

Board Evaluation DOES Matter

Findings from listed companies in Singapore

Abstract

Using agency theory as the theoretical framework and a sample size of 227 companies listed on the mainboard of the Singapore Exchange, the study tests several hypotheses concerning six board variables under the 'Board Matters' section of the Singapore code of corporate governance.

Using a paired-samples t test the study finds a significant and positive change for five (out of six) of the board variables between the application of the 2001 Code and the revised version (2005 Code). The change was not statistically significant for the board leadership variable.

The study contributes to the corporate governance literature by using a TwoStep cluster analysis procedure to test the impact on firm performance and firm risk of the six 'Board Matters' variables. The analysis found that the only board variable that was statistically positively associated with performance was linked to companies that undertook a formal evaluation of their boards.

One of the ironies of board practices is that while they expect performance evaluations to be undertaken for the management and staff of the companies in which they are directors, the board rarely applies the same practice of evaluation to its' performance.

The results of this study provides evidence that directors should consider imposing the same performance evaluation used for management and staff to both themselves and the entire board given the inherent benefits of such practices as espoused in organisational and motivational theory

1 INTRODUCTION

One of the positive developments resulting from the Asian financial crisis in 1997 was in the area of corporate governance. Following the crisis, many countries in Asia set up associations and institutes to teach and promote corporate governance practices in their respective countries with a particular focus in the area of transparency and independence.

Another indication that improvements in corporate governance practices are on the rise in Asia can also be seen by the adoption in a number of countries of codes of best practices for corporate governance. Cheung and Chan (2004), note that some of the Asian countries, like Malaysia, South Korea, Thailand, Hong Kong and China, already have modeled their codes after the standards used in the OECD countries, and that since the 1990s, many countries in the Asia-Pacific region have made dedicated efforts to enhance and improve their corporate governance standards.

For Singapore, a relevant starting point would be when the Corporate Governance Committee, jointly commissioned by the Ministry of Finance, the Monetary Authority of Singapore and the Attorney-General's Chambers, was formed in January 2000 to undertake a review of the corporate governance practices in Singapore, with the objective of recommending the appropriate governance principles and best practices for Singapore.

On 21 March 2001, this committee presented Singapore's first code of corporate governance to the government. This was subsequently accepted on 4 April 2001 (2001 Code). In this code, Singapore adopted the balanced approach that was disclosure-based as exemplified by the way it is operated in Canada and the UK.

Subsequent to this, in the spirit of enhancing the standing of Singapore as a hub for finance and business activities, a review of the 2001 Code was commissioned by the government, with the aim of making improvements to corporate governance practices by listed companies. The review was undertaken by the Council on Corporate Disclosure and Governance (CCDG) established on 16 August 2002 with 15 members drawn from business, the professions, academia and the government and chaired by the Chairman of the Singapore Exchange.

Recommendations from this committee were submitted on 3 June 2005 and accepted by the Singapore government, with the exception of two points related to how independent directors

are to be defined and on remuneration matters for directors. On 14 July 2005, the Ministry of Finance issued a press release to announce the revised code, known as ‘The code of corporate governance 2005’ (2005 Code), which was to replace the first code issued in April 2001.

2 MOTIVATION

Given Singapore’s ambitions to be a financial hub in Asia and her strong corporate and regulatory regime, this study aims to gain a better understanding of the corporate governance practices of Singapore’s mainboard listed companies, focusing on the changes in board governance practices between the two Codes and its impact on firm performance and riskiness. The study is also timely given the recent establishment of the Corporate Governance Council in Singapore to review and update the existing Code.

With the myriad availability of studies linking corporate governance to firm performance (Gompers, Ishii & Metrick 2003; Bai *et al.* 2004) and firm risk (Black, Jang & Kim 2006; Selvaggi & Upton 2008), this study provides evidence about which aspects of board governance has the greatest impact on firm performance and/or firm risk.

In so doing, it is hoped the results will pacify companies critical of the requirements of the code and skeptical about the value of “good corporate governance” – as argued in a speech by Tharman Shanmugaratnam, the Minister for Education and Second Minister for Finance, at the 2007 Singapore Corporate Awards presentation (Siow 2007) – to seek good and qualified directors for their boards.

In presenting the findings of the research, the paper is structured as follows. Section 3 provides a brief review of the relevant literature and the hypotheses for this research. Section 4 outlines the data and methodologies used for the study. Section 5 presents the results and Section 6 concludes the paper by addressing the key implications of the study for the different stakeholders as well as the limitations of the research.

3 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

3.1 Agency Theory

Despite the plethora of theories and models that have been developed over time to try to explain the purpose of corporate governance, a popular theory used by scholars in extant studies is agency theory. Given the pre-dominant usage of this theory, which is also the

theoretical underpinning of the Singapore Code of Corporate Governance, the study adopts this theory for model development purposes.

An agency relationship is defined simply as “a contract under which one or more persons (the principal) engages another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent” (Jensen & Meckling 1976, p. 308).

From a corporate governance perspective, agency theory is concerned with the protection of shareholder interests due to these agency problems, which typically are of two forms. First, a moral hazard problem occurs when the objectives of the principal and agent differ (Walker 1989), and second, due to asymmetrical information flow from the agent’s perspective, there is the concern that the principal may be unable to monitor the activities of the agent to ensure that actions taken will not be to their detriment (Frankforter, Berman & Jones 2000).

Jensen & Meckling (1976) explained that the consequence of the above is to incur an agency cost that essentially is the summation of a monitoring expense (for the principal), a bonding expense (for the agent) and a residual loss (due to conflicting objectives). In the words of Hindley, there is not much reason to doubt that “if managers are free from the control of the owners, they will divert wealth from them” (Hindley 1970, p. 186).

3.2 Corporate Governance, Firm Performance and Firm Risk

In February 2003, Gompers, Ishii & Metrick (2003) published the result of their findings linking corporate governance practices to firm performance, which would quickly become a benchmark for further studies in this area. Subsequent to that, using data similar to the above study, Bebchuk, Cohen & Ferrell (2004) created an “Entrenchment Index” and found that only a small subset of the measures is relevant in determining a firm’s value.

Other studies corroborating the linkage between good governance and firm performance include Cremers & Nair (2005) and Brown & Caylor (2006) which combined both internal and external governance mechanisms, Bøhren & Ødegaard (2004) which based its study on a high quality data set from the Oslo Stock Exchange and in Asia, Bai, Liu *et al.* (2004) who found positive results using Tobin’s *q* and market-to-book value ratios.

From a risk perspective, some studies are beginning to show beneficial results. For example, using an interesting colour coding system known as ‘The institutional voting information

service' that measures the compliance level of UK listed companies to best practices in the area of corporate governance, Selvaggi & Upton (2008) analysed 361 companies over a 60-month period and found that good governance generally leads to higher share prices and were also less volatile, generating a greater risk-adjusted return when compared with poorly-governed companies.

Similar results were also found by Black, Jang & Kim (2006) who reported a strong linkage between a corporate governance index and share price performance for Korean public companies after accounting for endogeneity problems as well as reduced risk as these companies "appear to enjoy a lower cost of capital" (Black, Jang & Kim 2006, p. 368).

3.3 Singapore Codes of Corporate Governance

In Singapore, when the first code of corporate governance came into effect in 2003, it was designed to be disclosure-based to enable investors to make appropriate judgments on the quality of the company's performance and its governance practices. These recommendations were presented in the form of 15 principles and associated guidance notes divided into four sections of: (a) Board Matters, (b) Remuneration Matters, (c) Accountability & Audit, and (d) Communication with Shareholders.

In the revised code of corporate governance (2005 Code), these four sections and 15 principles remained essentially unchanged except from being a principle and guidance notes format under the 2001 Code to a structure of principles, guidelines and commentaries under the 2005 Code.

Given that a number of the corporate governance failures have come from poor governing of companies by their boards of directors (Kirkpatrick 2009; Muhiudeen 2009), the focus in this paper is on the quality of boards. It therefore is expected that in view of the evolutionary process in which corporate governance has developed globally, albeit in a different manner and pace, "Corporate governance in Singapore has similarly undergone evolution" (Shanmugaratnam 2007, p. 3). This, when combined with the increasingly important roles that boards play in ensuring that the company is well-governed, coupled with their duties of loyalty and fiduciary responsibilities, suggests that in Singapore board governance matters should have improved.

3.3.1 Board Matters

The six key principles on ‘Board Matters’ in the 2001 version of the code and retained in the 2005 version of the code (referred to hereafter as The Codes) are used in this study. These are related to: (a) the board’s conduct of (its)¹ affairs, (b) board composition and (balance)² guidance, (c) Chairman and Chief Executive Officer, (d) board membership, (e) board performance, and (f) access to information. A brief review of the above variables is described below.

The board’s conduct of (its) affairs

One interesting discovery made by Brown & Caylor (2006) in their review of the Gompers, Ishii & Metrick (2003) results was that out of the 24 variables used in the creation of the G-Index, seven were deemed to be highly linked to the G-Index, which accounted for most of its relationship with the firm’s value. Of these seven variables, one was related to the directors meeting attendance record. Specifically, under two separate methodologies of: (a) regressing Tobin’s q on all the 51 governance factors associated with the ISS, and (b) mirroring the technique adopted by Bebchuk, Cohen & Ferrell (2004), it was found that the variable requiring “all the directors attend at least 75% of board meetings or had a valid excuse for non-attendance” (Brown & Caylor 2006, p. 419) to be significant at the 5% and 10% levels, respectively.

The importance of board attendance was also relevant in the study done by Cornforth (2001). In researching the measures of what influences board performance, he found that board attendance (as part of the board structure) as measured by the percentage of members who attend board meetings was “significantly correlated with board effectiveness” (Cornforth 2001, p. 225).

The board’s composition and (balance) guidance

The jury still is out on whether there is a relationship between a board’s composition and firm performance (Barnhart, Marr & Rosenstein 1994). For example, in some studies that focused on outside directors as the main component of board composition, a positive relationship was found to exist (Coles & Hesterly 2000). Other studies, like those done by Hutchinson (2002) observed a negative relationship, while scholars like Daily & Dalton (1992) found no relationship between board structure and performance.

¹ This refers to 2001 version.

² This refers to 2001 version.

Why these differences? There are a number of possible reasons. The first reason could be the different types of performance measurement variables used in the studies (Gani & Jermias 2006). The second reason could be the data collection sources and methodologies applied to perform the tests (Young 2003). A third reason could be the inconsistencies of operationalising aspects of board composition used for data measurement purposes (Dalton *et al.* 1998, p. 272), while the fourth reason could be the non-inclusion or moderating effects of other explanatory variables as noted by Muth & Donaldson (1998). Lastly, the fifth reason could be on the direction of causality whereby some studies found evidence that the firm's performance determined the board's composition (Hermalin & Weisbach 1988) rather than the other way around, which is consistent with organisational theory when poor performance acts as the catalyst for initiating changes (Tushman & Romanelli 1985).

Chairman and Chief Executive Officer

The majority of results obtained by extant research have found the relationship between board leadership structure and firm performance to be inconclusive. One reason for this could be the business situation of the company. For instance, Finkelstein & D'Aveni (1994) indicate that the choice of leadership structure is temporal in nature, suggesting that changing circumstances impact the type of leadership required. For example, in situations in which the company is doing well, they argue that a separate leadership structure is preferred, as there is fear that their ability to monitor the CEO's actions could be impacted, hence adversely affecting their oversight responsibilities.

Another example can be found from an important piece of work by Dalton *et al.* (1998) where using a meta-analytic approach they found no meaningful relationship between a firm's leadership structure and its financial performance. Other studies that have found no significant relationship (in differing circumstances and environments) between the board's leadership structure and firm performance were; Mak & Kusandi (2005) and Wan & Ong (2005).

