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# AUDIT COMMITTEE CHARACTERISTICS AND RISK MANAGEMENT OF MALAYSIAN LISTED FIRMS

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## Abstract

*This study explores the association between audit committee characteristics and the establishment of a risk management committee by Malaysian listed firms. The study predicts that firms with more independent, expert, and diligent audit committees are likely to establish a stand-alone risk management committee. It is also expected that audit committees with more members are also likely to support the establishment of a risk management committee. The study employs a cross-sectional analysis of 690 firms listed on the Bursa Malaysia for the financial year ending in 2003. A logistic regression analysis is used to estimate the relationships proposed in the hypotheses. The study finds a strong support for an association between the establishment of risk management committee and audit committee independence, audit committee size, and audit committee diligence. The results also show that the establishment of a risk management committee is positively and significantly associated with firm-specific variables such as firm size, complexity of a firm's operations, and the use of Big Four audit firms.*

**Keywords:** *audit committee, corporate governance, risk management, internal control.*

## Introduction

Heightened awareness of risk management, in recent years, has been largely due to many recent corporate disasters and unexpected business failures (Walker, Shenkir, and Barton, 2002). Investors are becoming alert to the importance of sources of risk and uncertainty. Company directors, as a result, have been required to report their internal control mechanisms to mitigate various

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risks faced by their companies. In 2004, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) (2004) issued its *Enterprise Risk Management – Integrated Framework* that provides a model of the enterprise risk management (ERM) process. The COSO framework views ERM as an on-going, systematic process that involves board and senior management understanding future events that can strategically affect the organization.

Risk management has also become more of a focus for committees of the board. The audit, finance, or risk management committee of the board generally considers risk management. Recent literature indicates that audit committees are becoming increasingly involved in risk management but there are doubts about the robustness of the challenge that audit committees can offer to risk management effectiveness. For instance, Zaman (2001) suggests that it is unreasonable to expect audit committees to perform more than high level reviews given their lack of expertise and time, especially following the additional responsibilities imposed upon them by the various codes on corporate governance (e.g., Combined Code, FRC, 2006; Malaysian Code on Corporate Governance, SC, 2007) and legislative reforms (e.g., Sarbane-Oxley Act, 2002) [1]. IIA (2004) emphasizes the separation of internal audit from risk management process, but the requirement for internal auditors to comment on the appropriateness of risk management leads internal auditors to new territory. This implies a depth understanding of some internal audit function may not possess (Fraser and Henry, 2004) [2]. New requirements, for instance, from stock exchanges and reporting standards bodies, also place additional responsibility on the board of directors and audit committees to implement strong internal control processes, which often includes a more proactive and continuous process that assesses, sources, measures, and manages risk across the firm. Consequently, firms gradually shift their corporate governance focus from legal and regulatory compliance to broader-based business risks (Power, 2000). The preceding discussion, therefore, supports the call for a stand-alone risk management function to help strengthen the internal control system of a firm.

Despite the heightened awareness of risk management and interest in risk management, little research has been conducted on the topic (Liebenberg and Hoyt, 2003). This is especially true in accounting and corporate governance literature (Beasley, Clune, and Hermanson, 2005). The lack of research is largely due to the lack of meaningful data on risk management practices (Tufano, 1996). The dearth of research in risk management and corporate governance, in general, motivates this study to explore factors that are likely to lead to the establishment of a risk management committee as one of the board committees by boards of directors of Malaysian listed firms. Specifically, the study examines whether the establishment of a risk management committee is associated with audit committee characteristics. An audit committee that has more members and more independent, expert and diligent is likely to support the board of directors to establish a stand-alone risk management committee, thus demonstrating its commitment to improving overall governance environment of a firm.

This study makes an important contribution to risk management and audit committee literature. The study not only explores the factors associated with the establishment of a risk management committee but it also provides insights into the characteristics of audit

committees of Malaysian listed firms. The study is undertaken in institutional environment where firms are required to form an audit committee and disclose internal control compliance while no similar requirements are imposed concerning the establishment of other board committees such as risk management committees to solely focus on risk management and mitigation activities.

The remainder of the paper proceeds as follows. The next section briefly explains the Malaysian corporate governance environment. This is followed by a section on the theoretical background of the study and the development of the hypotheses. The third section describes the data and the research method employed. The results of the study are reported in the fourth section while in the final section, conclusions are drawn and the implications and future research are discussed.

