VOLUNTARY DECISIONS ON AUDIT COMMITTEE COMPOSITION AND EXPERTISE AND THE INFLUENCE OF BOARD OF DIRECTOR CHARACTERISTICS: FURTHER EVIDENCE FROM SINGAPORE

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Abstract

Our study empirically examines the association between four board of director characteristics and two audit committee dimensions. The audit committee dimensions are the level to which Singapore publicly listed firms voluntarily (1) include more independent directors on their audit committee beyond the mandatory minimum majority of independent directors and (2) improve the collective knowledge and experience of this standing committee by including suitably qualified independent directors. Our analysis is based on hand collected data from 430 domestically incorporated firms listed on the Singapore Stock Exchange (SGX) at the end of 2003. We find Singapore publicly traded firms are likely to voluntarily include more independent directors on their audit committees beyond the mandated minimum majority when (1) the size of the board of directors increases, (2) firms segregate the positions of Chief Executive Officer (CEO) and Chairperson of the board, and (3) the proportion of independent directors serving on the board of directors increases. The percentage of independent directors with directorate interlocks appears not to influence a firm's decision to voluntarily include more independent directors on their audit committees. We also find a statistically significant association between (1) duality (negative) and (2) percentage of independent directors with directorate interlocks (positive) and propensity for Singapore firms to voluntarily increase the collective knowledge and experience of the audit committee's independent directors. Contrary to expectations board size and the proportion of independent directors are not significant determinants.

Keywords: Audit committees; board of director characteristics; audit committee composition; Singapore

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1. Introduction

The primary objective of our study is to provide further empirical evidence within an alternative institutional and cultural domestic setting of the influence of board characteristics on a firm's voluntary decision to establish a more independent and qualified audit committee. Academic scholars and corporate governance reform advocates recognize the importance of audit committees (e.g., Pincus et al., 1989; Cadbury, 1992; Dey, 1994; King, 1994; Beasley, 1996; Klein, 1998). Bradbury (1990) argues audit committees can increase the credibility of the financial reporting process by effectively monitoring the internal and external audit functions. Similarly, the Securities Exchange Commission (SEC) (1999, p.1) suggest audit committees "play a critical role in the financial reporting system by overseeing and monitoring management's and the independent auditors' participation in the financial reporting process…Audit committees can, and should, be the corporate participant best able to perform that oversight function." In recent years the audit committee's functioning has come under intense scrutiny and criticism (Levitt, 1998; Klein, 2002a, 2002b). Audit committees have been accused of failing in their responsibilities because their independence is impaired and members' expertise in financial accounting matters is limited (Abbott et al., 2003). In response this criticism corporate governance reform committees and institutional bodies have sought to strengthen rules governing the composition of an audit committee to improve independence, and knowledge and experience to increase its monitoring effectiveness. The NYSE and NASDAQ, for example, modified listing requirements whereby firms are required to maintain audit committees with at least three directors, "all of whom have no relationship to the company that may interfere with the exercise of their independence from management and the company" (NYSE Listed Company Manual, Section 303.01[B][2][a]). Further, at least one member of the audit committee must have accounting or related financial management expertise in accordance to the business judgment of the board of directors (NYSE Listed Company Manual, Section 303.01[B][2][c]).

Whilst corporate governance reformists and policymakers have sought to strengthen regulation governing audit committee composition in an effort to increase this standing committee's independence, and knowledge and experience with the goal of increasing monitoring effective, firms still have considerable discretion. Recent seminal empirical work by Beasley and Salterio (2001) and Klein (2002a, 2002b) seeks to identify factors influencing a firm's voluntarily response to policymakers and corporate governance reformists to improve the monitoring effectiveness of the audit committee. Board of directors characteristics have been a primary focus of this research. Whilst providing valuable insights, there is some question the empirical results of Beasley and Salterio (2001) and Klein (2002a, 2002b), that drew solely on data only from North America, can be generalized to extend across national boundaries. A growing band of international corporate governance research indicates a nation's regulatory and economic environment, capital market strength, institution structure and corporate governance practices varies across national boundaries. As a result, it argued the importance, value and impact of various corporate governance structures should be examined separately in each nation (Vafeas and Theodorou, 1998). Drawing primarily on the framework of Beasley and Salterio (2001), we empirically examines the association between board characteristics and level to which Singapore publicly listed firms (1) voluntarily include more independent directors on their audit committee above the mandatory minimum majority and (2) incorporate greater a greater collective knowledge and experience of independent directors within the audit committee. As with Beasley and Salterio (2001), the present study examined the influence of board size, leadership structure (duality) and proportion of independent directors on the two aforementioned audit committee dimensions. In addition, the present study also examines for the influence of the percentage of independent directors on a firm's board of directors holding directorships in another firm.

We focus on Singapore publicly traded firms for several reasons. First, audit committees are a long established feature of Singapore firms' corporate governance structure. New requirements embedded in the Singapore Code of Corporate Governance (2001) (The Code) serve to reinforce this importance particularly the committee's independence and member expertise. Second, virtually all of the economically significant Singapore firms can be analyzed. Finally, Singapore's corporate governance system is limply based on the Anglo-American system but the socio-political and economic environment is quite different. Consequently, our study allows a comparative analysis of generalizability possibilities of limited research results using based only Anglo-American data.

We hand collected data for the analysis from 430 Singapore firms. We find firms are likely to voluntarily include more independent directors on their audit committees beyond the mandated minimum majority if the: (1) the size of the board of directors increases; (2) firms segregate the position of Chief Executive Officer (CEO) from that of Chairperson of the board; and (3) the proportion of independent directors serving on the board of directors increases. These findings are consistent with Beasley and Salterio (2001). We find no statistically significant association between the percentage of independent directors with directorate interlocks and the voluntarily inclusion of more independent directors on audit committees above Singapore's mandatory minimum requirement. Empirical findings also indicate a statistically significant association between duality (negative) and percentage of independent directors with directorate interlocks (positive) and propensity for Singapore firms to voluntarily increase the audit committee's collective knowledge and experience amongst its independent directors. Contrary to expectations board size and proportion of independent directors is not significantly associated with the inclusion of more members on the audit committee with financial and accounting expertise.

The remainder of the study is as follows. Section II briefly reviews Singapore's audit committee environment and develops the testable hypotheses. Section III describes the research method. Empirical results are described in Section IV, followed in Section V by the summary major conclusions and contributions of our study.

2. Audit Committees in Singapore and Hypothesis Development

Background

Audit committees have been a major feature of the corporate governance structure of Singapore firms for several decades (Phan and Mak, 1999; Mak and Phan, 2001). Under the Companies Act of 1990, all listed firms in Singapore are required to have an audit committee. Singapore Stock Exchange (SGX) listing requirements also have long stipulated the need for an audit committee to be listed. Consistent with various corporate governance reform efforts (e.g., Blue Ribbon Committee, 1999; Cadbury, 1992; King, 1994, 2002) the composition of the audit committee is embedded in legislation and institutional requirements in Singapore. The Companies Act of 1990, for example, required the audit committee to comprise a minimum of three members, the majority of whom being independent of management. Under the Companies Act of 1990 the audit committee Chairperson must have been a non-executive director. SGX Listing Manual requirements and Best Practice Guide (BPG) recommendations follow Companies Act of 1990 rules though the Chairperson must have been an independent director. Recommendations of *The Code* that became effective on 1 January 2003 also focus audit committee composition but are more stringent than previously. Specifically, under *The Code* audit committees of Singapore firms must comprise a minimum of three members, being all non-executives and the majority independent.[5] Overall, requirements of the Companies Act of 1990, SGX Listing Manuel and BPG are closely aligned requirements in nations such as Canada and United Kingdom. In contrast, requirements of *The Code* on audit committee composition mirror those being emphasized in the United States.