Board membership

In both the 2001 and 2005 versions of the Singapore code of corporate governance, the key principle associated with board membership matters was the establishment of a nominating committee to undertake the various responsibilities applicable in that area. However, research into the roles that nominating committees play as part of the board's responsibilities has been sparse.

In terms of direct relevance, the study by Vafeas (1999) into the relationship between the nominating committee and board quality is more appropriate. Using data from the Silver Platter database on 606 large US public firms, he found that although the nominating committee had no impact on the number of outside directors on the board, there was more impact on the quality of the board because of the greater independence of these directors. Additionally, the findings also suggest that companies having a nominating committee are more protective of the interest of shareholders.

Ruigrok *et al.* (2006), studying the board composition of 210 companies on the Swiss Stock Exchange and interweaving three theoretical approaches of agency, resource-dependency and group effectiveness, found support for how agency and resource-dependency theories help explain how boards are composed as well as how they behave, but no support for the element of diversity that suggests in part that “A multi-theoretic approach to corporate governance is essential for recognising the many mechanisms and structures that might reasonably enhance organisational functioning” (Daily, Dalton & Cannella 2003, p. 372).

Board performance

The proxy used to study board performance is through the board evaluation process. It is therefore believed that “board evaluation can contribute to effective boards and improved corporate financial performance” (Minichilli, Gabrielsson & Huse 2007, p. 609). Another way of looking at this is to consider board evaluation as part of what makes a board effective and thereafter relate it to how it results in a superior performance for firms (Warther 1998). However, as noted by Minichilli, Gabrielsson & Huse, there is no “one size fits all” evaluation mechanism that companies can use, as these board evaluations have to address “the agent, the addressee, the content and the modalities” (Minichilli, Gabrielsson & Huse 2007, p. 610).

Given the importance attached to evaluation by both board members (Conger, Finegold & Lawler III 1998), external parties (Kiel & Nicholson 2005) and academia (Sonnenfeld 2002), research into board evaluation matters has focused largely on content (Conger, Finegold & Lawler III 1998; Kazanjian 2000) rather than other factors that may impact the evaluation process and ultimately firm performance.

Access to information

In the governance codes of Singapore, the importance of information is the sixth principle under the category of ‘Board Matters,’ where it states that as part of the responsibilities as directors, information should be provided that is “complete, adequate and timely”³. In addition, the importance attached to information is enshrined in the statutes and laws of Singapore as found in the Singapore Companies Act and the SGX listing manual.

Studies into the façade of board information, though limited, are also promising. Nowak & McCabe (2003), for instance, using a novel grounded theory approach, interviewed 45 directors of Australian listed companies and found that the CEO and executive directors of the company have the power to manage the flow of information to the non-executive directors. The study also found that access to relevant information requires the directors to be proactive in their information harvesting activities – but eventually conceded that for both inside and outside directors, integrity, honesty and transparency are the underlying keys.

Rutherford & Buchholtz (2007) concur with the findings above. Their study revealed that board vigilance reduces the level of information asymmetry between outside directors and the CEO. Using a survey method from 149 companies in a defined industry segment of US firms, they found a positive association between the use of outside directors and their tenor of service with better information quality.

3.4 Hypothesis Development

In view of the increased global focus on good corporate governance following a number of high profile corporate collapses, it is expected that there has been a positive approach adopted by listed companies in Singapore in complying with The Codes between the two periods with each variable within the ‘Board Matters’ section.

Therefore, the following hypotheses are tested:

H1a: There is a greater degree of compliance by companies to publish their board attendance record for the 2005 Code as compared with the 2001 Code.

H1b: There is a greater degree of compliance with the minimum recommended composition of independent directors of the board for the 2005 Code as compared with the 2001 Code.

³ This is found in the 2001 Code, p. 4 and the 2005 Code, p. 8.

H1c: There is a positive change in the number of companies having a Chairman who is separate from the Chief Executive for the 2005 Code as compared with the 2001 Code.

H1d: There is a greater degree of compliance with the minimum recommended composition in the nominating committee for the 2005 Code as compared with the 2001 Code.

H1e: There is a greater degree of compliance with the formal evaluation of the boards for the 2005 Code as compared with the 2001 Code.

H1f: There is a greater degree of compliance with board members having access to information in the company for the 2005 Code as compared with the 2001 Code.

With the promotion of good governance practices and a general trend in research studies that supports a positive linkage to firm performance and a reduction in firm risk, the research further proposes that each of these constructs will be positively associated to firm performance and inversely associated with firm risk. The hypotheses relevant to test these questions are:

H2a: There will be a positive association between each board variable and firm performance.

H2b: There will be a negative association between each board variable and firm risk.

4 RESEARCH DESIGN AND METHODS OF ANALYSIS

The data source for this research came from the company annual reports and the ‘Yahoo Finance’ web site which was hand collected over a period of six months. To ensure data integrity, verification for accuracy occurred under a three-step process. The first step focused on ensuring that the data collected were consistent, given the variety of ways in which the information was presented in the annual reports. The second step involved checking manually through a box-ticking process that the data collected was incorporated into the correct fields with the final step involving reconfirming a random sample of 50 companies (more than 20% of the sample) against the information in the annual reports.

For historical time-series data, an automated data retrieval system developed by Hoadley (2009) was used. This program essentially automated the extraction of a user-defined time-series of data from the ‘Yahoo Finance’ web site⁴ and computed both of the risk measures required for the testing of the second hypothesis.

⁴ The data series uses the price data adjusted for corporate actions.

A point to note is that under The Codes, compliance was based on when the Annual General Meeting (AGM) of the company was held. For the 2001 Code, this was effective for AGMs that were held from 1 January 2003, while the 2005 Code was effective for AGMs that were held from 1 January 2007. In order to avoid having to deal with companies presenting partial financial information, which would make comparisons difficult, the sample for the research covered all mainboard listed companies that were incorporated in Singapore by 31 December 2001.

Additionally, as the focus was on Singapore incorporated companies that were governed under the laws and regulations of the Republic of Singapore, foreign incorporated companies listed in Singapore at that time were also excluded. This resulted in a final sample of 227 companies or 454 in total covering both periods of the study.

4.1 Independent Variable Measures

The hypotheses tested in this study used the framework associated with The Codes as its reference point; hence, the constructs created for the independent variables were linked to the six areas under the section on ‘Board Matters’. In the coding process, some of these labels were renamed without changing the intent, to better reflect the operation of the construct.

Board attendance

The first principle under the heading of ‘Board Matters’ in The Codes is presented as ‘The Board’s Conduct of (its)⁵ Affairs.’ From the computational perspective, a value of zero was accorded to companies that did not publish the attendance record of directors at board meetings, while a value of one was given if such attendance record was published. The associated label for this construct is BA.

Board independence

The second recommendation in The Codes on ‘Board Matters’ is related to the area of ‘Board Composition and (Balance)⁶ Guidance.’ The objective of the principle stated by The Codes is to have a strong element of independence on the board. From a computational perspective, as the recommendation is based on a minimum proportion in board representation by independent directors, a zero score was attached if less than one-third of the board consisted of independent directors, while a score of one was given if they made up at least one-third of the board. The associated label for this construct is BI.

⁵ This applies only for the 2001 Code.

⁶ This applies only for the 2001 Code.

Board leadership

The third principle under The Codes, is entitled ‘Chairman and Chief Executive Officer’. The objective of the principle is to balance power at the top of the company, thus avoiding a concentration of power issues. As both versions of the codes require only a separation in the leadership structure between the Chairman of the board and the CEO, computationally, zero signified that the Chairman and CEO is the same person, while the value of one signifies different persons. The associated label for this construct is BL.

Board membership

The fourth principle is related to board membership matters. Here, the objective of the principle is to ensure that a formal and transparent process is undertaken in the appointment of new members to the board.⁷ The recommended way to achieve this objective is through the establishment of a formal body known as the nominating committee that have at least three directors on the committee and that the majority of members (including the Chairman) are independent.⁸ From a scoring perspective, a value of one was accorded to the construct if the minimum requirements as specified in the above guidance notes/guideline were complied with. Where these conditions were not met, the value of zero was assigned to the construct. The associated label for this construct is BM.

Board evaluation

The fifth principle in The Codes, relates to matters associated with board performance. The key recommendation by The Codes is for the inclusion of a formal assessment of the board which also takes into account the contribution of each director to the overall effectiveness of the board. From a computational perspective, a value of one was accorded when there was a formal process involved in the board evaluation process. Where this was not the case, a value of zero was assigned to the construct. The associated label for this construct is BE.

Board access to information

The sixth and final part of the board variable associated with The Codes relates to access to information. In terms of the labeling linked to the construct, the paper adopted a similar terminology as that used in The Codes. Operationalising this construct follows the declaration in the annual report that separate and independent access to the senior management of the company is allowed. As the outcome can be only one of two forms – “No” if not indicated

⁷ Point 4 (2001 & 2005 Codes).

⁸ Point 4.1 (2001 & 2005 Codes).

and “Yes” if indicated – for computation purposes, a zero value is attached if no information on the access to senior management is declared in the annual reports and a value of one is given when such information is specified. The associated label for this construct is BAI.

4.2 Dependent Variable Measures

Two measures are used in the paper as the dependent variable. The first focused on a performance measurement aspect, while the second looked at a risk measurement perspective. The approach to using both performance and risk as dependent variables is rarely used in studies on corporate governance. However, current research is moving in that direction, as seen in recent studies by Selvaggi & Upton (2008), who combined both measures to find that better governed companies deliver a higher risk-adjusted return, while Black, Jang & Kim found that better governed companies “appear to enjoy a lower cost of capital” (Black, Jang & Kim 2006, p. 368). This research also includes measures of performance and risk consistent with the well accepted view in finance that looking at returns in isolation from risk is an incomplete picture of the overall end result (Sharpe 1964).

Performance measures

Under the performance measurement category, studies in the area of corporate governance have used a variety of variables to measure performance. These can be generalised into two broad categories: accounting-based measures and market-based measures, with both equally justifiable when accounting for the effects of market efficiency and the relevance of information as suggested by Fama (1970).

Given the extensive debate associated with performance measurement and with no consensus on the preferred indicator to use (Dalton *et al.* 1998), this study employs multiple measures of firm performance as suggested by Zahra & Pearce (1989) in order to evaluate adequately the independent variables being tested. Accordingly, the study uses both an accounting-based and a market-based measure as its first set of dependent variables.

For the accounting based measure the main measures used are return on assets or return on equity. This research uses the return on equity (ROE), computed as profit after tax divided by the total equity of the shareholders, as its accounting-based performance measure, which is easily available from public sources.

For the market based measure the two main measures used are the market-to-book ratio of common equity (computed as the market capitalisation of the company divided by its book

value) and Tobin's q . Some studies have found Tobin's q and the market-to-book value to be closely correlated and adopted the market-to-book value as a good proxy for Tobin's q (Conyon & Peck 1998; Shin & Stulz 2000). Accordingly, given the cross-sectional structure of the sample and the simplicity involved in accessing the share price information, the study adopted the approach used by Banhart, Marr & Rosenstein (1994), Conyon & Peck (1998) and Shin & Stulz (2000) of the market-to-book value (MBV) as the variable for measuring market-based performance.

Risk measures

One of the main contributions of this study involves the incorporation of risk measures into the analysis. The inclusion of a risk element is important given the recent emphasis and interest by both practitioners and scholars in the field of corporate governance. This study uses two common indicators in the form of volatility and beta as the operational variables for measuring the riskiness of the firm, similar in concept to the studies of Roberts, McNulty & Stiles (2005) and Selvaggi & Upton (2008).

Mathematically, the volatility (VOL or σ) is computed by taking the standard deviation of an asset over a period of time (which is essentially taking the square-root of the variance).