## **Malaysian Corporate Governance Environment**

Besides statutory legislations, the Securities Commission of Malaysia (SC) has issued various non-legislative rules. One of the most important and comprehensive self-administered and non-legislative regulation that applies to all public listed companies (PLCs) is the Bursa Malaysia Listing Requirements (formerly known as the KLSE Listing Requirements) [3]. The Listing Requirements underwent a comprehensive revamp and the new version, known as the KLSE Revamped Listing Requirements were released in January 2001. Specifically, the Revamp Listing Requirements incorporates a significant component of the recommendations contained in the Finance Committee on Corporate Governance Report (FCCG, 1999), particularly the Malaysian Code on Corporate Governance (MCCG). The Revamped Listing Requirements of Bursa Malaysia in 2001 mandate all listed firms to disclose their compliance with the MCCG in the annual reports.

Other than the audit committee which has been mandated since 1993, the Malaysian Code on Corporate Governance also recommends that the board of directors establish remuneration and nomination committees. The establishment of other committees such as a risk management committee and a corporate governance committee is also recommended but these committees are less frequently set up by listed firms. The Malaysian Code on Corporate Governance also states as principle that the board of directors should maintain a sound system of internal control. In May 2000, the Bursa Malaysia issued "*A Guidance on Internal Control*". This guideline explains the key areas that directors must pay attention to before they make *A Statement of Internal Control* in their companies' annual reports. The guideline emphasizes the need for proper risk management which is a critical element of a sound system of internal control. In making the *Internal Control Statement*, a listed firm is required to address issues related to internal controls as recommended by the Principle and Best Practices in the Malaysian Code on Corporate Governance. The recommendations include that the board of directors should: i) maintain a sound system of internal control to protect shareholders' investment and the firm's assets, ii) identify principal risks and ensure the implementation of appropriate system to manage risk, and iii) review adequacy and the integrity of the firm's internal control systems.

While significant improvement has been achieved, the Malaysian Code on Corporate Governance was revised in 2007 (Securities Commission, 2007). The revision was made to improve the quality of the boards of listed firms by putting in place criteria for qualification of directors and strengthening the audit committees as well as the internal audit functions of listed firms. In the revised Code, audit committees can no longer be comprised of executive directors and the internal audit function is mandated for all listed firms.

## **Theoretical Background and Research Hypotheses**

Consistent with the risk-based approach, a firm that establishes a risk management committee as one of the board committees demonstrates a greater awareness of the importance of risk management and control (Committee of Sponsoring Organizations of the Treadway Commission (COSO), 1992 and 2004; Hermanson, 2003; Selim and McNamee, 1999). Risk management activities of a firm are also closely monitored by its audit committee. The primary task of the audit committee is to oversee the firm's financial performance and ensure the reliability of its financial reporting. Periodic review of the firm's risk management and mitigation system and the managerial actions used to manage its risk is critical towards fulfilling this task. Hence, in the context of good corporate governance practices, characteristics contributing to audit committee effectiveness are likely to be positively associated with the establishment of a risk management committee.

The characteristic most frequently cited in the existing literature and corporate governance guidelines as a prerequisite to an effective audit committee monitoring is independence. The assertion that audit committees be composed of non-employee directors assumes that independent outside members are better monitors of management (Sarbane-Oxley Act, 2002; Blue Ribbon Committee, 1999). The Listing Requirements of Bursa Malaysia also mandates that audit committees of listed firms be comprised of at least three members and the majority of whom must be independent members. This view is consistent with the agency perspective, in that, independent audit committees provide greater monitoring of managerial discretions including risk-taking activities by managers. In addition, independent audit committee members are likely to view their service on an audit committee as a means of enhancing their reputational capital (Fama and Jensen, 1983a; Gilson, 1990). The preservation of reputational capital serves as a motivation for higher quality monitoring. It is, therefore, expected that an independent audit committee provides effective monitoring and helps strengthen internal controls. Thus, consistent with a risk-based approach, an independent audit committee is likely to support the establishment of a risk management committee because it is beneficial and useful to audit committee, for instance, in reviewing the firm's risk assessment system. The preceding argument leads to the first hypothesis which tests the assertion that a more independent audit committee is likely to set up a risk management committee.