In the wake of Enron and other major accounting scandals there were calls by scholars and corporate governance advocates alike for audit committee to comprise members that possess sufficient accounting and/or financial management expertise (e.g., Bull and Sharp, 1989; Sommer, 1991; Blue Ribbon Committee, 1999). These calls were based on the premise audit committee member expertise has a significant influence on the standing committee's effectiveness. Some recent empirical evidence supports these claims (e.g., DeZoort and Salterio, 2001; Beasley et al., 1999). In Singapore factors associated with audit committee expertise have been largely neglected. Regulations such as the Companies Act of 1990, SGX Listing Manuel and BPG did not provide any provisions for Singapore firms to appoint directors with any specific academic or business expertise to the audit committee. *The Code*, however, recommends that at least two members serving on the audit committee should have accounting or financial management expertise or experience. The CGC (2001, p.8) argues the engagement of individuals with suitable qualified expertise to serve on the audit committee "will enhance the members' confidence and independence in the committee's dealing with the management, as well as both the external and internal auditors." Relative to the United States, the imposition of two suitability qualified members to serve on the audit committee is more stringent. The NYSE, for example, requires only one member of the audit committee to have appropriate accounting or financial management expertise or experience. The CGC (2001, p.8) support the inclusion of more suitably qualified members on the basis that it "would strengthen the objectivity of the audit committee's views and enhance the effectiveness

[5] *The Code* recommendations are not yet embedded in legislation such as Company Acts. Recommendations, however, have been incorporated into the Listing Manual requirements of the SGX effective from 1 January 2003.

of the audit committee when it liases with the external auditor."

Whilst requirements under *The Code* are stricter than previously firms still have discretion over the precise composition of the audit committee. For example, the firm can elect to man the committee with all independent directors, the bare minimum or a combination thereof. Similarly the firm can voluntarily elect to have a higher representation of suitably qualified members than the recommended require or not. As the audit committee is sub-ordinate to the board of directors it is likely board characteristics are likely to have a significant influence on the composition of the audit committee. In the following sub-sections we develop hypotheses related to four major boards of director's features.

Board Size

Board size has been of interest to scholars in the organizational management and corporate governance literature for the past several decades. This structural characteristic is generally thought to influence the effective monitoring capabilities of a board of directors. No consensus exists, however, on the direction of this association. Stakeholder theory and resource-dependence theory advocates, for example, generally support a positive association (e.g., Provan, 1980; Zahra and Pearce, 1989). Larger board size is thought to enable the election of a broader range of directors – such as inside directors, affiliated directors and independent directors – that represent and monitor the interests of a greater number of stakeholder groups. Further, it allows greater balancing of each board member's individual expertise, interests and incentives, thereby promoting more effective decision-making and stakeholder harmony. Finally, larger board size enhances the information-processing capabilities and the quality of advice given to corporate management by the board (Zahra et al., 1993). Some empirical research supports the views of stakeholder and resource-dependence theorists. Chaganti et al., (1985) found that the board size of firms filing for Chapter 11 bankruptcy protection was smaller than a matched sample of non-failing firms. They (Chaganti et al, 1985) concluded that larger board size was more effective in preventing corporate failure than smaller boards.

Alternatively, agency theorists support smaller boards reasoning that as size increases control and monitoring functions is impaired (Judge and Eithaml, 1992; Dalton et al., 1999). Mintzberg (1983) states larger boards also increase the opportunity for manipulation by corporate management. Similarly, Jensen (1993, p.865) wrote that when "boards get beyond seven or eight people they are less likely to function effectively and are easier for the CEO to control." Also, some agency theory advocates suggest larger board size leads to less participation and cohesion amongst members, diminishing the ability to achieve a consensus on control decisions (Evans and Dion, 1991; Lipton and Lorsch, 1992). Yermack (1996) showed that higher market evaluations, as well as higher returns on assets (RCIA) and returns on sales (ROS), were associated with firms that had smaller boards of directors. He (Yermack, 1996) concluded that whatever benefits may be associated with board largeness is overwhelmed by poor communication and decision-making processes.

Despite lacking a consensus, scholars generally support a positive association between board size and a firm's ability to voluntarily increase independent director representation and engage independent directors of suitable expertise. As Klein (2002a, 2002b) argues a firm limits the size of its board then the number of directors with suitable expertise to serve on the audit committee will also be limited. Smaller boards of directors will naturally restrict the ability – and incentive – for a firm to voluntarily appoint more independent directors with suitable qualifications to audit committee (Collier and Gregory, 1999; Beasley and Salterio, 2001). Though empirical research supports this proposition, studies to date have relied on data predominantly from North America. To further understanding evidence in alternative domestic settings, the following hypotheses are formed:

Hypothesis 1a: Singapore firms with larger board of directors are more likely to be associated with more independent audit committees than counterparts with small boards.

Hypothesis 1b: Singapore firms with larger board of directors are more likely to be associated with audit committees of greater extensive breath in accounting expertise and committee experience than counterparts with small boards.

Leadership Structure (Duality)

Duality refers to the situation when an executive holds both the position of chief executive officer (CEO) and Chairperson of the board. Shareholder groups and regulators in Western free-enterprise economies are increasingly pressurizing firms to separate the roles of CEO and Chairperson of the board (Vafeas and Theodorou, 1998; Carello and Neal, 2003). Agency theorists argue duality seriously undermines the board of directors' independence and, therefore, its effectiveness as a monitoring mechanism (e.g., Hofer, 1986; Patton and Baker, 1987; Wang and Dewhirst, 1992).

Sonnenfeld (1981) argues executives acting as both CEO and Chairperson are biased in their stakeholder orientations toward corporate management. Consequently, executives acting as joint CEO/Chairperson are likely to support the implementation of policies that benefit corporate management rather than shareholders (Ford and McLaughlin, 1984). Also, the positions of CEO and Chairperson are positions perceived to carry considerable power. Combining the two positions ultimately enables the executive to gain greater strategic influence and power. This influence and power may intimidate other directors who will be reluctant to support strategies and policies contrary to the interests of corporate management for fear of incurring the disapproval of their leader (Mallette and Fowler, 1992). Dividing the two positions disperses power and authority more equitably across the board of directors enhancing its ability to effectively implementation decisions that protect the interests of shareholders (Wang and Dewhirst, 1992). Empirical findings generally support normative suggests that separation of the roles of CEO and Chairperson is important in increasing a board of directors' monitoring effectiveness (e.g., Dechow et al., 1996). Overall, based on the above arguments and consistent with the prior work of Beasley and Salterio (2001), the present study expects duality will influence composition and expertise of audit committees of Singapore firms. It is likely that the environment in Singapore firms not segregating the roles of CEO and Chairperson will produce a less inducing atmosphere for the voluntary appointment of independent directors with suitable qualifications. Analysis of the impact of duality on the composition and expertise of audit committees in Singapore as prior research suggests CEO/Chairperson positions of publicly listed firms are held by the same individual. The following testable hypotheses are, therefore, formed as follows:

Hypothesis 2a: Singapore firms separating the CEO and Chairperson roles are more likely to be associated with more independent audit committees than firms not segregating the two positions.

Hypothesis 2b: Singapore firms separating the CEO and Chairperson roles are more likely to be associated with audit committees of greater extensive breath in accounting expertise and committee experience than counterparts not segregating the two.

