well-trained and well-versed committees in identifying and managing risk which at the end can mitigate unexpected events such as fraud.

Our result also supports that family firms face less potential fraudulent financial reporting due to the alignment effects of these firms in reducing Type I agency conflicts between owners and managers; thus, reducing managers' incentives to report accounting information that deviates from the underlying firm's economic performance. The result for other control variables indicates that firms involved in potential fraudulent financial reporting are characterized as large firms and have less revenue. Furthermore, this study provides caution to regulators that having more accounting expertise can lead to potential fraudulent financial reporting as they might use their expertise to falsify accounting information.

This study has some limitations. First, the study was only limited to firms that have complete data to calculate F-score as the score requires a lot of financial variables to be included. We considered the possibility of selection bias as a potential limitation of using F-score as measurement of fraudulent financial reporting (FFR). F-score may reflect a specific type of FFR and if so, the measurements may not produce a representative sample of fraudulent financial reporting. Despite the limitation, previous study has shown its strength as the measurement of fraudulent financial reporting. Based on the recent study by Aghghaleh *et al.* (2016), their findings showed that both Beneish M-score and Dechow F-score are relevant in predicting fraudulent financial reporting. However, based on the comparison of their results, they indicated that Dechow F-score is more precise in predicting fraud in the financial statement. Second, this study only focused on the disclosure of risk management practices and the existence of risk management committee. It did not take into consideration the different characteristics of risk management committee such as its meetings, expertise, ethnicity and gender. Future research may extend the research by incorporating different characteristics of risk management committee and the level of risk disclosure in determining the effect of risk management.

Note

1. The theory is defined as a contractual relationship of two or more parties, in which one party, designated as the principal, engages another party, designated as the agent, to perform some forms of services on behalf of the principal (Ross, 1973; Jensen and Meckling, 1976). In return for his or her efforts, the agent is usually given some payment from the principal.

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