H1: The establishment of a risk management committee is positively associated with the proportion of non-executive directors on audit committees.

The new rules set by Sarbane-Oxley Act 2002 require the presence of at least one financially knowledgeable director on the audit committee while the New York Stock

Exchange (NYSE) listed company manual also requires that all members of the audit committee be financially knowledgeable. The Listing Requirements of Bursa Malaysia also mandates that at least one audit committee member must be a member of the Malaysian Institute of Accountants. Audit committee members with financial and accounting knowledge expertise allows for a better understanding of auditing issues and risks, as well as the audit procedures proposed to address and detect these issues and risks (DeZoort and Salterio, 2001). Because the audit committee members with financial backgrounds have the experience and training to understand the risk management activities, it is expected that firms with at least one financially knowledgeable director on their audit committees to engage more actively in risk management process. Therefore, the preceding argument generates the following hypothesis:

H2: The establishment of a risk management committee is positively associated with the proportion of audit committee members with accounting and finance qualifications.

In addition to imposing the presence of independent and financially knowledgeable directors on audit committee, the NYSE's listed company manual requires that audit committee be composed of at least three members. Similarly, the Listing Requirements of Bursa Malaysia also impose that audit committees of its listed companies be comprised of at least three members. This rule is likely motivated by the desire to encourage firms to devote significant director resources to their audit committees. The audit committee size recommendation is also consistent with the desire to increase the organizational status of the audit committee (Braiotta, 2000). Hence, it is expected that larger audit committees are likely to support the establishment of a risk management committee as this will enhance their oversight responsibility. The following hypothesis is therefore tested:

H3: The establishment of a risk management committee is positively associated with audit committees that have more members.

A number of studies and governance practice guidelines also call for audit committees to be diligent in carrying out their duties (Beasley, Carcello, and Hermanson, 1999; Horton et al., 2000; Blue Ribbon Committee, 1999). Generally, studies on audit committees use the number of audit committee meetings held annually as a proxy for audit committee diligence. Prior research also suggests that an audit committee that meets frequently can reduce the incident of financial reporting problems. By meeting frequently, for instance, with external auditors and managers, the audit committee remains informed and knowledgeable about accounting and risk management issues, and is likely to address difficult accounting and auditing issues effectively (Raghunandan, Rama, and Scarbrough, 1998). The collaboration between the audit committee and management is likely to result in developing a risk management approach to provide a steady stream of information to the firm's decision makers. Management and audit committees have increased their oversight diligence under the Sarbane-Oxley (SOX) regime. Recent studies and reports on audit committee behavior show that audit committees of US listed firms are meeting more frequently, getting better information on the state of internal control and asking better questions, suggesting an increase in oversight duties of audit committees in recent years (Leech, 2005). Therefore, an audit committee that demonstrates a greater diligence in discharging its oversight responsibilities is likely to enhance the level of oversight of the risk management activities.

As such, it is expected that more diligent audit committees are likely to support the establishment of a risk management committee. The discussion above leads to the following hypothesis:

H4: The establishment of a risk management committee is positively associated with audit committee diligence.

## **Data, Variables, and Empirical Method**

### **Data Collection**

The sample comprises the Bursa Malaysia non-financial public listed companies whose annual reports are available in 2003 [4]. The firms in the sample are either listed on the Main Board or the Second Board of the Bursa Malaysia. The Main Board companies have a minimum paid-up capital of RM60 million while the Second Board companies are those that have a minimum paid-up capital of RM40 million. Both the financial data and corporate data of these firms are obtained from their annual reports. A total of 690 firms that meet the selection criteria are included in the study.

### **Variables**

The study tests four hypotheses using a logistic regression model, with the dependent variable coded as “1” if a firm has a stand-alone risk management committee, “0” if otherwise. The hypothesized variables used in the study are audit committee independence, audit committee expertise, audit committee size, and audit committee diligence. Audit committee independence and audit committee expertise are measured as the percentage of non-executive directors on boards and the percentage of audit committee members with finance and accounting qualifications respectively. While the number of audit committee members on audit committees and the number of audit committee meetings held during the financial year measure audit committee size and audit committee diligence.