Proportion of Independent Directors on Board of Directors

Prior literature routinely emphasizes the benefits of independent director representation in corporate governance. Fama and Jensen (1983), for example, argue greater proportional representation of independent directors increases the board of directors effectiveness in monitoring managerial opportunism. Agency theorists propose two basic views to justify support for greater independent director representation. First, acceptance of a directorship appointment is a signal the independent director is a 'decision expert'. Independent directors, therefore, place their reputation capital and potential future directorship offer at risk (Vafeas and Theodorou, 1998). Consequently, independent directors have an incentive to fulfill their responsibilities and duties with greater diligence (Fama and Jensen, 1983). Second, independent directors lack the issue of role bias relative to executive (and to a lesser degree non-executive) directors. That is, independent directors are not directly subordinate to the board within the corporate hierarchy (Johnson et al., 1993). Due to a role bias, executive directors are less likely to introduce or support policies at a board level that will ultimately affect them at a subordinate level (Frankforter, et al., 2000).

Based on the prior justifications, independent directors a more likely to favour strategies indicative of better corporate governance policies such as the voluntary inclusion of more suitably qualified independent directors to the audit committee. Whilst independent directors have incentives to support such policies, their ability to implement them will be enhanced by the proportion of independent directors on the board of directors (Beasley and Salterio, 2001). First, with a greater pool of independent directors it is naturally easier for the board of directors to create a more independent audit committee. Second, increased independent director representation will dissipate the power of executive directors in the decision-making process such that the independent directors have a greater chance to influence composition and expertise of the audit committee. Klein (2002a, 2002b), however, warns that whilst independent directors have the incentive and ability to appointment more suitably qualified independent directors this option may not be viable. Previous researchers (e.g., Williamson, 1984; Fama and Jensen, 1983) point out that a board requires executive, non-executive and independent directors to best fulfill the responsibilities of the board. Based on this point, Klein (2002b, p.438) suggests an audit committee's composition and expertise reflects a trade-off between director independence and director attributes "which, in turn reflects the balancing of the firm's monitoring needs and its requirements for specialized information." Members of a board of directors, therefore, may have to consider the costs and benefits of appointing another suitably qualified independent director versus an executive or non-executive director with specialized knowledge of the inner workings of the firm. Prior empirical research generally supports a positive association between the proportion of independent directors on a board and audit committee independence and expertise (e.g., Beasley and Salterio, 2001; Klein, 2002a, 2002b). To explore this relationship within the corporate governance environment of Singapore the following testable hypothesis is formed:

Hypothesis 3a: Singapore firms with a higher proportion of independent directors are more likely to be associated with more independent audit committees.

Hypothesis 3b: Singapore firms with a higher proportion of independent directors are more likely to be associated with audit committees of greater extensive breath in accounting expertise and committee experience.

Directorate Interlocks

Prior literature suggests directorate interlocks[6] influences a board monitoring activities (e.g., Pfeffer and Salancik, 1978; Turnball, 1997). There is, however, no theoretical consensus on the precise direction of this association. Some (e.g., Pfeffer and Salancik, 1978; Young et al., 2000) suggest directorate interlocks have a negative impact on the effective monitoring of boards. It is argued directorate interlocks increases intercorporate collusion, and the aggregation and advancement of the collective interests of the corporate elite. In addition, power of individual firms is enhanced when combined as a 'group'. Consequently, the ability of each individual firm to absorb the scrutiny and demands of shareholders strengthens. Directorate interlocks, therefore, is thought to enable corporate management to become entrenched, thereby, being better able to restrict the implementation of policies that increases monitoring effectiveness. Under this perception of directorate interlocks, there is likely to be greater reluctance within a highly interlocked firm to voluntarily increase election of additional suitably qualified independent directors to the audit committee. Within group protection assists deflect negative overtures from external stakeholders having a less independent and qualified audit committee.

Conversely, others argue directorate interlocks is fundamental in reducing a firm's general vulnerability and exposure risk by enhancing a firm's access to key resources, thereby, providing a more stable supply and general business environment. Also, directorate interlocks are likely to enhance the natural sharing of information between firms. With this greater sharing and openness a firm's propensity for secrecy is likely to diminish (Sanders and Carperter, 1998). Directorate interlocks may also enhance the decision-making capabilities of a board of directors. With greater directorate interlocks a firm's board of directors can draw on the broader personal knowledge of other organizations acquired by interlocked members so that greater insights and comparisons can be incorporated within the decision-making process (Dahya et al., 1996). If directorate interlocks reduces a firm's risks and increases openness directors – particularly executive directors – may perceive there is lower associated costs with voluntarily including more suitably qualified independent directors to serve on the audit committee. Further, directorate interlocks may increase the pool of experienced independent directors available to serve on the audit committee.

Directorate interlocks is an important issue within the context of Singapore. Due to its small population and cultural background the overall pool of directors serving on firms is likely to be lower relative to more populace nations. Consequently, to meet the monitoring needs and other requirements, Singapore firms are likely to engage the serves of directors serving on other firms. Prior to the present study a formal empirical analysis of the association between directorate interlocks and audit committee composition and expertise had not been undertaken. Consequently, to explore the influence of directorate interlocks on audit committee independence and expertise in Singapore the following null hypotheses (as the direction of relationship cannot be determined *ex ante*) are formed:

Hypothesis 4a: Singapore firms with a higher proportion of directorate interlocks are not associated with more independent audit committees.

Hypothesis 4b: Singapore firms with a higher proportion of directorate interlocks are not associated with audit committees of greater extensive breath in accounting expertise and committee experience.

3. Research Method

Sample Data

Data were hand collected from the 2003 annual reports of firms listed on the SGX (Mainboard and SESDAQ). The initial sample comprised 551 firms. To eliminate the undue influences of foreign requirements and expectations, 63 foreign

[6] Directorate interlocks refers to when a director of one firm holds a directorship with another firm.

incorporated firms were removed. Finally, consistent with prior research, 20 firms not listed on the SGX for the entire twelve months of the 2003 calendar year were also excluded.[7] Out of the 468 firms remaining a complete panel of useable annual reports filed with the SGX, and board and audit committee information for 445 firms were collected. Eleven firms were excluded due to various miscellaneous data limitations (such as lack of information on committee composition or construction of the board of directors). A further four outliers (4> standard deviations from the mean) were excluded. The final useable sample, therefore, comprises 430 firms.

Regression Model and Proxy Measures

The primary statistical tool applied in this present study is ordinal logistic regression. The model employed to test *Hypotheses 1a, 2a, 3a* and *4a* is presented below in *Equation 1* whilst *Equation 2* is used to test *Hypotheses 1b, 2b, 3b* and *4b*:

$$AC\ Independence_i = \alpha + \beta_{i1}Board\ Size_i - \beta_{i2}Duality_i + \beta_{i3}BDCOMP_i + \beta_{i4}PerDirLocks_i + \beta_{i5}Leverage_i + \beta_{i6}Power_i + \beta_{i7}PerInsOwn_i + \beta_{i8}Block\ H_i + \beta_{i9}Auditor_i + \beta_{i10}Regulator_i + \beta_{i\,11}Firm\ Size_i + \beta_{i12}ConLosses_i + \varepsilon_i \quad [1]$$

$$AC\ Expertise_i = \alpha + \beta_{i1}Board\ Size_i - \beta_{i2}Duality_i + \beta_{i3}BDCOMP_i + \beta_{i4}PerDirLocks_i + \beta_{i5}Leverage_i + \beta_{i6}Power_i + \beta_{i7}PerInsOwn_i + \beta_{i8}Block\ H_i + \beta_{i9}Auditor_i + \beta_{i10}Regulator_i + \beta_{i\,11}Firm\ Size_i + \beta_{i12}ConLosses_i + \beta_{i13}No\ AC\ Members_i + \varepsilon_i \quad [2]$$

Legend: See Table I and II for full description and definition of the dependent, independent and control variables.

AC Independence is an ordinal scale measure where Singapore firms meeting the mandatory minimum majority of independent directors required to serve on the audit committee are coded zero. Firms with audit committees comprising a proportion of independent directors between the mandatory minimum and 100% independent director representation were coded one. Finally, those with audit committees composed solely of independent directors were coded two. This method is consistent with Beasley and Salterio (2001). Data for measuring *AC Independence* is from the 2003 fiscal year annual reports.