As the data is time series-based, the period chosen was between the two financial year-end dates associated with The Codes using the daily closing prices. This time period was chosen as it enabled the full effects of changes between the first and second versions of The Codes to be captured in the prices.⁹

Mathematically, the beta (BETA or β) is computed by taking the covariance of the asset and market return divided by the return of the market (Schwendiman & Pinches 1975). In this study, to remain consistent with the computation of the VOL measure, the closing prices of the stock between the two financial year-end dates consistent with The Codes were used to compute the stock's covariance. This process of using the same time-series of data will also enable the measure to consider every possible event inherent during that time period, increasing the robustness of the results.

⁹ As a result of using the period between the 2001 and 2005 Codes, the volatility values are associated only with the 2005 Code. The volatility value of the 2001 Code was not computed as it also would require four years of historical data, which would have reduced the sample size.

As for the market index, the most widely used market indicator in Singapore as presented by the newspapers and finance-related web sites is the Straits Times Index (STI).

4.3 Control Measures

In order to control for other elements that could have an influence on the profitability of the company, and also to reduce spurious correlations, four of the more commonly used control variables found in previous studies of corporate governance are included in the analysis. These are board size, leverage of the company, ownership levels of directors in the company and the size of the firm. These are briefly described below.

Board size

Given the inconclusiveness in the direction associated with the size of the board to firm performance, but the statistical significance of the findings by scholars of a relationship, this variable is included as a control variable using the approach by Conyon & Peck (1998) and in the Singapore context, Wan & Ong (2005), of using the total number of directors on the board as the measure for board size.

Leverage

Leverage (LEV) is added to the list of control variables due to the role it plays from an external governance control point of view. This comes in part because creditors of the firm are expected to occupy an important monitoring role as they manage their credit exposure to the firm, which takes on greater importance when the capital structure of the company becomes more highly geared (Hutchinson & Gul 2004). Following the work of Chaganti & Damanpour (1991), leverage in this study is computed as a standard ratio of the total debt of the firm divided by its shareholder equity.

Director ownership

Although studies of the relationship between director ownership (DIROWN) and firm performance generally have been mixed (Morck, Shleifer & Vishny 1988; curvilinear in the case of McConnell & Servaes 1990; Dalton *et al.* 1999), the possibility that such a relationship exists suggests that studies involving elements of board members must control for this variable (Joh 2003). One reason for this relationship is the incentivisation of the directors to ensure that the firm continues to create value – which generally correlates positively to the directors' own personal wealth (Morck, Shleifer & Vishny 1988). Another reason to include this variable is to control for the negative relationship between inside

ownership concentration and the number of independent directors as found by Hermalin & Weisbach (1992).

Accordingly, following the recommendation by Bhagat & Black (1999), the study incorporates this variable. The computed value follows the ratio used by Morck, Shleifer & Vishny (1988) of dividing the total number of shares owned by all the directors¹⁰ (including deemed interest) of the firm to the total number of shares outstanding by the company.

Size of the company

The size of the company has been one of the most used control variables in empirical analysis as a number of authors have found that company size influences firm performance (Fama & French 1992; Frank & Goyal 2003). Although a number of measures have been used to measure firm size, following the recent work of Shin & Stulz (2000) and Brown & Caylor (2006), the research adopts the log of total assets (LOGTA) as its measure of firm size, which also has the benefit of reducing the amount of heteroscedasticity.

4.4 Model Development and Methodology

From a statistical analysis perspective, two types of models are used. To answer the various research questions formulated in hypothesis one, paired-samples *t* test which computes whether the means of the two samples in each of the independent variables are significantly different are used.

In respect of testing for hypothesis two, cluster analysis using the TwoStep process is utilised. This technique was chosen given the results of recent studies showing the inability of regression analysis to capture “the essence of these complex constructs,” (Larker, Richardson & Tuna 2007, p. 964) because most studies use single variable measures or composite indices. However, where significant findings are found, to provide empirical rigor, these findings will then be validated using normal OLS technique as suggested by Klein (1998).

The main software package used for the analysis of the dataset is version 17.0 of the SPSS statistical software package named PASW.

¹⁰ Strictly speaking, Morck, Shleifer & Vishny (1988) excluded directors whose stakes are below 0.2% of the outstanding shares, which is due to data limitation as their data source of using the Corporate Data Exchange excluded these shareholders.

5 DATA ANALYSIS AND DISCUSSION OF RESULTS

5.1 Descriptive Statistics

The descriptive statistics for the sampled companies are as follows. For companies under the 2001 code, board members were predominately male dominated, with 93.5% males. The number of directors averaged 7.51 directors, consisting of 2.76 executive directors (EDs), 1.31 non-executive directors (NEDs) and 3.44 independent directors (IDs). From a board composition perspective, ED comprised 36.8%, NEDs 17.4% and IDs 45.8%. Board meetings held during the financial year averaged 4.19 times, with the fees paid to the NEDs and IDs averaging \$180,476 per company or \$38,039 per director. Table 1 summarises the information associated with the directors for the 2001 Code.

**** INSERT TABLE 1 HERE ****

For companies under the 2005 code, Singapore boards continued to be male dominated, with 93.4% male, and had an average board size of 7.50 directors, which was made up of 2.48 EDs, 1.32 NEDs and 3.70 IDs. From a board composition perspective, these translate to 33.1% EDs, 17.6% NEDs and 49.4% IDs. Board meetings held during the financial year averaged 4.43 times, with the fees paid to the NEDs and IDs averaging \$263,727 per company or \$52,560 per director. Table 2 summarises the information associated with the directors for the 2005 Code.

**** INSERT TABLE 2 HERE ****

5.2 Results for Hypothesis One

Given the evolutionary progress of corporate governance practices globally and the changes in the corporate regulatory environment in Singapore since the recommendation of the first set of principles of best practices in 2001 under the Singapore code of corporate governance and the 2005 revision, hypothesis one predicted that between the two periods of The Codes, a positive change with the board aspects would take place with the individual board constructs being measured. The results of the analysis are reported in Tables 3 & 4 and the conclusions reached are described and explained below.

**** INSERT TABLE 3 HERE ****

Table 3 shows that BA saw a 4.8% increase in the number of companies publishing their attendance record to 98.2%, while BI saw a 7.1% increase in compliance with the minimum

requirements to 97.4%. Additionally, BM had an increase in compliance from 78.9% to 93.8% while BAI increased by 8.4% from 80.6% to 89%. The highest and lowest levels of increases in the level of compliance were the BE construct, which went from 15% to 65.2%, and BL, which was up by only 1.8% to 62.6%.

Table 4 shows the results of the t test and indicate that all board constructs except for the BL variable were statistically significant at the 0.01 level.

**** INSERT TABLE 4 HERE ****

In the first hypothesis, the primary objective was to ascertain that given the general improvements of corporate governance practices both globally and in Singapore, it was postulated that board governance practices as found in The Codes under the section on 'Board Matters' improved between the two periods of The Codes. This was the case for all elements except for the board leadership construct.

5.3 Results for Hypothesis Two

As explained earlier, the purpose of undertaking this process was to identify if all the constructs within the 'Board Matters' section of The Codes had an impact on firm performance and firm risk given the limitations of using OLS regression techniques as identified by researchers.

For example, Larcker, Richardson & Tuna (2007) using a principal component analysis found combinations of corporate governance variables that explain firm performance by determining which aspect among the different board variables significantly impacted the performance measures. This study employs a variant of the principal component analysis called the TwoStep cluster analysis.

This section reports the results of this analysis. The six individual board constructs are selected under the procedure as categorical variables given its binary form, while the dependent and control variables will be defined as continuous variables. Statistical significance is also computed at the 0.05 level by the software.

5.3.1 Results for the 2001 Code

The TwoStep cluster analysis undertaken for the sample of companies under the 2001 Code produced three cluster groups. Table 5 provides a summary for these three clusters.

**** INSERT TABLE 5 HERE ****

Cluster one – ‘Compliant’ group

The first cluster has a lower than average BDSIZE of 7.18 members. Against performance values, the ROE in that cluster of 3.2% is similar to the return with the rest of the sample, while that of its MBV value of 0.86 is the lowest among the three clusters. On its debt profile, it has the lowest LEV ratio at 0.46 compared with the general average of 0.64. Ownership of shares by directors in the cluster is higher than the average at 38.7%, while the size of companies in the cluster is slightly below the general average. This cluster comprises 103 companies or 45.4% of the total in the sample, making it the largest cluster of the three.

Board attributes of statistical significance associated with this cluster consist of BM, BAI, BE, BI and BA. The sole board variable not within this cluster relates to BL. Additionally, this cluster had on average a lower level of LEV than the other two clusters that were statistically significant. Given the high degree of compliance with the board variables, this cluster was named the ‘Compliant’ group and is represented graphically in Figures 1 and 2.

**** INSERT FIGURE 1 HERE ****

**** INSERT FIGURE 2 HERE ****

Cluster two – ‘Bureaucratic’ group

The second cluster has a higher than average BDSIZE of 8.67 members. On performance values, the ROE of 0% is the lowest among the three groups, while that of its MBV value of 1.32 is the highest among the three groups. It also has the highest LEV ratio at an average of 1.15, almost twice the general average of 0.64. Ownership of shares by directors in the company is the lowest among the three groups at 14.6%, or less than half the average, while the size of the company is the largest among the three. This cluster consists of 49 companies or 21.6% of the total in the sample, making it the smallest cluster.

Board attributes of statistical significance associated with this cluster include only two variables – BE and BA. Additionally, the group of companies in this cluster generally is larger in size at both the board and firm level, with a low level of ownership by the directors. Given the profile above, this cluster was named the ‘Bureaucratic’ group and is represented graphically in Figures 3 and 4.

** INSERT FIGURE 3 HERE **

** INSERT FIGURE 4 HERE **

Cluster three – ‘Ordinary’ group

The third and last cluster has a lower than average BDSIZE of 7.19 members. On performance values, the ROE is the highest at 5.6% while that of its MBV value of 0.89 is slightly lower than average. It also has a lower than average LEV ratio, at 0.57. Ownership of shares by directors in the cluster is about the same as the first cluster at 38.7%, slightly higher than the average, while the size of the company is slightly below the general average. This cluster comprises 75 companies or 33% of the total number of companies in the sample.

Board attributes of statistical significance associated with this cluster include four variables – BM, BAI, BI, and BE. Additionally, the only attribute associated with the group of companies in this cluster that is statistically significant relates to the smaller than average LOGTA. Given the profile above, this group was named the ‘Ordinary’ group and is represented graphically in Figures 5 and 6.

** INSERT FIGURE 5 HERE **

** INSERT FIGURE 6 HERE **

Summary of clusters profiles under the 2001 Code

After determining the cluster structures, a summary of the cluster groupings was performed, providing a description of the components of the board variables within each cluster. Additionally, for each cluster group, a compliance ratio was computed to determine the level of compliance with each of the board variables in the three categories. The results are reported in Table 6.

** INSERT TABLE 6 HERE **

Within the ‘Compliant’ group, there was 100% compliance with four of the board variables. Of the remaining two variables, compliance with the BL construct was the lowest among the three clusters while the BE construct was not complied with at all. This suggests that the key differentiating factor for this group is related to a reluctance to undertake a formal evaluation of its boards. This group also tends to be more conservative in their capital structure.

Within the 'Bureaucratic' group, compliance with all of the board variables was high, with the BE variable having the highest compliance ratio among the three groups. Consistent with such groups, size is important given the higher than average board size and asset levels, which came at the expense of poor financial results and low ownership levels.

Finally, under the 'Ordinary' group, the compliance ratio was lower than average in all categories except for the BA construct, which was only slightly higher than average. Additionally, BE had a low compliance ratio of 2.67%. This group generally consists of the smaller-sized companies.