The study also incorporates several control variables found by related literature that may influence the likelihood of firms establishing a risk management committee. It is expected that the establishment of a risk management committee to be positively associated with firm size, complexity of a firm’s operations and decentralized business segments, firm leverage, and the use of Big Four audit firms. Wallace and Kreutzfeldt (1991) identify firm size as one of the firm characteristics that could influence a firm’s decision to set up an internal control mechanism. Top management is more likely to lose direct control of the firm’s operations and risk-taking investments in large firms. Hence, firms listed on the Main Board of Bursa Malaysia are, therefore, more likely to set up a stand-alone risk management committee. As a proxy for firm size, the study uses a dummy variable of “1” if a firm is listed on the Main Board of Bursa Malaysia, and “0” if otherwise [5]. In addition, the complexity of a firm’s operations and decentralized business segments also may require a more effective risk management mechanism so that the management may benefit from clear and comparable details of risks that different divisions or business units face (Boswell, 2001). To control for the effect of a firm’s complexity, the square root of the

number of subsidiaries is used. The effect of leverage is also controlled in the analysis as the risks associated with a high level of leverage may require firms to evaluate risks on a firm-wide basis. Firms with a high level of leverage are likely to demonstrate their commitment to the existing debt holders and to their future creditors that they have a better disclosure of their firms' risk exposures (Liebenberg and Hoyt, 2003). Thus, the ratio of total debts to total assets is used to control for the effect of leverage. The study also includes dummy variable for Big Four audit firms to control for differences in audit quality. The Big Four audit firms may be more likely to ensure transparency and eliminate mistakes in a firm's financial statements because they have a greater reputation to uphold (Michaely and Shaw, 1995). It is also possible that firms committed to engaging high quality auditors are also more likely to be committed to a holistic risk management framework (Beasley, Clune, and Hermanson, 2005). As a result, a firm whose auditor is one of the Big Four audit firms is likely to set up a risk management committee to monitor operations and internal control of the firm more effectively. Finally, industry variations may influence firms to establish a risk management committee. Anecdotal evidence suggests that certain industries are more likely to adopt a holistic risk management approach than others. To control for industry variations, ten industry dummy variables according to sectors classified by the Bursa Malaysia are included in the model. The sectors are industrial products, consumer products, technology, construction, trade and services, properties, plantations, hotel, mining, and infrastructure companies [6].

### **Research Model**

The following regression model is used to examine the association between the establishment of a risk management committee and audit committee characteristics. The hypothesized variables and control variables are described in Figure 1.

$$\text{RMC} = b_0 + b_1 \text{Firm Size} + b_2 \text{Complexity} + b_3 \text{Leverage} + b_4 \text{Big Four} + b_5 \text{Industry Dummies} + b_6 \text{AC Independence} + b_7 \text{AC Expertise} + b_8 \text{AC Size} + b_9 \text{AC Diligence} + e$$

## **Results**

### **Descriptive Statistics and Correlations**

Table 1 provides descriptive statistics for the variables used in the model and Table 2 reports correlation [7]. Panel B of Table 1 shows that only 246 firms (about 36 percent) in the sample establish a risk management committee [8]. Panel B also shows that 69 percent of the firms' financial statements are audited by the Big Four audit firms. The majority of firms in the sample (470 firms) are listed on the Main Board of Bursa Malaysia.

Panel A indicates that total assets of firms in the sample range from RM4,982,000 to RM59,956,500,000 with a mean of RM1,222,170,918. The mean number of subsidiaries is 11.52 ranging from 0 to 290. Panel A also shows that the mean percentage of non-executive directors on the audit committee is 79 percent. The average number of directors on the audit committee with finance and accounting qualifications is about three directors while the average number of directors on the audit committee is three.



Variables		Descriptions
Dependent Variable	RMC	A dummy variable of “1” if a firm sets up a stand-alone risk management committee, “0” if otherwise.
	Firm Size	A dummy variable of “1” if a firm is listed on the Main Board of Bursa Malaysia, “0” if otherwise [5].
Independent Variables	Complexity	The square root of the number of subsidiaries.
	Leverage	The ratio of total debts to total assets.
	Big Four	A dummy variable of “1” if a firm’s auditor is a Big Four auditor, “0” if otherwise.
	Industry Dummies	A dummy variable of “1” if a firm is in industrial product sector, or in consumer product sector, or in construction sector, or in technology sector, or in trade and services sector, or in property sector, or in plantations sector, or in hotel sector, or in infrastructure companies sector, or in mining sector, “0” if otherwise.
	AC Independence	The percentage of non-executive directors on audit committees.
	AC Expertise	The percentage of audit committee members with finance and accounting qualifications.
	AC Size	The number of directors served on audit committees.
	AC Diligence	The number of meetings held by audit committees during the financial year.