The method developed by Beasley and Salterio (2001) is also utilized in constructing the proxy measure for *AC Expertise*. This proxy is a composite rating score based on whether the audit committee possessed three distinctive attributes representative of different important dimensions of independent directors' knowledge and experience in financial reporting and audit committee related matters. These three attributes are:

(a) one (or more) independent directors serving on the audit committee had senior executive experience;
(b) one (or more) independent directors serving on the audit committee held a professional certification in accounting or law; and
(c) one (or more) independent directors serving on the audit committee had experience serving on audit committees of another firm as an independent director.

Beasley and Salterio (2001, p.562) selected these three conditions as scholars and corporate governance reform advocates (e.g., Abdolmohammadi and Levy, 1992; DeZoort, 1997) have indicated they are "important component of knowledge and experience that an audit committee member should process." In the specific context of Singapore, the CGC (2001) also recognized these conditions as key attributes. Further, the three conditions have "been shown to affect individual audit committee members' judgments in laboratory tasks" (Beasley and Salterio, 2001, p.562). Information necessary for measuring *AC Expertise* is obtained from 2003 fiscal year annual reports, SGX Companies Handbook (2001, 2002), *Who's Who of Singapore* (2001, 2002), *Who's Who of Business in Asia* (2002) and the Times Publishing Directory of Singapore Business (2001, 2002).

Several reasons justify the adoption of Beasley and Salterio (2001) method in constructing the two dependent variables. First, audit committee requirements in Singapore at the time of the present study were similar to Canada where the research of Beasley and Salterio (2001) focused. Therefore, this provides a similar frame of reference in applying the respective proxy measures. Second, in specific respect to *AC Expertise*, the method enables different key attributes to be integrated into a single comparable score that better captures the overall balance of an audit committee's knowledge and experience. Third, empirical research into issues covered by this present study is still limited. Consequently, there are questions about the ability to generalize findings such as those from

[7] Prior to their IPO a firm may not have established a board of directors allowing sufficient scope to appoint an audit committee with a percentage of independent directors greater than the minimal requirements. With passage of some time the firm will have greater scope to make voluntary adjustments to its audit committee. Inclusion of firms that have only been listed may create noise within the analysis.

Beasley and Salterio (2001). In using the method defined by Beasley and Salterio (2001) in constructing the two dependent variables, results of the present and prior research can be better compared. The absolute number of members serving on the board of directors at the end of the 2003 fiscal year is used to proxy for the size of the board of directors. The proxy is denoted *Board Size*. The proxy for the segregation of the executive positions of Chairperson and CEO[8] is denoted as *Duality*. This proxy is scored on a dichotomous basis with a firm having the same individual serving as Chairperson and CEO/President /Managing Director scored one (1), otherwise zero (0). The proportion of independent directors serving on the board of directors at the end of the 2003 fiscal year is used to proxy for board independence (denoted *BDCOMP*).[9] Finally, the proxy for director interlocks (denoted *PerDirLocks*) is measured as the proportion of independent directors holding directorships in other firms to the total number of independent directors on the board.

Leverage is defined as the extent of long-term liabilities as a percentage of total assets (Defond and Jiambalvo, 1994). Data on long-term liabilities and total assets were obtained from each firm's 2003 fiscal year annual report. In line with the tenet if agency theory it is predicted that as the extent of *Leverage* increases a board of directors' propensity to voluntarily improve audit committee independence increases. *Power* is a dichotomous measure with firms having the non-executive Chairperson serving on the audit committee being coded as one (1), otherwise the firm is coded zero (0). Data on CEOs sitting on the audit committee of the firm is obtained from the 2003 fiscal year annual report of each firm. *PerInsOwn*, the proxy for the amount of ownership by inside directors, is defined as the ratio of outstanding shares owned by inside directors to the total number of outstanding shares of the firm. Consistent with prior theoretical arguments it is expected that higher levels of *PerInsOwn* will be associated with lower levels of voluntary improvements in audit committee independence. The proxy for presence of a block holder is denoted as *Block H*. Consistent with prior research (e.g., Mak and Phan, 2000; Klein, 2002a) a block holder is defined as an individual, firm or institution owning 10% or more of the outstanding shares of the firm. Using a dichotomous scale, firms with a block holder present are coded one whilst those without a block holder present are coded a zero. The proxy *Auditor* is used to denote whether the firm's external auditor is one of the *Big-5* firms or not. Sample firms audited by a *Big-5* audit firm are coded one whilst all remaining firms are coded zero. Information on block holder and external auditor engaged by each sample firm is obtained from the 2003 fiscal year annual report of each sample firm. *Regulator* is a dichotomous scale where a sample firm operating in a Singapore government regulated business sector is coded a one whilst remaining firms are coded zero. Consistent with prior research (e.g., Menon and Williams, 1994; Beasley and Salterio, 2001) it is predicted *Regulator* will have a positive association with *AC Independence* and *AC Expertise*. *Firm Size* is measured as the natural logarithm of a firm's total book value of assets as reported in the 2003 fiscal year annual report of each sample firm. Finally, sample firms reporting consecutive losses (net losses after tax before extraordinary items) in the 2001 and 2002 fiscal years were coded one whilst all remaining firms were coded zero. Profits are from the 2003 fiscal year annual reports.

4. Results

Descriptive Statistics

Table I – Panel A reports data on the composition of the board of directors for the 430 sample Singaporean firms. Findings indicate 44.371% of the board members are independent, slightly less more two-fifths (40.216%) are insiders whilst the remainder (15.413%) are non-executive directors. Of the 430 sample Singaporean firms, just over one quarter (28.643%) have boards of directors comprising at least 50% independent directors. Only three firms had a board of directors comprised solely of independent directors. Data on audit committee composition of the 430 sample Singapore firms, as reported in Table I – Panel B, are consistent with prior research using Singapore data. In general, audit committees of Singapore firms are dominated by independent directors (73.220%). This is not surprising given the legislative and institutional requirements regarding audit committees. Singapore firms appear to appoint on average 26.780% of the members that are non-executive directors. Also, just under a quarter (23.713%) of

[8] In contrast to United States firms Singapore public listed firm the senior executive may hold the title of managing director or president that are considered to be equivalent to a chief executive officer designation. We recognize these three positions as one in the same for our study.

[9] Consistent with prior research, employees are deemed inside directors and, therefore, are excluded from this measure. In addition, employees of a parent firm or subsidiary firm or employees of a firm with the same parent firm are also excluded as are former employees. Finally, individuals with professional ties to the firm are excluded.

the sample firms had audit committees comprised solely of independent directors. Table 1 – Panel C summarizes knowledge and experience characteristics of the sample firms' audit committee. Results indicate a large majority of Singapore firms (76.243%) had at least one independent director serving on their audit committee with experience serving as an independent director on the audit committee of at least one other firm. Meanwhile, over half (52.892%) of the sample firms had at least one independent director on their audit committee with senior executive experience. Two-fifths of the sample firms (40.682%) had at least one independent director on the audit committee with professional credentials in either accounting or law. Relative to the findings of Beasley and Salterio (2001), the overall level of knowledge and experience of audit committees of Singapore firms appears quite similar to Canadian firms.

[Insert Table I About Here]

Findings on the composition of boards of directors and audit committees of the 430 sample Singaporean firms are consistent with previous related Singapore studies. However, comparisons with research in Western nations (e.g., Canada, United Kingdom and United States) indicate various differences. Major differences include: (1) percentage of executive directors in Singapore firms are higher than Western nations with the percentage of independent directors less; (2) percentage of boards comprising at least 50% independent directors is lower than Western nations; (3) size of the audit committee of firms from Western nations are slightly greater than Singapore firms; and (4) the percentage of firms with audit committees comprised solely of independent directors is less for Singapore firms than counterparts in Western nations.