From the above summary, no cluster had all of the six board attributes that differentiated it from the rest of the sample, although the 'Compliant' group came close with four out of the six variables. Additionally, these three clusters did not have any of the dependent measures of ROE and MBV showing any statistical significance

5.3.2 Results for the 2005 Code

The TwoStep cluster analysis undertaken for the sample of companies under the 2005 Code also produced three cluster groups. Table 7 provides a summary for the three clusters.

** INSERT TABLE 7 HERE **

Cluster one – 'No Evaluation' group

The first cluster has the lowest BDSIZE of 7.08 members. On performance values, the ROE in that cluster of 9.4% is higher than the average of 7.8%, while that of its MBV value of 1.48 is slightly below the average of 1.72. On its debt profile, it has a lower than average LEV ratio of 0.42. Ownership of shares by directors in the company was the highest at 34.8%, compared with the average of 32%, while the size of the companies is slightly lower than the average. In terms of risk, it has a slightly lower than average firm specific risk among the three clusters, but the highest risk from a BETA perspective. The number of companies in this group is 64, or 28.2% of the total.

Board attributes of statistical significance associated with this cluster include BE, BM, and BAI. However, from the firm characteristic perspective, the only statistically significant findings relate to the lower than average level of debt in this group of companies. Given the profile above, this group was named the 'No Evaluation' group and is represented graphically in Figures 7 and 8.

** INSERT FIGURE 7 HERE **

** INSERT FIGURE 8 HERE **

Cluster two – ‘Performance Evaluator’ group

The second cluster has the highest BDSIZE of 7.74 members. On performance values, it also had the highest ROE in that cluster of 11.4% while that of its MBV value of 1.58 is slightly lower than the average. On its debt profile, it has a below average LEV ratio at 0.43. Ownership of shares by directors in the company at 31.6% is similar to the average. The size of the company is marginally higher than the average, while in terms of risk it shares a similar profile to the ‘No Evaluation’ group under both risk measures of VOL and BETA. The number of companies in this cluster is 126 firms, or 55.5% of the total, which incidentally is also the largest cluster.

Board attributes of statistical significance associated with this cluster include only BE and BAI, while its firm characteristics of statistical significance are the lower than average LEV ratios and higher than average ROE. Given the profile above, this group was named the ‘Performance Evaluator’ group and is represented graphically in Figures 9 and 10.

** INSERT FIGURE 9 HERE **

** INSERT FIGURE 10 HERE **

Cluster three – ‘Non-Information Seeking’ group

The third and final cluster has a BDSIZE of 7.41 members which is about equal to the average of 7.50. On performance values, they were the worst performers with a ROE in that cluster of -6.81% compared with the average of 7.8%, while that of its MBV value of 2.59 is the highest. This can be explained by the latent value of listed companies given the market-wide increases in stock prices associated with the 2005 Code. It also has the highest LEV ratio of 1.72, almost three times that of the average at 0.64. Ownership of shares by directors in the company is also the lowest at 28.3% compared with the average of 32% while the size of the firm is nearly equal to the average. From a risk perspective, it has the highest firm specific risk as measured by VOL among the three clusters and the lowest risk from a BETA perspective, which suggests poor liquidity and limited movement in the price of the stock. The number of companies is the lowest, with 37 firms or 16.3% of the total.

Board attributes of statistical significance associated with this cluster are BAI and BI, while no firm specific characteristic of statistical significance was evident. Given the profile above, this group was named the ‘Non-Information Seeking’ group and is represented graphically in Figures 11 and 12.

** INSERT FIGURE 11 HERE **

** INSERT FIGURE 12 HERE **

Summary of clusters profiles under the 2005 Code

After determining the cluster structures, a summary of the groupings was performed that provided details of the make-up of components associated with the board variables within each cluster. The results are reported in Table 8.

** INSERT TABLE 8 HERE **

BA and BI had very high compliance ratios in all three groups. BL had the weakest compliance under the ‘No Evaluation’ group and the highest under the ‘Performance Evaluator’ group, which suggests that a separate leadership structure was dominant in the ‘Performance Evaluator’ group. There was also a high degree of compliance among all three groups for BM matters, with the ‘Performance Evaluator’ group having the highest level. This is consistent with its high score on the BE construct, indicating it was common practice to use the NC to undertake the formal evaluation of the board.

BE was the clear differentiator with zero compliance under the ‘No Evaluation’ group and 100% compliance under the ‘Performance Evaluator’ group. The ‘Non-Information Seeking’ group also had reasonable compliance in this area. Finally, BAI was complied with by both of the ‘Evaluator’ groups, while the ‘Non-Information Seeking’ group had a low compliance level at 32.4%.

The results suggest that the ‘No Evaluation’ group tends to be conservative in nature, given its lower than average LEV levels, which was statistically significant. Whilst the same characteristic can also be found for the ‘Performance Evaluator’ group, the lower LEV came with a higher than average financial performance, which is explained by these companies undertaking a formal evaluation of their boards and having good access to information and

senior management of the firm. Nothing of relevance to this study was found with the ‘Non-Information Seeking’ group.

The results of the analysis are also consistent with the results under the 2001 Code, where no cluster was found that had all six board constructs that were statistically significant with the sample. As for the firm characteristics associated with the dependent variables of performance and risk, only one cluster, the ‘Performance Evaluator’ group exhibited statistical significance with the accounting-based measure of ROE.

Accordingly, the results indicate that only the BE and BAI constructs were important from a firm performance perspective, while none of the board constructs were relevant from a firm risk viewpoint, leading to the partial-acceptance of hypothesis 2a and the non-acceptance of hypothesis 2b.

5.3.3 Validation of Results

To validate this outcome, using the triangulation approach as suggested by Ketchen & Shook (1996), the same six board variables together with the control variables used previously under the TwoStep cluster analysis were regressed against the accounting-based performance measure (ROE2005) as the dependent variable where a positive signed and statistically significant coefficients are expected for both the BE and BAI constructs. Table 9 details the results of the regression analysis.

** INSERT TABLE 9 HERE **

The results of the analysis are mixed as they only validate the significance of the BE2005C construct, given its statistical significance at the 0.05 level, but not the BAI2005C construct. The results of the statistically significant (at the 0.01 level) and negative signed coefficient control variables (LEV2005) were also consistent with the findings undertaken under the TwoStep cluster analysis, suggesting that these companies tend to operate with lower debt levels. However, the statistical significance of the other control variable (LOGTA2005) was not evident from the TwoStep cluster analysis results. Additionally, the Adjusted R square of 0.12 and a statistically significant (at the 0.01 level) F statistic of 4.13 suggests reasonable explanatory powers of the regression equation while unacceptable levels of multicollinearity was not detected.

The above results provide validation and further empirical proof that only the formal evaluation of the board is an important determinant of firm performance leading to a part acceptance of hypothesis H2a.

6 CONCLUSIONS

In summary, corporate governance board practices generally have improved between the two periods of The Codes, except for the board leadership construct, where compliance is relatively low and has remained virtually unchanged.

Within the individual board variables, using the TwoStep cluster analysis technique, the procedure did find the board evaluation and board access to information constructs to be positively associated with the return on equity performance measure. However, further investigations to validate the above findings confirmed that only the board evaluation construct was statistically significant using an alternative quantitative technique as a possible determinant of firm performance. In relation to firm risk, the study did not find both the risk measures to be statistically significant to any of the board variables.

6.1 Implications of Improved Board Governance Practices

The summary findings of the profiles of the companies in the sample were that Singapore boards were male dominated with more than 90% male directors and an average board size of 7.5 members who attended between four to five board meetings per financial year. Board composition in terms of the proportion of independent directors serving on the boards increased between the two periods of The Codes to approximately 50%, with directors' remuneration rising by over 46%. Given the above findings, the following implications are observed.

For companies in Singapore, the compliance bar has been raised given the high media coverage on corporate governance matters and the high profile publicity surrounding annual corporate governance rating rankings, which has led companies to become more aware of the need to observe, comply with and disclose their adherence to The Codes. As such, in the current environment, being compliant with the code has become the new standard, which has led to an across the board cost increase in directors' fees, as found in the research.

From the regulator's perspective, given the recent financial turmoil that has rocked the markets globally and the corporate woes of China stocks listed in Singapore, there have been

calls by market professionals to implement a SOX-like regime for Singapore. For example, in an article in *The Business Times*, Irving Low, Head of Governance, Risk and Compliance Services of KPMG said “more can be done by way of a SOX-like structure here” (Oh 2009), while Tan Seng Choon, a partner with Ernst & Young, said “In the US, SOX has played a significant role in enhancing investor confidence and has ultimately benefited investors” (Oh 2009).

The results of this research confirm that the disclosure-based system approach adopted for the Singapore code of corporate governance has led to a general improvement in the board governance practices of Singapore companies. This lighter touch approach, which has its underpinnings in the concept of moral suasion and peer pressure coupled with market discipline, has over a period of time raised the level of board governance practices in Singapore listed companies. If time pressure is not essential, this method has been shown to be effective in encouraging the right behaviour by companies.

Hence, it is argued that incorporating a SOX-like regime in Singapore would be detrimental to Singapore’s aspirations to be a preferred location for Asian companies to list due to the onerous requirements and costs associated with complying with such rules. An alternative to this approach is to enhance the operations of the disclosure-based system through the code of corporate governance by regularly revising and updating the codes in an incremental fashion to respond to the vagaries of the capital markets and to investor demands.

For investors, it is comforting to know that corporate governance practices of companies in Singapore have improved over time, as indicated by the results. However, given the media publicity of high profile corporate failures of companies which have purported to have good corporate governance practices, skepticism by investors on whether this compliance is in form only or in substance continues.

One way to close this gap would be for investors to exercise their rights as shareholders of the company during the AGMs and challenge the directors where they suspect compliance with corporate governance principles is in form only.

6.2 Implications on the Importance of the Board Evaluation Process

A key finding from this research is on the important role that board evaluation play in improving the performance of the company. The implication of this finding suggests that firms’ seeking to differentiate themselves from other companies from a firm performance

perspective need to spend more time and resources evaluating the effectiveness and efficiency of their boards. By doing so, the evaluation process, if undertaken correctly, increases the effectiveness of the board and can contribute to shareholder wealth creation (Minichilli, Gabrielsson & Huse 2007) through promoting trust and networking among board members (Daily & Dalton 2003), improving the understanding of what is expected from the directors (Cascio 2004) and signaling the intention to shareholders that the board is committed to improving the performance of the company (Kiel & Nicholson 2005).

Despite its prevalent usage within organisations and its known benefits from organisational and motivational theory, such evaluations are still not practiced. Reasons for companies not pursuing evaluations at both the board and individual director level may be a lack of knowledge on how to go about undertaking this task, plus dealing with the issue of how to manage the poor performance aspects of “friends” on the board. In this respect, the regulators could help facilitate this process by providing incentives for boards to undertake such tasks, either through subsidising companies’ usage of external organisations in their evaluation process and/or by providing focused training sessions to directors on board evaluation processes.

From the investors’ perspective, to aid them in making better investment decisions through the incorporation of board governance information into their analysis, a profiling of the companies in this group was undertaken. In summary, companies in this group have boards consisting of more NEDs with an average board size of 7.74 directors who hold an average of 4.62 board meetings in the financial year and are paid an average of \$50,982 in fees.

Additionally, the level of leverage in this cluster group generally is lower than the average. “Value-based” investors seeking companies that achieve a higher ROE could improve their investment selection process by considering companies that fall into the profile as described above. A summary of the characteristics is detailed in Table 10.