Figure 1: Description of Explanatory Variables

Finally, on average, there are five audit committee meetings held during the financial year of 2003 (minimum of 1, maximum of 21).

### Multivariate Analysis

Table 3 reports the logistic regression model. This model shows factors that are associated with a firm’s decision to set up a risk management committee. The model is significant, with pseudo R-squares of 7.9 percent using Cox-Snell R-square and 10.9 percent using Nagelkerke R-square [9]. The regression results in Table 3 indicate that the establishment of a risk management committee is positively associated with firm size (p-value = 0.001) suggesting that firms listed on the Main Board of Bursa Malaysia (i.e., large firms with their paid-up capital of RM60 millions or more) are more likely to set up a stand-alone risk management committee [10]. It is expected that larger firms are more likely to adopt a more stringent and focused risk management mechanism due to the need for a comprehensive risk management strategy. This finding is consistent with findings previously documented by Colquitt, Hoyt, and Lee (1999) and Goodwin-Stewart and Kent (2006). Colquitt *et al.* (1999) find that firm size is significant in whether a firm uses integrated risk management tools. While Goodwin-Stewart and Kent (2006) suggest that a large diversified firm is more likely to rely on internal audit to ensure that the internal control system is adequate.

Table 1: Descriptive Statistics (N = 690)

Panel A: Continuous Variables						
Variables	Minimum	Maximum	Mean	Standard Deviation	Median	
Total assets (RM)	4,982,000	59,956,500,000	1,122,170,918.85	3,703,597,113.99	261,369,788.00	
Total debts (RM)	261,000	44,882,800,000	612,833,303.13	2,717,158,818.21	103,302,101.00	
Number of Subsidiaries	0	290	11.52	17.533	7.000	
AC Independence	0.250	1.000	0.789	0.150	0.750	
AC Expertise	0.167	1.000	0.461	0.199	0.333	
AC Size	2	7	3.51	0.723	3.000	
AC Diligence	1	21	4.90	1.417	5.000	
Panel B: Dichotomous Variables						
Variables	Yes	No	%	%		
Firms audited by Big Four Auditors	477	213	69.1	30.9		
Firms listed on Main Board	470	220	68.1	31.9		
Firms with Risk Management Committee	246	444	35.7	64.3		

This table provides summary statistics for the variables employed in the study. Total assets (RM) = Total assets in Ringgit Malaysia; Total debts (RM) = Total debts in Ringgit Malaysia; AC Independence = the percentage of non-executive directors on audit committees; AC Expertise = the percentage of audit committee members with finance and accounting qualifications; AC Size = the number of directors in audit committees; AC Diligence = the number of meetings held by audit committees during the financial year; Firms audited by Big Four Auditors = a dummy variable of "1" if a firm's financial statements are audited by Big Four audit firms, "0" if otherwise; Firms listed on Main Board = a dummy variable of "1" if a firm is listed on the Main Board of Bursa Malaysia, "0" if otherwise; Firms with Risk Management Committee = a dummy variable of "1" if a firm establishes a risk management committee as a stand-alone committee, "0" if otherwise.

Table 2: Correlation Matrix for Variables Used in the Study (N = 690 Firms)

Variables	1	2	3	4	5	6	7
1 Firm Size	1.000	0.141**	0.548**	0.248**	-0.094*	0.171**	0.238**
2 Leverage		1.000	0.157**	-0.047	-0.036	-0.070	0.112**
3 Complexity			1.000	0.064	-0.069	0.113**	0.200**
4 AC Independence				1.000	0.008	0.060	0.110**
5 AC Expertise					1.000	-0.181**	-0.033
6 AC Size						1.000	0.070
7 AC Diligence							1.000

\*\*Correlation is significant at the 0.01 level (two-tailed); \*Correlation is significant at the 0.05 level (two-tailed).