Table II presents the mean, median and standard deviation of the untransformed independent variables and control factors used in the ordinal logistic regression analysis. Findings indicate the boards of directors of Singapore firms have an average (median) directorship number of 7.132 (7.000). Board size of Singapore firms is generally lower than for firms from Western nations. For 31.681% of the sample firms, the same individual occupied the positions of CEO and Chairperson. This percentage is generally comparable to values reported in studies using data from Western nations. Findings indicate that on average just over a third (36.342%) of the independent directors on the board of directors of one firm conjointly served on the board of directors of another firm. *Leverage* had an average of 37.261% and median of 36.721%. For just over a sixth of the 430 sample Singapore firms (16.742%) the non-executive Chairperson was a serving member on the audit committee at the end of the 2003 calendar year. The average (median) level of ownership of outstanding shares amongst inside directors was 25.221% (19.266%), an average higher than in other developed economies such as Canada, United States and United Kingdom (Vafeas and Theodorou, 1998; Beasley and Salterio, 2001; Klein, 2002a, 2002b). The higher level of inside ownership is not unexpected because many publicly listed firms in Singapore continue to have strong family ties. Nearly half (52.336%) of the sample firms have at least one stockholder holding 10% of the outstanding shares of the firm. For 87.216% of the sample firms the external auditor was a *Big-5* firm whilst 15.224% operated in regulated industries. Given the sample firms cover virtually all the firms in Singapore at the end of 2003, the sample comprises a diversified range of firms by size with average total assets being $1,468.93 million (Singapore dollar) with the median firm having total assets of $699.81 million. The economic performance of the sample firms appears to be relatively low with 22.638% report two years of consecutive losses. This is consistent with the tough economic conditions prevailing in Singapore during 2001 and 2002. Finally, average audit committee size (3.187 individuals) suggests few Singapore firms have audit committee membership above the mandatory minimum of three persons.

[Insert Table II About Here]

Correlations

Table III presents Pearson correlations between the dependent variable, independent and control factors. Spearman correlations yielded similar findings. Correlations between the dependent and independent variables support some of the testable hypotheses. Specifically, *AC Independence* is significantly positively correlated with *Board Size* and *BDCOMP* (*Hypothesis 1a* and *Hypothesis 3a*) whilst significantly negatively correlated with *Duality* (*Hypothesis 4a*). Meanwhile, *AC Expertise* is significantly negatively correlated with *Duality* (*Hypothesis 2b*) and positively significantly correlated with *PerDirLocks* (*Hypothesis 4b*).

[Insert Table III About Here]

Table III also indicates a number of the independent variables and control factors are significantly correlated with each other. Farrar and Glauber (1967) state bivariate correlation values indicate harmful levels of mulitcollinearity if above 0.8 (Hair et al., 1995). No bivariate Pearson correlations between independent and control variables are greater than 0.442 (*Board Size* and *Board Size*). To supplement the Pearson correlations, variance inflation factor (VIF) values are computed using *Equation 1* and *Equation 2*. All VIF values computed were below 2.0, significantly below the critical value of 10.00 (Netter et al., 1989). Overall, Pearson correlations and VIF results indicate multicollinearity is not a serious concern.

Ordinal Logistic Regression Analysis

Table IV – Panel A reports the empirical results from the ordinal logistic regression analysis based on *Equation 1*. Consistent with *Hypothesis 1a*, the coefficient for *Board Size is* positive and statistically significant (p<0.05). This implies Singapore firms with more individuals serving on the board of directors are more likely to elect a higher proportion of independent directors to the audit committee than the mandated minimum requirement than counterparts with smaller boards. *Hypothesis 2a* is also supported by results reported in Table IV – Panel A. That is, the negative and statistically significant coefficient for *Duality* (p<0.01) shows Singapore firms that did not segregate the positions of CEO and Chairperson have a lower propensity to voluntarily elect more independent directors to the audit committee than the mandated minimum requirements. The positive and statistically significant coefficient representing *BDCOMP* (p<0.01) supports *Hypothesis 3a*. This is consistent with the perception Singapore firms with a higher proportion independent directors on the board of directors are more likely to voluntarily appoint more independent directors to the audit committee than the mandatory minimum. The coefficient for *PerDirLocks* is insignificantly different from zero. Consequently, *Hypothesis 4a* is not supported by the findings reported in Table IV – Panel A. Amongst the control factors, the coefficients for *PerInsOwn* (p<0.10) and *Board Size* (p<0.05) are statistically significant (negative and positive respectively). Coefficients for the remaining control factors are insignificantly different from zero.

[Insert Table IV About Here]

Ordinal logistic regression results based on *Equation 2* are reported in Table IV – Panel B. Results reported in Table IV – Panel B do not support *Hypothesis 1b*. Specifically, the coefficient is statistically insignificant from zero and in the opposite direction to expectations. Consistent with predictions of *Hypothesis 1b* the coefficient for *Duality* is negative and statistically significant. Singapore firms that fail to segregate the positions of CEO and Chairperson of the board, therefore, are less likely to voluntarily appoint more suitably qualified independent directors to the audit committee. The coefficient for *BDCOMP* is moderately statistically significant. The directional sign on the coefficient for this independent variable is contrary to theoretical arguments, empirical findings and expectations of *Hypothesis 3b* (e.g., Beasley and Salterio, 2002). Findings suggest, therefore, that in the case of Singapore firms those with a higher proportion of independent directors are less likely to include more suitably qualified independent directors to the audit committee. Consistent with *Hypothesis 4a*, the positive and statistically significant coefficient for *PerDirLocks* implies that firms with a higher percentage of independent directors with directorships on other boards are more likely to elect them to the audit committee to improve the overall knowledge and experience of this standing committee. Amongst the control factors, the coefficients for *AC CEO Friendly* (p<0.10), *Board Size* (p<0.05) and *No AC Members* (p<0.01) are statistically significant and positive. Coefficients for the remaining control factors are insignificantly different from zero.

Sensitivity Analysis

To test robustness of the results we conduct supplementary analysis. First, following the methodology of Beasley and Salterio (2001), firms were categorized into three groups: (1) firms meeting the mandatory minimum requirement for a majority of independent directors on the audit committee; (2) firms with audit committees comprising a proportion of independent directors between the mandatory minimum requirement and 100% independent directors; and (3) firms with audit committees comprised solely of independent directors. Firms in the three categories were then coded zero, one and two respectively. A multinominal ordered probit regression based on the *General Equation* is then performed. Results from this analysis are consistent with those reported in Table IV, with no differences in the direction and significance levels of the independent variables. Second, due to the low number of firms in the second category (9.32%) firms were recoded into two groups. Firms meeting the mandatory minimum requirement for a majority of independent directors serving on the audit committee were coded zero whilst all other firms were coded one. Logit, multiple and probit regression analysis are then conducted using this alternative coding procedure. Again, results for the logit, multiple and probit regression are consistent with findings reported in Table IV. Third, in some situations the structure of a firm's board of directors did not provide scope to voluntarily exceed the mandatory minimal requirement of a majority of independent directors on the audit committee without having to appoint an additional independent director. As a test of robustness, all firms (n=108) with the number of independent directors on the board being exacting equal to the number of independent directors required for that firm's audit committee to have a majority of independent directors given its size were excluded. Analysis performed using the remaining firms reveal no differences in the direction and significance of any of the independent variables. Finally, additional analysis was conducted to access the sensitivity of results to the proportion of independent directors on the board, the size of the board and firm size. All results reported in Table IV continue to hold.