** INSERT TABLE 10 HERE **

Lastly, although the benefits of evaluation are prevalent in organisational literature, there are limited studies in the field of corporate governance on whether such evaluation processes undertaken by directors and boards benefit companies. This study has made a small contribution to the body of knowledge by discovering that board evaluation may have an impact on firm performance. However, the study does have some limitations in that it only

considered the evaluation process at the board level and not at the individual director level. Future studies could focus on the evaluation process in totality (inclusive of both boards as a group and directors as individuals) to determine if such activities further improve the effectiveness and quality of the board in a manner that impacts firm performance and/or risk.

6.3 Limitation of Study

Given the focus of this study, a number of limitations are highlighted. First, as the study is on mainboard listed companies in Singapore, the results are not generalisable to all listed companies in Singapore, as the “second board” listed companies in Singapore (also known as Catalist companies) were excluded from the study. Second, as the starting point was when Singapore listed companies were advised to follow the Singapore code of corporate governance, only one aspect of The Codes was studied – ‘Board Matters’. The areas comprising ‘Remuneration’, ‘Accountability & Audit’ and ‘Communication with Shareholders’ were excluded from the study.

Third, it is acknowledged that due to the data collection process of using only publicly disclosed information, there exists a possibility that a number of firms may have complied with The Codes but have chosen not to disclose their compliance, as The Codes operate under a “comply or explain” disclosure-based system. Fourth, although used only as a validation, it is acknowledge that endogeneity issues may have been present in the results associated with the OLS regression analysis used in hypotheses two. Finally, due to practical constraints, the time period of the study between the two codes, which averaged around four years, may not be sufficient to capture the full effects that changes on a firm’s corporate governance practices can have on its performance and/or risk.

BIBLIOGRAPHY

- Bai, CE, Liu, Q, Lu, J, Song, FM & Zhang, J 2004, 'Corporate governance and market valuation in China', *Journal of Comparative Economics* vol. 32, no. 4, pp. 599-616.
- Barnhart, SW, Marr, MW & Rosenstein, S 1994, 'Firm performance and board composition: Some new evidence', *Managerial and Decision Economics* vol. 15, no. 4, pp. 329-340.
- Bebchuk, L, Cohen, A & Ferrell, A, 2004, *What matters in corporate governance?*, John M. Olin Centre for Law, Economics and Business, Harvard Law School, Available from: <<http://apps.olin.wustl.edu/jfi/pdf/BebchukCohenFerrell.pdf>> [14 June 2009].
- Bhagat, S & Black, B 1999, 'The uncertain relationship between board composition and firm performance', *Business Lawyer* vol. 54, no. 3, pp. 921-963.
- Black, BS, Jang, H & Kim, W 2006, 'Does corporate governance predict firms' market values? Evidence from Korea', *The Journal of Law, Economics & Organization* vol. 22, no. 2, pp. 366-413.
- Bøhren, Ø & Ødegaard, BA 2004, *Governance and performance revisited* in Working Paper No. 28/2003 European Corporate Governance Institute.
- Brown, LD & Caylor, ML 2006, 'Corporate governance and firm valuation', *Journal of Accounting and Public Policy* vol. 25, no. 4, pp. 409-434.
- Cascio, WF 2004, 'Board governance: A social systems perspective', *Academy of Management Executive*, vol. 18, no. 1, p. 97.
- Chaganti, R & Damanpour, F 1991, 'Institutional ownership, capital structure, and firm performance', *Strategic Management Journal* vol. 12, no. 7, pp. 479-491.
- Cheung, SYL & Chan, BY 2004, 'Corporate governance in Asia', *Asia-Pacific Development Journal* vol. 11, no. 2, pp. 1-31.
- Coles, JW & Hesterly, WS 2000, 'Independence of the chairman and board composition: Firm choices and shareholder value', *Journal of Management* vol. 26, no. 2, pp. 195-214.
- Conger, JA, Finegold, D & Lawler III, EE 1998, 'Appraising boardroom performance', *Harvard Business Review* vol. 76, no. 1, pp. 136-148.
- Conyon, MJ & Peck, SI 1998, 'Board size and corporate performance: Evidence from European countries', *European Journal of Finance* vol. 4, no. 3, pp. 291-304.

- Cornforth, C 2001, 'What makes boards effective? An examination of the relationships between board inputs, structures, processes and effectiveness in non-profit organizations', *Corporate Governance: An International Review* vol. 9, no. 3, pp. 217-227.
- Cremers, M & Nair, VB 2005, 'Governance mechanisms and equity prices', *The Journal of Finance* vol. 60, no. 6, pp. 2859-2894.
- Daily, CM & Dalton, DR 1992, 'The relationship between governance structure and corporate performance in entrepreneurial firms', *Journal of Business Venturing* vol. 7, no. 5, pp. 375-386.
- Daily, CM & Dalton, DR 2003, 'Looking in the mirror: Board evaluations', *Journal of Business Strategy* vol. 24, no. 6, pp. 8-9.
- Daily, CM, Dalton, DR & Cannella, AAJ 2003, 'Corporate governance: Decades of dialogue and data', *Academy of Management Review* vol. 28, no. 3, pp. 371-382.
- Dalton, DR, Daily, CM, Ellstrand, AE & Johnson, JL 1998, 'Meta-analytic reviews of board composition, leadership structure, and financial performance', *Strategic Management Journal* vol. 19, no. 3, pp. 269-290.
- Dalton, DR, Daily, CM, Johnson, JL & Ellstrand, AE 1999, 'Number of directors and financial performance: A meta-analysis', *Academy of Management Journal* vol. 42, no. 6, pp. 674-686.
- Fama, E 1970, 'Efficient capital markets: A review of theory and empirical work', *The Journal of Finance*, vol. 25, no. 2, pp. 383-417.
- Fama, E & French, K 1992, 'The cross-section of expected stock return', *The Journal of Finance*, vol. 47, no. 2, pp. 427-465.
- Finkelstein, S & D'Aveni, RA 1994, 'CEO duality as a double-edged sword: How boards of directors balance entrenchment, avoidance and unity of command', *Academy of Management Journal* vol. 37, no. 5, pp. 1078-1108.
- Frank, MZ & Goyal, VK 2003, 'Testing the pecking order theory of capital structure', *Journal of Financial Economics*, vol. 67, no. 2, pp. 217-248.
- Frankforter, SA, Berman, SL & Jones, TM 2000, 'Boards of directors and shark repellents: Assessing the value of an agency theory perspective', *Journal of Management Studies* vol. 37, no. 3, pp. 321 - 348.
- Gani, L & Jermias, J 2006, 'Investigating the effect of board independence on performance across different strategies', *The International Journal of Accounting* vol. 41, no. 3, pp. 295-314.

- Gompers, P, Ishii, J & Metrick, A 2003, 'Corporate governance and equity prices', *Quarterly Journal of Economics* vol. 118, no. 1, pp. 107-155.
- Hermalin, BE & Weisbach, MS 1988, 'The determinants of board composition', *RAND Journal of Economics* vol. 19, no. 4, pp. 589-606.
- Hermalin, BE & Weisbach, MS 1992, 'The effects of board composition and direct incentives on firm performance', *Financial Management* vol. 20, no. 4, pp. 101-112.
- Hindley, B 1970, 'Separation of ownership and control in the modern corporation', *The Journal of Law and Economics* vol. 13, no. 1, pp. 185-221.
- Hoadley, 2009, *Hoadley Trading & Investment Tools*, Available from: <<http://www.hoadley.net/options/options.htm>> [19 January 2009].
- Hutchinson, M 2002, 'An analysis of the association between firms' investment opportunities, board composition and firm performance', *Asia Pacific Journal of Accounting and Economics* vol. 9, no. 1, pp. 17-19.
- Hutchinson, M & Gul, FA 2004, 'Investment opportunity set, corporate governance practices and firm performance', *Journal of Corporate Finance* vol. 10, no. 4, pp. 595-614.
- Jensen, MC & Meckling, WH 1976, 'Theory of the firm: Managerial behaviour, agency costs and ownership structure', *Journal of Financial Economics* vol. 3, no. 4, pp. 305-360.
- Joh, SW 2003, 'Corporate governance and firm profitability: Evidence from Korea before the economic crisis', *Journal of Financial Economics*, vol. 68, no. 2, pp. 287-322.
- Kazanjian, J 2000, 'Assessing boards and individual directors', *Ivey Business Journal* vol. 64, no. 5, p. 45.
- Ketchen, DJ, Jr. & Shook, CL 1996, 'The application of cluster analysis in strategic management research: An analysis and critique', *Strategic Management Journal* vol. 17, no. 6, pp. 441-458.
- Kiel, GC & Nicholson, GJ 2005, 'Evaluating boards and directors', *Corporate Governance: An International Review* vol. 13, no. 5, pp. 613-631.
- Kirkpatrick, G 2009, 'The Corporate Governance Lessons from the Financial Crisis', *Financial Markets Trends* vol. 2009/1, no. 96, pp. 1-30.
- Klein, A 1998, 'Firm performance and board committee structure', *The Journal of Law and Economics* vol. 41, no. 1, pp. 275-303.
- Larker, DF, Richardson, SA & Tuna, I 2007, 'Corporate governance, accounting outcomes and organizational performance', *The Accounting Review* vol. 82, no. 4, pp. 963-1008.

- Mak, YT & Kusnadi, Y 2005, 'Size really matters: Further evidence on the negative relationship between board size and firm value', *Pacific-Basin Finance Journal* vol. 13, no. 3, pp. 301-318.
- McConnell, JJ & Servaes, H 1990, 'Additional evidence on equity ownership and corporate value', *Journal of Financial Economics*, vol. 27, no. 2, pp. 595-612.
- Minichilli, A, Gabrielsson, J & Huse, M 2007, 'Board evaluations: Making a fit between the purpose and the system', *Corporate Governance: An International Review* vol. 14, no. 4, pp. 609-622.
- Morck, R, Shleifer, A & Vishny, RW 1988, 'Management ownership and market valuation: An empirical analysis', *Journal of Financial Economics*, vol. 20, pp. 293-315.
- Muhiudeen, S 2009, 'Directors, take a hard look in the mirror', *The Straits Times* 12 January, p. A20.
- Muth, MM & Donaldson, L 1998, 'Stewardship theory and board structure: A contingency approach', *Corporate Governance: An International Review* vol. 6, no. 1, pp. 5-28.
- Nowak, MJ & McCabe, M 2003, 'Information costs and the role of the independent corporate director', *Corporate Governance: An International Review* vol. 11, no. 4, p. 300.
- Oh, BP 2009, 'A Sarbanes-Oxley regime for Singapore', *The Business Times* 11 April, p. 12.
- Roberts, J, McNulty, T & Stiles, P 2005, 'Beyond agency conceptions of the work of the non-executive director: Creating accountability in the boardroom', *British Journal of Management* vol. 16, no. Supplement 1, pp. S5-S26.
- Ruigrok, W, Peck, S, Tacheva, S, Greve, P & Hu, Y 2006, 'The determinants and effects of board nomination committees', *Journal of Management & Governance* vol. 10, no. 2, pp. 119-148.
- Rutherford, MA & Buchholtz, AK 2007, 'Investigation the relationship between board characteristics and board information', *Corporate Governance: An International Review* vol. 15, no. 4, pp. 576-584.
- Schwendiman, CJ & Pinches, GE 1975, 'An analysis of alternative measures of investment risk', *The Journal of Finance*, vol. 30, no. 1, pp. 193-200.
- Selvaggi, M & Upton, J 2008, *Governance and performance in corporate Britain* in Research Paper 7 Association of British Insurance.