This table provides correlation matrices among the variables used in the study namely firm size, leverage, firm's complexity (subsidiaries), audit committee independence, audit committee expertise, audit committee size, and audit committee diligence. Firm Size is the natural logarithm of total assets; Leverage is the ratio of book value of long-term debts to total assets; firm's complexity (subsidiaries) is the square root of the number of subsidiaries; AC Independence is the percentage of non-executive directors on audit committees; AC Expertise is the percentage of audit committee members with finance and accounting qualifications; AC Size is the number of directors in audit committees; AC Diligence is the number of meetings held by audit committees during the financial year.

Table 3: Logistic Regression Results (Dependent Variable: Existence of a Risk Management Committee) (N = 690 Firms)

Variables	Expected Signs	Coefficients	Wald Statistics (p-value)
Intercept	?	-3.976	29.136 (0.000)*
Firm Size	+	0.658	10.935 (0.001)*
Complexity	+	0.138	6.941 (0.008)*
Leverage	+	0.045	0.014 (0.905)
Big Four	+	0.555	8.474 (0.004)*
AC Independence	+	1.001	3.208 (0.073)*
AC Expertise	+	0.032	0.006 (0.940)
AC Size	+	0.204	3.170 (0.075)*
AC Diligence	+	0.113	3.124 (0.077)*
<i>Cox-Snell R<sup>2</sup> (Nagelkerke R<sup>2</sup>)</i>		0.079 (0.109)	
<i>Hosmer-Lemeshow <math>\chi^2</math> (p-value)</i>		8.603 (0.377)	

Notes: \*One-tail test where direction is predicted, otherwise two-tail. Firm Size = a dummy variable of “1” if a firm is listed on the Main Board of Bursa Malaysia, “0” if otherwise; Complexity = square root of the number of subsidiaries; Leverage = the ratio of book value of long-term debts to total assets; Big Four = a dummy variable of “1” if a firm’s financial statements are audited by Big Four audit firms, “0” if otherwise; AC Independence = the percentage of non-executive directors on audit committees; AC Expertise = the percentage of audit committee members with finance and accounting qualifications; AC Size = the number of directors in audit committees; AC Diligence = the number of meetings held by audit committees during the financial year.

There is also a significant positive association between the establishment of a risk management committee and the complexity of a firm’s business operations (p-value = 0.004, one-tailed). The positive association suggests that larger firms and the complexity of firm’s operations require greater monitoring from a risk management committee which focuses primarily on identifying business risks and finds ways to mitigate these risks (Selim and McNamee, 1999; Spira, 2003). The results also show that there is no significant association between the establishment of a risk management committee and leverage. Firms whose financial statements are audited by the Big Four audit firms are likely to set up a risk management committee as indicated by a positive and significant association between the two variables (p-value = 0.002, one-tailed). One interpretation of this finding is that Big Four audit firms provide higher quality audits (DeAngelo, 1981). Further, Dopuch and Simunic (1980) suggest that credibility is associated with an auditor’s reputation or brand name, based on the observed dominance of large audit firms in the market for publicly-held firm auditors. Because Big Four auditors have a greater reputation to uphold, they are likely to require firms to have a sound internal control system, including the establishment of a risk management committee. Alternatively, it is also possible that firms engaging such high quality auditors are also more committed to risk management. The unreported results also show that the establishment of a risk management committee is not significantly related to all industry dummies [11].

Recall that Hypotheses 1 and 2 predict that more independent and expert audit committees are likely to set up a risk management committee. The results in Table 3 show that there is a significant positive association between the establishment of a risk management

committee and the percentage of non-executive directors on audit committees (p-value = 0.037, one-tailed). An independent audit committee is likely to encourage a proactive risk management process to reduce not only business and financial risks but also reputational risks faced by independent directors who sit on the audit committee. Independent audit committee directors are likely to view their service on an audit committee as a means of enhancing their reputational capital (Fama and Jensen, 1983a; Gilson, 1990). The preservation of reputational capital serves as one motivation for higher quality monitoring by independent audit committees. Thus, establishing a risk management committee helps strengthen a firm's internal control system and demonstrates an effort towards preserving their reputation as expert monitors.

The results also show that there is no support for Hypothesis 2 concerning an association between audit committee expertise and the establishment of a risk management committee. This may suggest that accounting and finance expertise possessed by audit committee members plays an insignificant role in setting up the risk management committee and the qualifications they have tend to be more useful in auditing and financial reporting matters. This finding also indicates that performing functions of a risk management committee does not require the knowledge of finance and accounting as this committee is mostly involved in identifying and mitigating risks associated with firm operations and businesses. This finding is somewhat consistent with that of Goodwin-Stewart and Kent (2006) in that they find a marginally significant association exists between audit committee expertise and the use of internal audit.