5. Conclusions

Some recent empirical research has investigated the association between boards of directors' characteristics and audit committee composition (e.g., Beasley and Salterio, 2001; Klein, 2002a, 2002b). The purpose of our study is to build on developing the understanding of such associations drawing on data from a different socio-political and economic environment – namely Singapore – than prior research that utilizes North America sources. Specifically, we examines the association between four board-specific characteristics – size of the board, leadership structure, proportion of independent directors and percentage of independent directors with directorate interlocks – and two audit committee features – level of independent director representation and extent of knowledge and experience.

The major findings from our study are summarized in the following manner. First, consistent with the findings of Beasley and Salterio (2001) and Klein (2002a, 2002b), we find Singapore firms with (a) larger boards of directors and (b) a higher proportion of independent directors were likely to voluntarily include more independent directors to their audit committees than the mandatory minimum required than counterparts with a smaller number of board directorships and lower proportion of independent directors. Second, Singapore firms than did not segregate the positions of CEO and Chairperson of the board were less likely to voluntarily include more independent directors to serve on the audit committee than the mandatory minimum required than firms that had different individuals acting in the two aforementioned positions. This finding is consistent with expectations and prior empirical results (Defond et al., 2000; Beasley and Salterio, 2001). Third, director interlocks amongst independent is found not to have a significant association with the likelihood of a Singapore publicly listed firm voluntarily including more independent directors to the audit committee beyond the mandatory minimum requirements.

Fourth, a Singapore publicly listed firm that segregates the positions of CEO and Chairperson of the board is found to be more likely to include more independent directors with an increased understanding of financial matters and audit committee knowledge and experience than a firm not segregating these two key positions. This is consistent with findings based on Canadian data (Beasley and Salterio, 2001). Fifth, contrary to prior empirical findings of Beasley and Salterio (2001) utilizing Canadian information, our study indicates no association between either board size and proportion of independent directors on the board and the propensity for a Singapore publicly listed firm to voluntarily include more independent directors to the audit committee with an increased understanding of financial matters and audit committee knowledge and experience. Finally, results indicate that Singapore firms with a higher percentage of independent directors holding directorships on the boards of other firms generally had audit committee comprised of independent directors with an increased understanding of financial matters and audit committee knowledge and experience than those counterparts with independent directors without interlocks. The significance of this characteristic may stem from Singapore's small natural population and the small pool of individuals to serve as directors. That is, as research of Singapore firms indicate a large number of the same individuals serve on various boards of publicly listed firms. This is particularly true for independent directors. Due to the regulatory requirements pertaining to audit committees in Singapore there is a greater likelihood that independent directors with interlocks with have experience serving on audit committees than those without interlocks. As a result, Singapore firms with a higher proportion of independent directors with interlocks there is an increased likelihood of one or more of these independent directors having audit committee experience. In general, Singapore firms appear to take advantage of this situation by appointing the relevant independent director (i.e., an independent director with interlocks) to the audit committee than an independent director not holding other directorships.

Findings from our study have both scholarly and applied applications being of interest to various stakeholders (e.g., shareholders, institutional investors, corporate management), academics, regulators, board of director members (both present and future), policymakers and corporate governance reform advocates. On a scholarly level, findings from our study provide some additional support for the framework developed by Beasley and Salterio (2001). Specifically, findings of the present study show key board of director characteristics identified by Beasley and Salterio (2001) to be associated with a firm's willingness to voluntarily include more independent directors to the audit committee beyond mandatory minimum requirements appears to transcend to other socio-political and economic and corporate governance environments. Consequently, results assist in further generalizing earlier empirical results to alternative domestic settings. Conversely, findings from the present study suggest the results of Beasley and Salterio (2001) regarding board of director characteristics-audit committee knowledge and experience links may not be readily generalized to alternative domestic setting. The present study indicates that within the Singapore domestic setting the independent directors' interlocks appears the central determinant of a publicly listed firm's decision to voluntarily include an independent director with an increased understanding of financial matters and audit committee knowledge and experience to the audit committee. Overall, findings of the present study suggest that in the case of audit committee knowledge and experience further studies across other domestic settings to determine the precise impact of board characteristics on this audit committee dimension.

On an applied level, findings from our study provide various stakeholders (such as shareholders, institutional investors, present and future board members) with a greater understanding of the factors influencing a firm's decision in constructing its audit committee. For example, in the case of a present and future independent director considering a possible independent directorship, results indicate that a Singapore publicly listed firm is likely to have a higher expectation of any director serving on other board of directors to serve on its audit committee than an independent director without such interlocks. Results will also assist stakeholders develop appropriate external assessment models for determining the relevant risk associated with a Singapore publicly listed firm's corporate governance accountability and performance. For Singapore corporate governance policymakers the findings from the present study have relevant implications. Findings suggest requirements of *The Code* aid in providing the incentive and ability of Singapore firms to increase audit committee independence regardless of proposed changes to mandatory requirements. Conversely, *The Code* recommendations related to segregation of the Chairperson and CEO position appears to be the only one that may have an indirect influence on the willingness of Singapore firms to voluntarily improve audit committee knowledge and expertise. As a result, Singapore policymakers may consider the introduction of more direct policies more effective in increasing this dimension of an audit committee. Finally, for international policymakers and corporate governance reformists, due to the contrary findings from our study and prior research (e.g., Beasley and Salterio, 2001; Klein, 2002a, 2002b) there may be difficulties in efforts to harmonize corporate governance practices related to audit committees. Rather than introduce, or blindly transplant, a corporate governance policies and incentives for improving audit committee independence and knowledge and experience from another country, policymakers should review the socio-political, economic and corporate governance in their respective nations to determine the most appropriate strategy.

A variety of avenues for future research arise from this present study. First, whilst showing board characteristics are associated with audit committee independence, and knowledge and experience, findings from our study do not indicate if this actually improves audit committee performance. For example, future research of audit committees and corporate governance in Singapore may focus on whether firms with segregated Chairperson and CEO positions and more independent audit committees have lower levels of financial fraud than counterparts that segregate the two positions but have less independent audit committees. Second, raises questions about the generalizability of results using North American data to alternative socio-political, economic and corporate governance environments. Additional research should attempt to extend this line of inquiry to other domestic settings to provide additional understanding of the links between board characteristics and key audit committee dimensions. Finally, corporate governance is an on-going process. Future research may attempt to examine board characteristics – audit committee dimension links across time to determine the impact of changes in corporate governance policies. For example, a longitudinal study may examine the associations included in our study in the years following the implementation of the recommendations of *The Code*.