- Shanmugaratnam, T 2007, 'Opening address by Minister for Education and Second Minister for Finance', in *OECD Asian Corporate Governance Roundtable* Available from: <http://www.mas.gov.sg/news_room/statements/2007/Speech_by_Mr_Tharman_and_Second_Minister_for_Finance_at_The_OECD2007.html>, Regent Hotel, Singapore [27 June 2007].
- Sharpe, WF 1964, 'Capital asset prices: A theory of market equilibrium under conditions of risk', *The Journal of Finance*, vol. 19, no. 3, pp. 425-442.
- Shin, HH & Stulz, RM 2000, *Firm value, risk and growth opportunities* in Working Paper No. 7808 National Bureau of Economic Research
- Siow, LS, 2008, *Many firms still need convincing on good governance: Tharman*, 30 May. Available from: <<http://www.businesstimes.com.sg/sub/storyprintfriendly/0,4582,235773,00.html?>> [30 May 2007].
- Sonnenfeld, J 2002, 'What makes great boards great', *Harvard Business Review* vol. 80, no. 9, pp. 106-113.
- Tushman, M & Romanelli, E 1985, 'Organization evolution: A metamorphosis model of convergence and reorientation', in *Research in Organizational Behavior* vol. 7, eds BM Staw & LL Cummings, JAI Press, Greenwich, CT, pp. 171-232.
- Vafeas, N 1999, 'The nature of board nominating committees and their role in corporate governance', *Journal of Business Finance & Accounting* vol. 26, no. 1 & 2, pp. 199-225.
- Walker, M 1989, 'Agency theory: A falsificationist perspective', *Accounting, Organizations & Society* vol. 14, no. 5/6, pp. 433-453.
- Wan, D & Ong, CH 2005, 'Board structure, process and performance: Evidence from public-listed companies in Singapore', *Corporate Governance: An International Review* vol. 13, no. 2, pp. 277-290.
- Warther, VA 1998, 'Board effectiveness and board dissent: A model of the board's relationship to management and shareholders', *Journal of Corporate Finance* vol. 4, no. 1, pp. 53-70.
- Young, B 2003, 'Corporate governance and firm performance: Is there a relationship?' *Ivey Business Journal*, vol. 68, no. 1, pp. 1-4.
- Zahra, S & Pearce, J 1989, 'Boards of directors and corporate financial performance: A review and integrative model', *Journal of Management*, vol. 15, no. 2, pp. 291-334.