Table 3 also shows a significant positive association between the establishment of a risk management committee and audit committee size (p-value 0.038, one-tailed) and audit committee diligence (p-value = 0.039, one-tailed). This suggests that large audit committees are likely to enhance the quality of internal control, thus supporting the establishment of a risk management committee. Kalbers and Fogarty (1993) suggest that larger audit committees are legitimized by a meaningful organizational support from boards of directors and are thus more likely to be acknowledged as an authoritative body by external auditors as well as by internal audit functions of firms. With respect to positive significant association between the establishment of a risk management committee and audit committee diligence, this result suggests that meeting frequency is an important component of audit committee effectiveness (National Association of Corporate Directors (NACD), 2000). An audit committee that demonstrates greater diligence in discharging its responsibilities is likely to seek an enhanced level of oversight of, among others, business operations and risk management and control activities.

Overall, the results indicate that firm-specific variables that are commonly associated with risk management and internal control functions are positive and significantly associated with the establishment of a risk management committee. Of particular interest to the study are the audit committee characteristics. Firms that have independent, diligent, and larger audit committees are found to be more likely to set up a stand-alone risk management committee. This demonstrates that risk management links neatly to good corporate governance practices within a firm as evidenced by the positive and significant association between the establishment of a risk management committee and these three audit committee characteristics.

## **Conclusion, Limitations and Future Research**

This study provides an initial attempt to explore the association between the establishment of a risk management committee and audit committee characteristics of Malaysian listed firms. Hypotheses are developed based on the premise that firms that have more independent, expert, and diligent audit committees are likely to set up a stand-alone risk management committee. In addition, audit committees that have more members are also likely to form a risk management committee to help strengthen governance and internal control environment within their firms. The study finds that the establishment of a risk management committee is associated with strong audit committee structures. Specifically, the results show that firms with more independent audit committees are likely to set up a risk management committee partly because these independent directors seek to protect their reputations as expert monitors. Thus, establishing a risk management committee demonstrates their commitment to and awareness of improved internal control environment. Further, firms with more members on their audit committees are also likely to set up a risk management committee. Audit committees that meet more frequently are also likely to enhance level of oversight of risk management activities and processes. Thus, more diligent audit committees are likely to support formal risk management procedures including an establishment of a risk management committee.

While the study makes an important contribution to the governance and internal control debates, there are a number of limitations inherent in this study. One of the limitations is that in addition to archival data, data gathered using survey methods are likely to provide more meaningful insights to findings of the study. Some of the variables used in the model may not be good proxies for factors the study measures. For instance, the percentage of non-executive directors on audit committees may not be a good measure of “true” audit committee independence as these are “grey” directors. Further, board characteristics are not considered in this study. Board independence, for instance, is likely to contribute to a sound internal control system and risk management process as a risk management committee is one of board committees. Finally, this study employs cross-sectional data of the financial year 2003. It is likely that the establishment of a risk management committee by Malaysian listed firms has increased [4, 8]. Recent corporate governance scandals have significantly increased expectations about the roles of corporate governance participants including regulators and local and international investors. Some of these expectations relate to calls for expanded risk management activities. Finally, the results of the study are subject to a caveat and therefore, should be cautiously interpreted. There is a growing evidence that corporate governance structures may be jointly determined partially by unobservable variables such as past performance, risks, and the stage of business cycles (see for instance studies by Hermalin and Weisbach, 1998 and 2003; Bhagat and Black, 2002; and Adams and Ferreira, 2007 for a comprehensive discussion related to endogeneity problems and econometric approaches dealing with them in corporate governance research). Consequently, studies that do not control for possible endogeneity are likely to limit the validity of empirical testing of models. This study, therefore, may suffer from endogeneity problems as it does not control for the extent to which endogeneity may be present in the model the study employs. The existing research in corporate governance cannot yet offer a comprehensive system of well-specified audit committee design equations.