References

1. Abbott, L. J., Parker, S., Peters, G., & Raghunandan, K. 2003. An empirical investigation of audit fees, nonaudit fees and audit committees. *Contemporary Accounting Research*, 20(2): 215-234.
2. Abdolmohammadi, M. J., & Levy, E. S. 1992. Audit committee members' perceptions of their responsibility. *Internal Auditing*, 8(1): 53-63.
3. Beasley, M. S. 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review*, 71: 443-465.
4. Beasley, M. S., Carcello, J. V., & Hermanson, D. R. 1999. *Fraudulent Financial Reporting: 1987-1997, An Analysis of U.S. Public Companies*. New York, New York, United States of America: Committee of Sponsoring Organizations of the Treadway Commission.
5. Blue Ribbon Committee. 1999. *The Report and Recommendations of the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees*. New York, New York, United States of America: New York Stock Exchange.
6. Bull, I., & Sharp, F. C. 1989. Advising clients on Treadway audit committee recommendations. *Journal of Accountancy*, 167(2): 45-52.
7. Cadbury, A. 1992. *Report of the Committee on the Financial Aspects of Corporate Governance*. London, United Kingdom: The Committee and Gee.
8. Carcello, J. V., & Neal, T. 2003. Audit committee characteristics and auditor dismissals following new going-concern reports. *The Accounting Review*, 78(January).
9. Chaganti, R. S., Mahajan, V., & Sharma, S. 1985. Corporate board size, composition and corporate failures in retailing industry. *Journal of Management Studies*, 22(July).
10. Collier, P., & Gregory, A. 1999. Audit committee activity and agency costs. *Journal of Accounting and Public Policy*, 18(4/5).
11. Corporate Governance Committee. 2001. *Report of the Committee and Code of Corporate Governance*. Singapore: Corporate Governance Committee.
12. Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. 1999. Number of directors and financial performance: A meta-analysis. *Academy of Management Journal*, 42(6).
13. Dechow, P. M., Sloan, R. G., & Sweeney, A. P. 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*, 13(1).
14. DeFond, M. L., Francis, J., & Wong, T. J. 2000. Auditor industry specialization and market segmentation: Evidence from Hong Kong. *Auditing: A Journal of Practice and Theory*, 19(1): 49-66.
15. DeFond, M. L., & Jiambalvo, J. 1994. Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, 17: 145-176.
16. Dey, P. 1994. *Where were the directors? The TSE committee on corporate governance in Canda*. Toronto, Canada: Toronto Stock Exchange.
17. DeZoort, F. T. 1997. An investigation of audit committees' oversight responsibilities. *Abacus*, 33(2): 208-227.
18. DeZoort, F. T., & Salterio, S. 2001. The effects of corporate governance experience and financial reporting and audit knowledge on audit committee members' judgments. *Auditing: A Journal of Practice and Theory*, 20(2): 31-47.
19. Evans, C. R., & Dion, K. L. 1991. Group cohesion and performance: A meta-analysis. *Small Group Research*, 22: 175-186.
20. Fama, E. F., & Jensen, M. C. 1983. Separation of ownership and control. *Journal of Law and Economics*, 26: 301-325.
21. Farrar, D., & Glauber, R. 1967. Multicollinearity in regression analysis: The problem revisited. *Review of Economics and Statistics*, February: 92-107.
22. Ford, R., & McLaughlin, F. 1984. Perceptions of socially responsible activities and attitudes: A comparison of business school deans and corporate chief executives. *Academy of Management Journal*, 27.
23. Frankforter, S. A., Berman, S. L., & Jones, T. M. 2000. Boards of directors and shark repellents: Assessing the value of an agency theory perspective. *Journal of Management Studies*, 37(3): 321-348.
24. Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. 1995. *Multivariate Data Analysis 4th Edition*. Englewood Cliffs, New Jersey, U.S.A: Prentice Hall.
25. Hofer, C. W. 1986. Turnaround strategies. *Journal of Business Strategy*, 1(1): 19-31.
26. Jensen, M., & Meckling, W. 1976. Theory of the firm: Managerial behaviour, costs and ownership structure. *Journal of Financial Economics*, 3: 305-360.
27. Johnson, R. A., Hoskisson, R. E., & Hitt, M. A. 1993. Board of director involvement in restructuring: The effects of board versus managerial controls and characteristics. *Strategic Management Journal*, 14: 33-50.
28. Judge, W. Q., & Zeithmal, C. P. 1992. Institutional and strategic choice perspectives on board involvement in the strategic

decision making process. *Academy of Management Journal*, 35: 766-794.
29. King, T. 1994. *King Report on Corporate Governance (Part I)*. Parklands, South Africa: The Institute of Directors of South Africa.
30. King, T. 2002. *King Report on Corporate Governance (Part II)*. Parklands, South Africa: The Institute of Directors of South Africa.
31. Klein, A. 2002a. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33: 375-400.
32. Klein, A. 2002b. Economic determinants behind variations in audit committee independence. *The Accounting Review*, 77.
33. Levitt, A. 1998. *The numbers game (Remarks delivered at the NYU Center for Law and Business)*. New York, New York, United States of America: NYU Center for Law and Business.
34. Lipton, M., & Lorsch, J. W. 1992. A modest proposal for improved corporate governance. *Business Lawyer*, 48: 59-77.
35. Mak, Y. T., & Phan, P. H. 2001. Corporate governance in Singapore: Current practice and future developments. In Organization for Economic Co-operation and Development (OCED) (Ed.), *Corporate Governance in Asia: A Comparative Perspective*: 373-405. Geneva, Switzerland: Organization for Economic Co-operation and Development.
36. Mallette, P., & Fowler, K. L. 1992. Effects of board composition and stock ownership on the adoption of 'poison pills'. *Academy of Management Journal*, 35: 1010-1035.
37. Menon, K., & Williams, J. D. 1994. The use of audit committees for monitoring. *Journal of Accounting and Public Policy*, 13(2).
38. Mintzberg, H. 1983. *Power In and Around Organizations*. Englewood Cliffs, New Jersey, United States of America: Prentice-Hall.
39. Netter, J., Wasserman, W., & Kutner, M. H. 1989. *Applied Regression Models*. Homewood, Illinois, U.S.A.: Richard D. Irwin.
40. New York Stock Exchange. 2000. *NYSE Listed Company Manual*. New York, New York, United States of America: New York Stock Exchange.
41. Patton, A., & Baker, J. C. 1987. Why don't directors rock the boat? *Harvard Business Review*, 65(November-December): 10-18.
42. Pfeffer, J., & Salancik, G. R. 1978. *The External Control of Organizations: A Resource-Dependence Perspective*. New York, New York, United States of America: Harper and Row.
43. Phan, P. H., & Mak, Y. T. 1999. Corporate governance in Singapore: Towards the 21st Century. *Bankers Journal Malaysia*, 109(March): 56-70.
44. Pincus, K., Rusbarsky, M., & Wong, J. 1989. Voluntary formation of audit committees among NASDAQ firms. *Journal of Accounting and Public Policy*, 8(4): 239-265.
45. Provan, K. G. 1980. Board power and organizational effectiveness among human service agencies. *Academy of Management Journal*, 23(1): 221-236.
46. Sanders, W. G., & Carperter, M. A. 1998. Internationalization and firm governance: The roles of CEO compensation, top team composition and board structure. *Academy of Management Journal*, 41(2): 158-178.
47. Securities and Exchange Commission. 1999. *Final Rule: Audit Committee Disclosure*. Washington, D.C., United States of America: Securities and Exchange Commission.
48. Sommer, A. A. 1991. Auditing audit committees: An educational opportunity for auditors. *Accounting Horizons*, 5(2): 91-93.
49. Sonnerfield, J. A. 1981. Executive apologizes for price fixing: Role biased perceptions of causality. *Academy of Management Journal*, 24: 192-198.
50. Turnball, S. 1997. Corporate governance: Its scope, concerns and theories. *Corporate Governance: An International Review*, 5(4).
51. Vafeas, N., & Theodorou, E. 1998. The relationship between board structure and firm performance in the United Kingdom. *The British Accounting Review*, 30: 383-407.
52. Wang, J., & Dewshirt, H. D. 1992. Boards of directors and stakeholder orientation. *Journal of Business Ethics*, 11(2): 115-121.
53. Williamson, O. E. 1984. Corporate governance. *Yale Law Journal*, 93.
54. Yermack, D. 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40.
55. Young, G. Y., Stedham, Y., & Beekun, R. I. 2000. Boards of directors and the adoption of a CEO performance evaluation process: Agency- and institutional- theory perspectives. *Journal of Management Studies*, 37(2): 277-295.
56. Zahra, S. A., Oviatt, B. M., & Minyard, K. 1993. *Effects of corporate ownership and board structure on corporate social responsibility and financial performance*. Paper presented at the Academy of Management Journal Best Paper Proceedings.
57. Zahra, S. A., & Pearce, J. A. 1989. Boards of directors and corporate financial performance. *Journal of Management*, 15.

Appendices

Table 1. Composition board and audit committees across the sample (n=430).