Appendix – Figures & Tables

Figure 1 – Board attributes of the ‘Compliant’ group

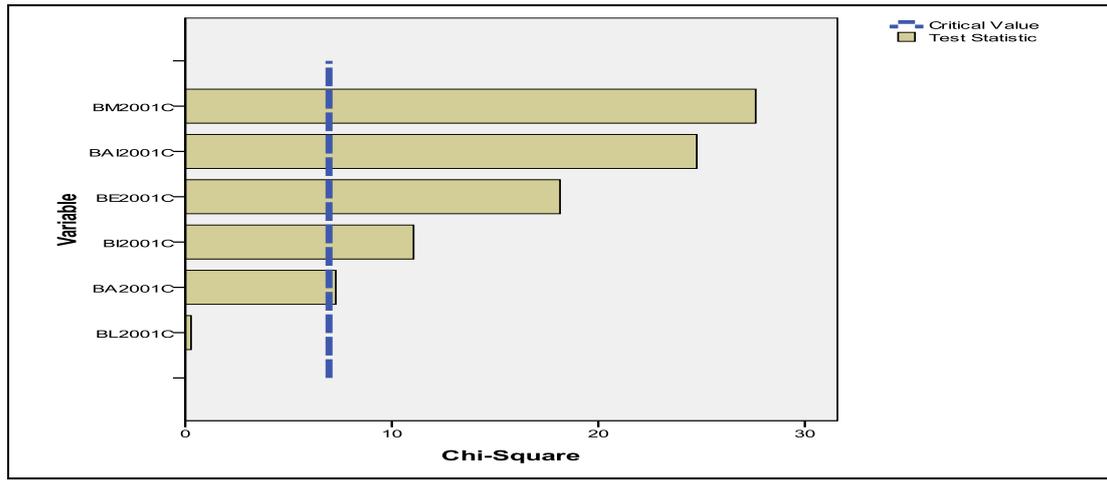


Figure 2 – Firm characteristics of the ‘Compliant’ group

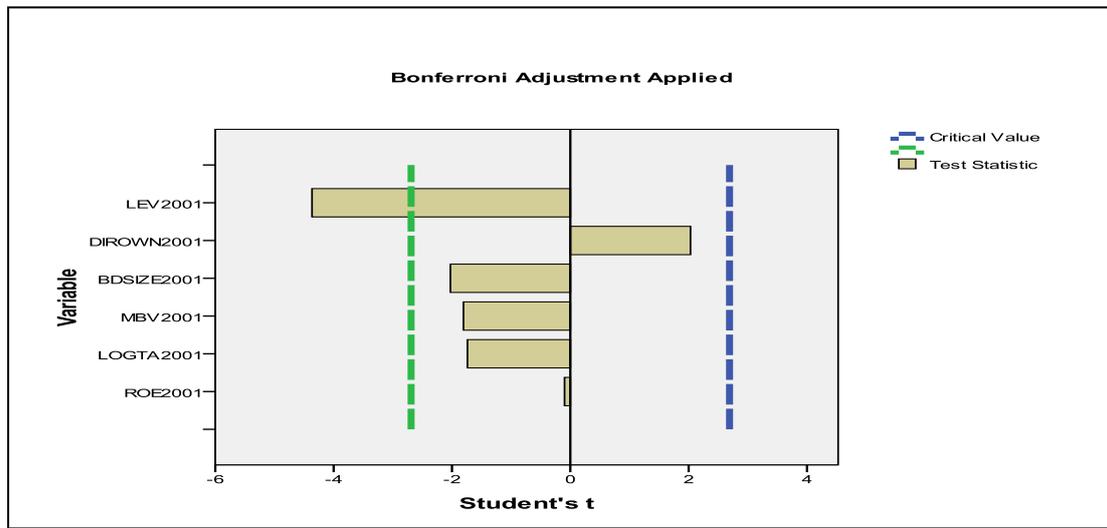


Figure 3 – Board attributes of the ‘Bureaucratic’ group

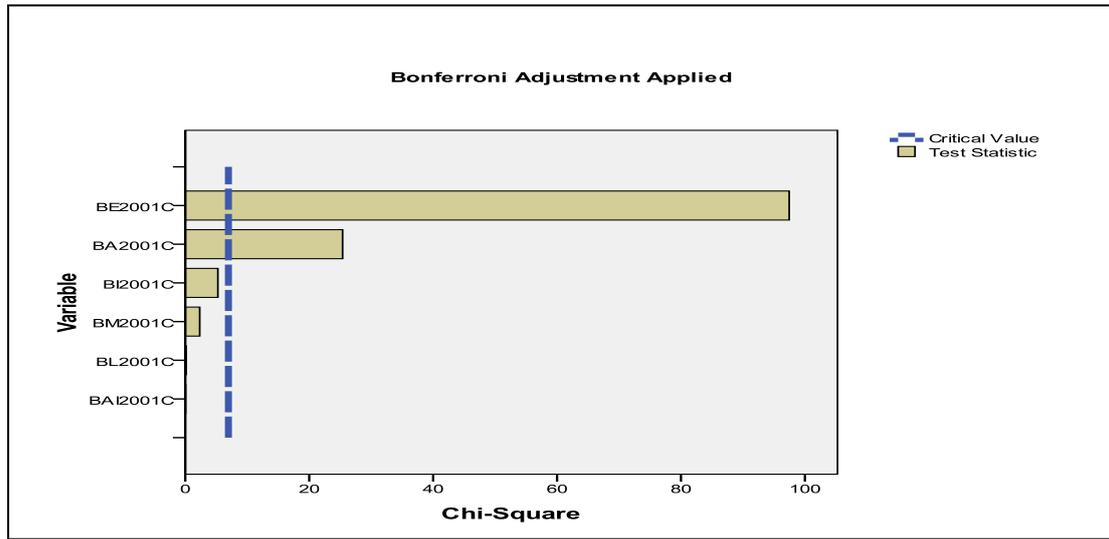


Figure 4 – Firm characteristics of the ‘Bureaucratic’ group

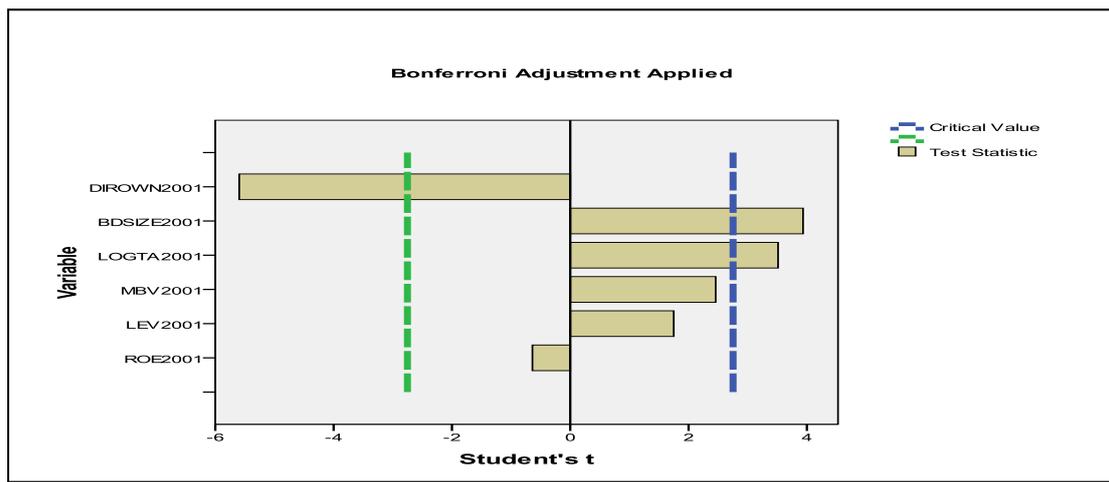


Figure 5 – Board attributes of the ‘Ordinary’ group

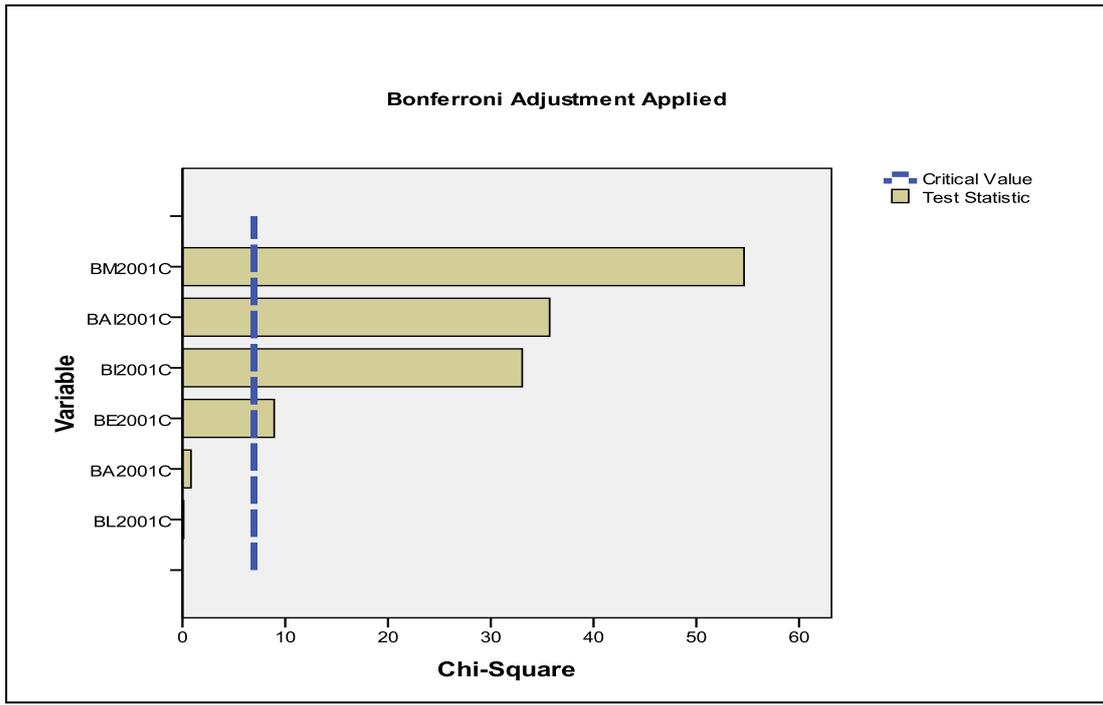


Figure 6 – Firm characteristics of the ‘Ordinary’ group

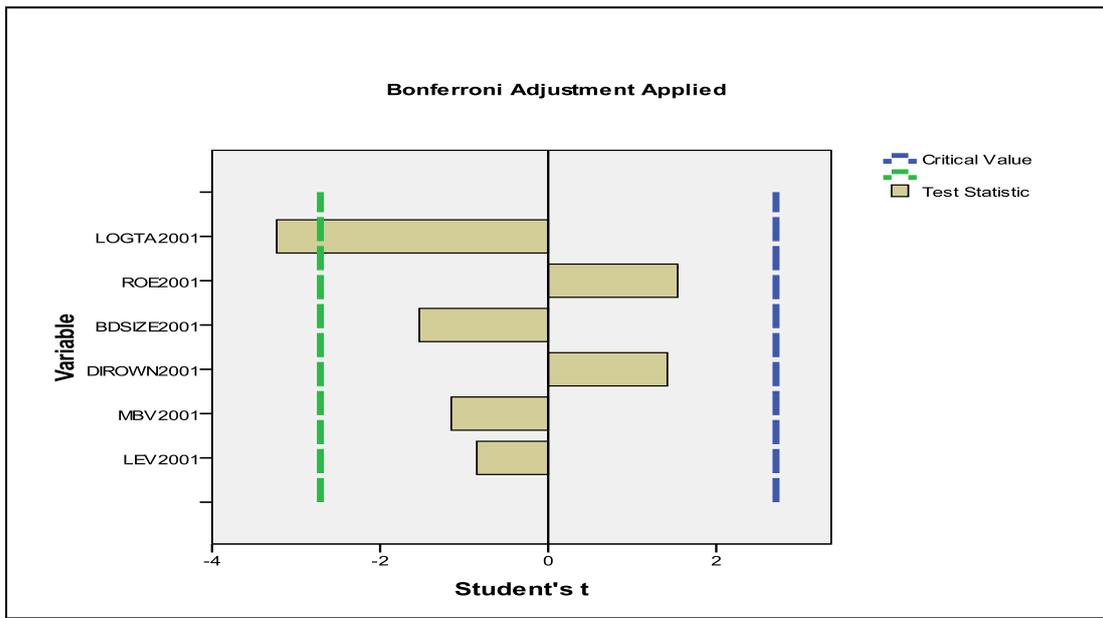


Figure 7 – Board attributes of ‘No Evaluation’ group

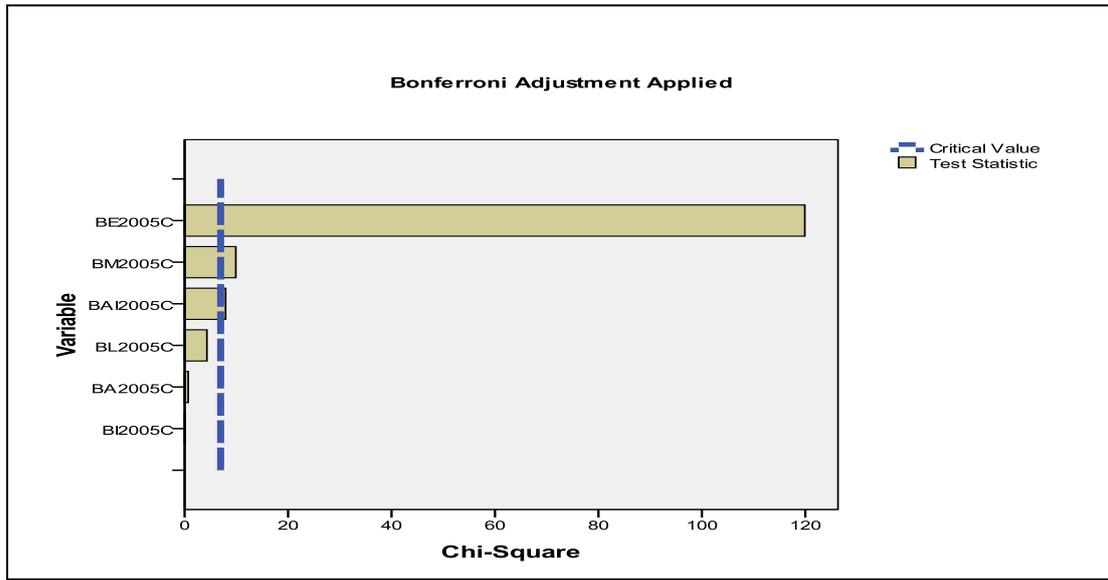


Figure 8 – Firm characteristics of ‘No Evaluation’ group

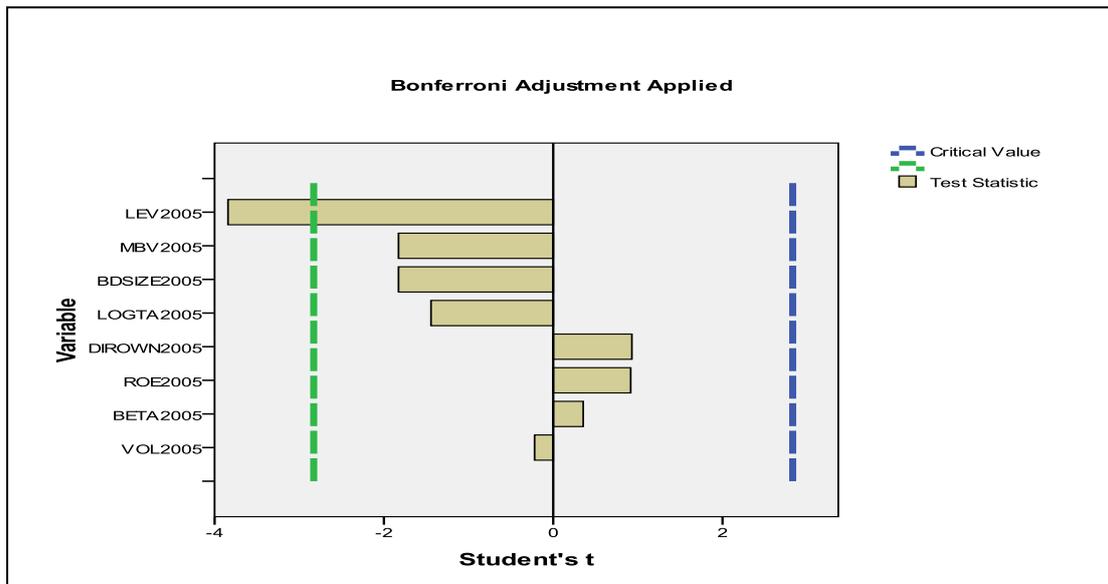


Figure 9 – Board attributes of ‘Performance Evaluator’ group

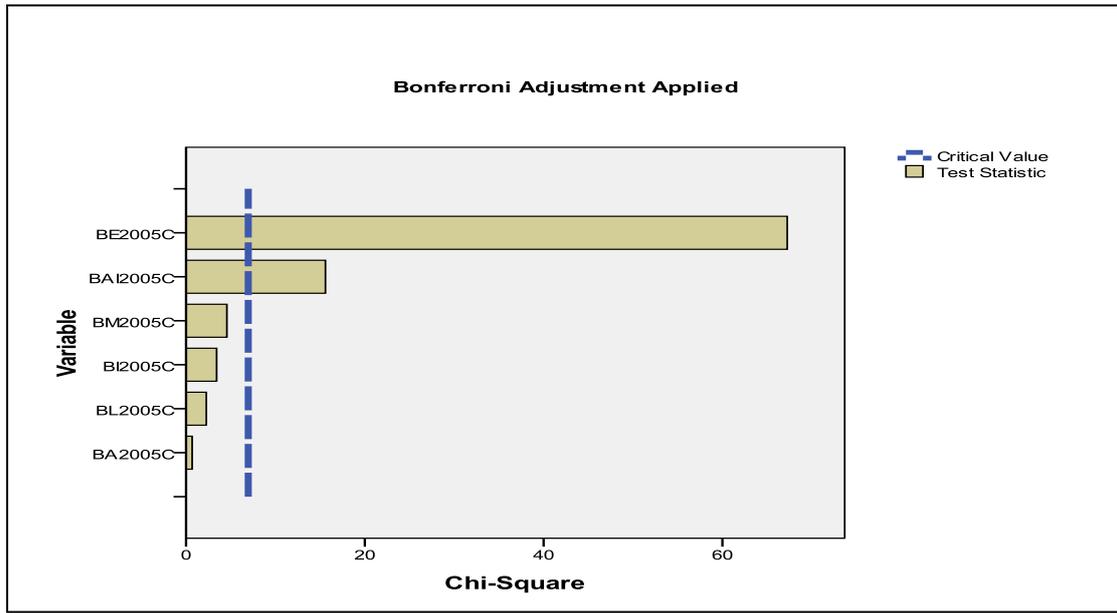


Figure 10 – Firm characteristics of ‘Performance Evaluator’ group

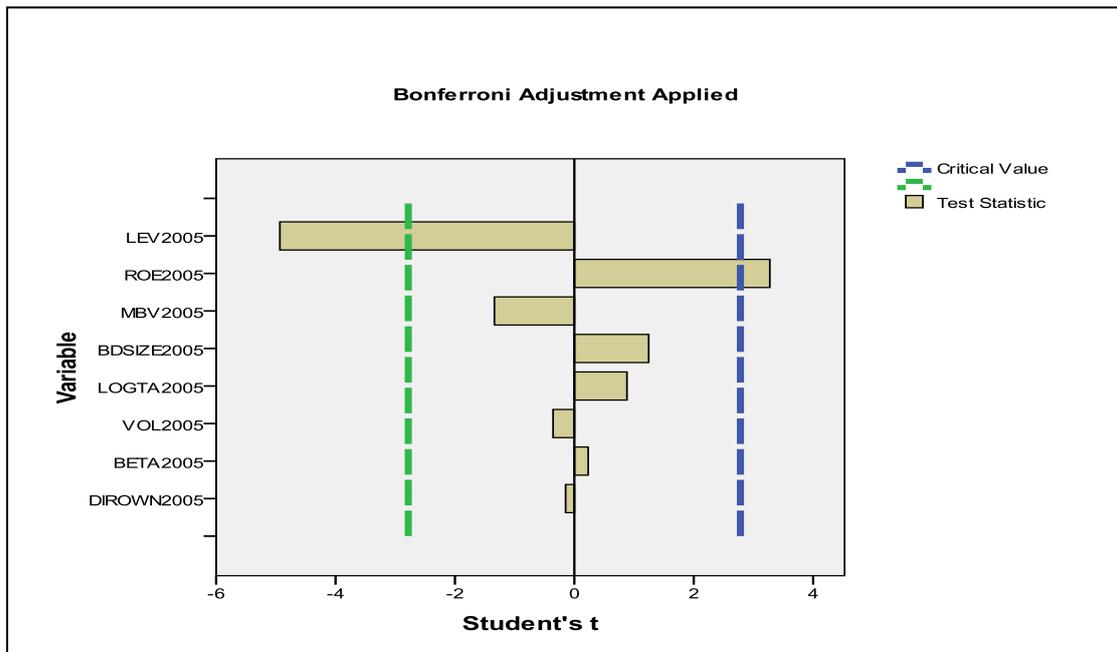


Figure 11 – Board attributes of ‘Non-Information Seeking’ group

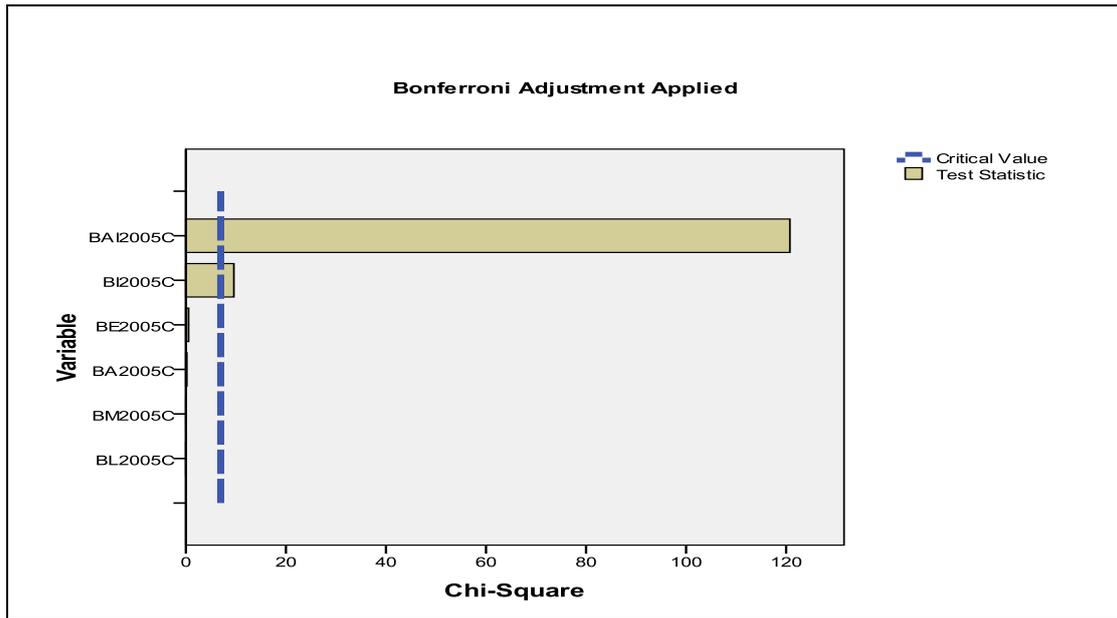


Figure 12 – Firm characteristics of the ‘Non-Information Seeking’ group

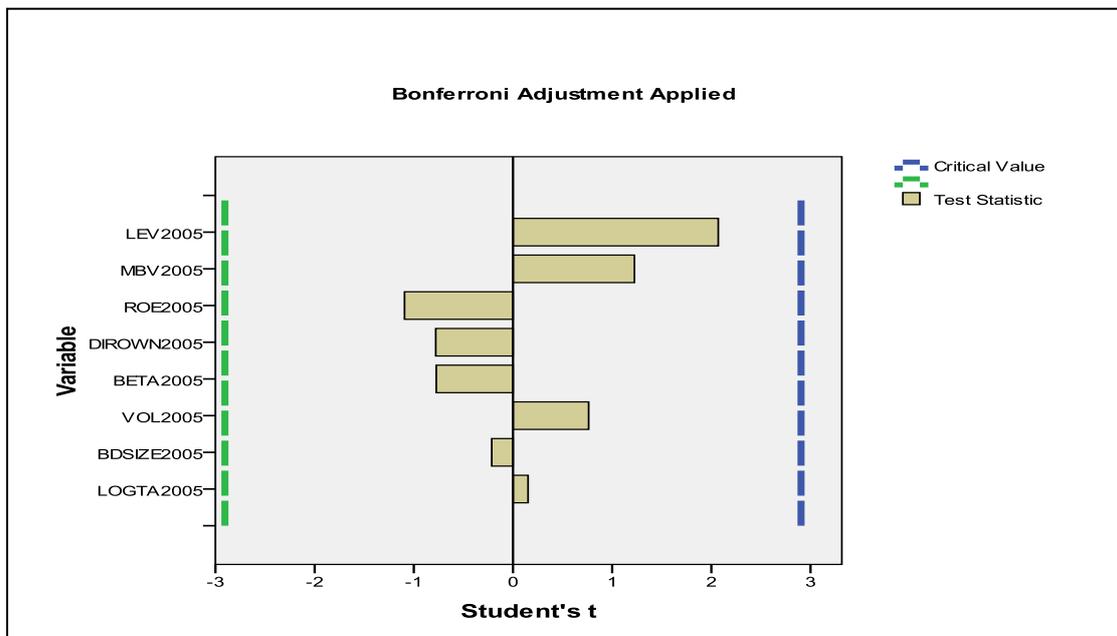


Table 1 – Summary of directors information for the 2001 Code

Description	Male	Female	EDs	NEDs	IDs	TD	Mtgs.	Remn.
Absolute number/amount	1593	111	627	297	780	1704	950	\$40,968,020
Average number/amount	7.02	0.49	2.76	1.31	3.44	7.51	4.19	\$180,476
Percentages	93.50	6.50	36.80	17.40	45.80	100	-	-
Avg. per director (NEDs & IDs)	-	-	-	-	-	-	-	\$38,039

Table 2 – Summary of directors information for the 2005 Code

Description	Male	Female	EDs	NEDs	IDs	TD	Mtgs.	Remn.
Absolute number/amount	1589	113	563	299	840	1702	1005	\$59,866,040
Average number/amount	7.00	0.50	2.48	1.32	3.70	7.50	4.43	\$263,727
Percentages	93.36	6.64	33.08	17.57	49.35	100	-	-
Avg. per director (NEDs & IDs)	-	-	-	-	-	-	-	\$52,560

Table 3 – Summary of non-compliance/compliance outcome for the 2001 & 2005 Codes

Description	2001 Code			2005 Code		
	Non-Compliance	Compliance	Mean	Non-Compliance	Compliance	Mean
BA	15 (6.6%)	212 (93.4%)	0.934	4 (1.8%)	223 (98.2%)	0.982
BI	22 (9.7%)	205 (90.3%)	0.903	6 (2.6%)	221 (97.4%)	0.974
BL	89 (39.2%)	138 (60.8%)	0.608	85 (37.4%)	142 (62.6%)	0.626
BM	48 (21.1%)	179 (78.9%)	0.789	14 (6.2%)	213 (93.8%)	0.938
BE	193 (85.0%)	34 (15.0%)	0.150	79 (34.8%)	148 (65.2%)	0.652
BAI	44 (19.4%)	183 (80.6%)	0.806	25 (11.0%)	202 (89.0%)	0.890

Where: BA is board attendance, BI is board independence, BL is board leadership, BM is board membership, BE is board evaluation, BAI is board access to information.

Table 4 – Paired samples *t*-test

	Paired Differences					Pearson Corr.	Pearson Corr. Sig.	t	df	Sig. (1- tailed)
	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference						
				Lower	Upper					
BA2001C – BA2005C	-0.048	0.253	0.017	-0.082	-0.015	0.234	0.000**	-2.886	226	0.002**
BI2001C – BI2005C	-0.070	0.304	0.020	-0.110	-0.031	0.224	0.001**	-3.494	226	0.001**