These limitations could be overcome in future research. Research methods such as interviews and surveys may be complementary to the archival data method and are likely to help explain why firms choose to set up a risk management committee. The role of holistic risk management process and the changing paradigm of internal auditing are relatively unexplored and there is a need for future research on this issue. Another issue warranting further analysis is the status of a risk management committee within the firm, and the role of the committee plays in corporate governance and its interaction with the audit committee. Finally, risk management has become a managerial concern and the committee members are mostly from management, thus its independence and objectives may be questioned. Issues with regards to internal control status and risk management process may not be adequately addressed by firm management and the board of directors may not get a clear picture of management's risk appetites and risk-taking behaviors. A future study may examine the independence of the risk management committee and how the board and the audit committee may have to step up their oversight efforts to avoid managerial manipulations. Finally, future research needs to address endogeneity problems that may arise due to unobservable variables that are likely to jointly determine the outcomes of chosen corporate governance mechanisms adopted by firms.

## Notes

- 1 Turnbull Report (1999) suggests that responsibility for risk management could be delegated to the audit committee and in many organizations, internal audit reports directly to the audit committee on risk management. However, if the expertise of both internal auditors and audit committee members lies in financial matters, there is a possibility that only a limited range of risks will be addressed.
- 2 Malaysian companies without a stand-alone risk management committee report that the oversight of their risk management and control activities is embedded in the internal audit functions (IAF) which report to their audit committees on the state of their internal controls. A survey of 380 publicly-listed Malaysian firms by the Institute of Internal Auditors Malaysia also reveals that 58 percent of these firms have their own internal audit function (IAF) (IIA Malaysia, 2003).
- 3 The Kuala Lumpur Stock Exchange (KLSE) became demutualized exchange and was renamed Bursa Malaysia in April 2004.
- 4 The concern of outdated data used in this study is understandably valid. Nevertheless, the data are important and relevant to the context of the study. Irrespective of the period of the study used, little has changed with respect to the corporate governance environment in Malaysia since the incorporation of the Malaysian Code on Corporate Governance (MCCG) into the Listing Requirements of Bursa Malaysia in 2001. In 2007, the Code was revised and some significant amendments with regard to audit committee and internal control requirements include: i) audit committees can no longer be comprised of executive directors and ii) the internal audit function is mandated for all listed firms. In addition to various existing mandated corporate governance disclosures, all listed firms are now required to make a statement in their annual reports on the CSR activities undertaken during a financial year starting from financial year end 2008. I examined the most recent annual reports

(i.e., financial years of 2007 and 2008) and corporate governance disclosures of the sample firms used in the study. The audit committee variables used in this study such as audit committee independence, audit committee expertise, audit committee size, and audit committee diligence remain qualitatively and statistically similar to those reported in 2003. The only noticeable change is the increase in the number of firms setting up the risk management committee. The current study finds that 246 firms out of 690 firms have established the committee as a stand-alone committee. There are 43 firms in the sample which previously did not have a stand-alone risk management committee have recently established the committee.

- 5 The natural log of total assets is also used as a measure of firm size.
- 6 This study excludes firms related to financial industries such as banks and insurance companies due to their unique characteristics and different compliance and regulatory environment. Other studies such as Beasley, Clune and Hermanson (2005) include banks and insurance companies in the sample due to explicit calls from industry regulators and leaders for more effective risk management.
- 7 The study performs a number of diagnostics on the results reported in Table 1, 2, and 3 including investigation of outliers for both control and audit committee variables. The variables with univariate outliers include firm size, leverage, firm's complexity (subsidiaries), and frequency of audit committee meetings. To test whether the outliers alter the results, the outlying observations whose standardized  $z$ -scores exceed  $\pm 3$  are excluded and the model is re-run. The unreported results are qualitatively similar, and quantitatively unchanged as those reported in the tables. Standard diagnostic tests indicate that multicollinearity is not a serious problem.
- 8 As mentioned in Note 4, there are 43 firms in the sample which previously did not have a stand-alone risk management committee have recently established the committee.
- 9 For the Hosmer-Lemeshow Goodness of Fit Test, a good fit is indicated by a significant value greater than 0.05.
- 10 The unreported results also shows that there exists a positive and significant association between the establishment of a risk management committee and the natural log of total assets (i.e., firm size) (coefficient = 0.375; Wald statistic = 21.317;  $p$ -value = 0.000).
- 11 In order to have a parsimonious model and also due to their non-significant associations with the likelihood of the establishment of a risk management committee, the industry dummy variables are excluded and the model is re-run. The results remain qualitatively and statistically unchanged after excluding the industry variables from the model.

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