Description	Name	Average	Median	St. Deviation
Panel A – Board of Directors Composition				
% board comprising inside directors		40.216	41.827	17.365
% board designated 'non-executive' (grey) directors		15.413	16.667	18.595
% boards with at least 50% 'independent' directors		28.643	N/A	N/A
% boards with 100% 'independent' directors		0.730	N/A	N/A
Panel B – Audit Committee Composition				
% audit committee 'non-executive' directors		26.780	33.333	8.257
% audit committee 'independent' directors		73.220	66.667	13.821
% audit committees 100% 'independent' directors	*AC100%Ind*	23.713	N/A	N/A
Panel C – Audit Committee Expertise				
% sample with at least one independent director on audit committee with senior executive experience	*ACSenior*	52.892	N/A	N/A
% sample with at least independent director on audit committee serving on another firm's audit committee	*ACServing*	76.243	N/A	N/A
% sample with at least one independent director on the audit committee holding professional credentials (law or accounting)	*ACCredentials*	40.682	N/A	N/A
Knowledge and experience score of the audit committee's independent directors	*AC Expertise*	2.104	2.000	0.847

Table 2. Descriptive statistics of untransformed variables

Description	Name	Average	Median	St. Deviation
Independent Variables				
Number board of directors members of firm *i*		7.232	7.000	1.874
% sample same individual as CEO and Chairperson		31.681	N/A	N/A
Ratio independent directors on board of directors of firm *i* to total number of directors of Firm *i*		44.371	41.286	14.482
Ratio total number independent directors on board of firm *i* holding directorships on another firm to total number independent directors of firm *i*		36.342	33.3330	26.111
Control Factors				
Ratio total long-term liabilities to total assets		37.261	36.721	68.422
% sample having non-executive Chairman serving on the audit committee		16.742	N/A	N/A
% outstanding shares owned by inside directors		19.221	19.266	21.688
% sample with a stockholder owning more than 10% of outstanding common shares		52.336	N/A	N/A
% sample firms audited by a *Big-5* audit firm		87.216	N/A	N/A
% sample firms operating in regulated industry		15.224	N/A	N/A
Total Assets of firm *i* (SGD$ millions)		2,148.93	97.41	13,124.81
% sample reporting losses in both 2001 and 2002		22.638	N/A	N/A
Number of members on audit committee of firm *i*		3.187	3.000	0.538

Table 3. Pearson correlations results

	Dependent Variables		Independent Variables				Control Factors								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AC Independence	1.000														
AC Expertise	N/A	1.000													
Board Size	0.246**	0.086	1.000												
Duality	-0.337**	-0.159**	-0.329**	1.000											
BDCOMP	0.295**	0.031	-0.169**	-0.074	1.000										
PerDirLock	0.031	0.487**	0.135**	-0.219**	0.206**	1.000									
Leverage	-0.009	0.004	0.012	-0.002	0.085	-0.006	1.000								
Power	-0.111*	0.007	-0.278**	0.429**	0.018	-0.089	0.089	1.000							
PerInsOwn	-0.365**	-0.240**	-0.312**	0.333**	-0.157**	-0.191**	-0.032	0.199**	1.000						
Block H	-0.059	-0.066	-0.225**	0.279**	-0.165**	-0.241**	-0.001	0.134**	0.401**	1.000					
Auditor	0.019	0.015	0.058	0.019	0.054	0.062	-0.140**	-0.067	0.007	0.020	1.000				
Regulator	0.115*	0.074	0.112*	-0.082	0.113*	0.205**	0.008	-0.019	-0.158**	-0.155**	0.056	1.000			
Firm Size	0.263**	0.186**	0.442**	-0.258**	0.153**	0.355**	0.031	-0.209**	-0.365**	-0.285**	0.139**	0.212**	1.000		
ConLosses	0.047	-0.087	-0.013	0.003	0.023	-0.078	0.140**	0.037	-0.079	-0.075	0.038	-0.073	-0.143**	1.000	
No AC Members	0.229**	0.164**	0.275**	-0.131**	0.129*	0.083	0.029	-0.045	-0.122	-0.053	0.064	0.108*	0.239**	-0.008	1.000

Where: *, **, *** = significant 1%, 5% and 10% confidence levels respectively. See Tables I and II for variable definitions.

Table 4. Ordinal logistic regression results

			Panel A – *Equation 1*: $AC\ Independence_i = \alpha + \beta_{i1} Board\ Size_i - \beta_{i2} Duality_i + \beta_{i3} BDCOMP_i + \beta_{i4} PerDirLocks_i + \beta_{i5} Leverage_i + \beta_{i6} Power_i + \beta_{i7} PerInsOwn_i + \beta_{i8} Block\ H_i + \beta_{i9} Auditor_i + \beta_{i10} Regulator_i + \beta_{i\,11} Firm\ Size_i + \beta_{i12} ConLosses_i + \varepsilon_i$				Panel B – *Equation 2*: $AC\ Expertise_i = \alpha + \beta_{i1} Board\ Size_i - \beta_{i2} Duality_i + \beta_{i3} BDCOMP_i + \beta_{i4} PerDirLocks_i + \beta_{i5} Leverage_i + \beta_{i6} Power_i + \beta_{i7} PerInsOwn_i + \beta_{i8} Block\ H_i + \beta_{i9} Auditor_i + \beta_{i10} Regulator_i + \beta_{i\,11} Firm\ Size_i + \beta_{i12} ConLosses_i + \beta_{i13} No\ AC\ Members_i + \varepsilon_i$			
		Predicted Relationship	Coefficient Estimate	Std. Error	Wald Statistic	Significance	Coefficient Estimate	Standard Error	Wald Statistic	Significance
β_{i1}	*Board Size*	Positive	0.1772	0.0713	6.1664	0.0130**	-0.0393	0.0626	0.3934	0.5305
β_{i2}	*Duality*	Negative	-0.8443	0.2866	8.6799	0.0032*	-1.8367	0.5567	10.8858	0.0010*
β_{i3}	*BDCOMP*	Positive	0.0462	0.0090	26.0641	0.0000*	-0.0124	0.0075	2.7452	0.0975
β_{i4}	*PerDirLock*	Indeterminable	0.0011	0.0050	0.0474	0.8277	0.0442	0.0049	80.1971	0.0000*
β_{i5}	*Leverage*	Negative	-0.1210	0.1739	0.4844	0.4865	0.0112	0.1214	0.0085	0.9265
β_{i6}	*Power*	Indeterminable	-0.6699	0.5744	1.3603	0.2435	0.6625	0.3537	3.5083	0.0611**
β_{i7}	*PerInsOwn*	Negative	-0.4559	0.2343	3.7866	0.0517***	0.3938	0.4284	0.8451	0.3579
β_{i8}	*Block H*	Indeterminable	-0.1109	0.2604	0.1815	0.6701	0.1280	0.2194	0.3404	0.5596
β_{i9}	*Auditor*	Indeterminable	-0.2656	0.4379	0.3679	0.5441	-0.1945	0.3807	0.2609	0.6095
β_{i10}	*Regulator*	Positive	0.1554	0.3405	0.2082	0.6482	-0.2540	0.2947	0.7427	0.3888
β_{i11}	*Firm Size*	Positive	0.7865	0.3541	4.9326	0.0264**	0.1394	0.0803	3.0131	0.0826***
β_{i12}	*ConLosses*	Negative	0.3306	0.3199	1.0677	0.3015	0.2768	0.2731	1.0272	0.3108
β_{i13}	*NoAC Members*	Positive	N/A	N/A	N/A	N/A	0.6686	0.2125	9.9053	0.0016*
			Chi-Square (Significance): 119.631 (0.000*)				Chi-Square (Significance): 112.692 (0.000*)			

Where: *, **, *** = significant 1%, 5% and 10% confidence levels (two-tailed) respectively. See Tables I and II for variable definitions.