BL2001C – BL2005C	-0.018	0.376	0.025	-0.067	0.032	0.702	0.000**	-0.706	226	0.241
BM2001C – BM2005C	-0.150	0.382	0.025	-0.200	-0.100	0.405	0.000**	-5.914	226	0.000**
BE2001C – BE2005C	-0.502	0.527	0.035	-0.571	-0.433	0.229	0.001**	-14.360	226	0.000**
BAI2001C – BAI2005C	-0.084	0.335	0.022	-0.128	-0.040	0.575	0.000**	-3.761	226	0.000**

Where: BA is board attendance, BI is board independence, BL is board leadership, BM is board membership, BE is board evaluation, BAI is board access to information.

* Significant at the 0.05 level.

** Significant at the 0.01 level.

Table 5 – Cluster profiles and distribution for the 2001 Code

		Cluster			
		'Compliant' Group	'Bureaucratic' Group	'Ordinary' Group	Combined
BDSIZE2001	Mean	7.1845	8.6735	7.1867	7.5066
	Std. Deviation	1.6133	2.0755	1.8061	1.8800
ROE2001	Mean	0.0317	0.0001	0.0563	0.0330
	Std. Deviation	0.1382	0.3597	0.1309	0.2052
MBV2001	Mean	0.8626	1.3239	0.8944	0.9726
	Std. Deviation	0.6188	1.0001	0.5877	0.7298
LEV2001	Mean	0.4585	1.1459	0.5695	0.6436
	Std. Deviation	0.4303	2.0104	0.7544	1.0957
DIROWN2001	Mean	0.3868	0.1462	0.3869	0.3349
	Std. Deviation	0.2592	0.2360	0.3176	0.2916
LOGTA2001	Mean	8.3171	8.9175	8.2086	8.4109
	Std. Deviation	0.5473	1.0095	0.5420	0.7218
N		103	49	75	227
% of Total		45.37%	21.59%	33.04%	100.00%

Where: BDSIZE is board SIZE, ROE is return on equity, MBV is market-to-book value, LEV is leverage, DIROWN is director ownership & LOGTA is log of total.

Table 6 – Board variable summary between clusters

		'Compliant' Group	'Bureaucratic' Group	'Ordinary' Group	Combined	
BA2001C	0	Frequency Percent	0 0.00%	12 80.00%	3 20.00%	15 100.00%
	1	Frequency Percent	103 48.50%	37 17.50%	72 34.00%	212 100.00%
		Compliance Ratio	100.00%	75.51%	96.00%	93.39%
BI2001C	0	Frequency Percent	0 0.00%	0 0.00%	22 100.00%	22 100.00%
	1	Frequency Percent	103 50.20%	49 23.90%	53 25.90%	205 100.00%
		Compliance Ratio	100.00%	100.00%	70.67%	90.31%
BL2001C	0	Frequency Percent	43 48.30%	18 20.20%	28 31.50%	89 100.00%
	1	Frequency Percent	60 43.40%	31 22.50%	47 34.10%	138 100.00%
		Compliance Ratio	58.25%	63.27%	62.67%	60.79%
BM2001C	0	Frequency Percent	0 0.00%	6 12.50%	42 87.50%	48 100.00%
	1	Frequency Percent	103 57.60%	43 24.00%	33 18.40%	179 100.00%
		Compliance Ratio	100.00%	87.76%	44.00%	78.85%
BE2001C	0	Frequency Percent	103 53.40%	17 8.80%	73 37.80%	193 100.00%
	1	Frequency Percent	0 0.00%	32 94.10%	2 5.90%	34 100.00%
		Compliance Ratio	0.00%	65.31%	2.67%	14.98%
BAI2001C	0	Frequency Percent	0 0.00%	9 20.50%	35 79.50%	44 100.00%
	1	Frequency Percent	103 56.30%	40 21.90%	40 21.90%	183 100.10%
		Compliance Ratio	100.00%	81.63%	53.33%	80.62%

Where: BA is board attendance, BI is board independence, BL is board leadership, BM is board membership, BE is board evaluation & BAI is board access to information.

Table 7 – Cluster profile and distribution for the 2005 Code

		Clusters			
		'No Evaluation' Group	'Performance Evaluation' Group	'Non- Information Seeking' Group	Combined
BDSIZE2005	Mean	7.0781	7.7381	7.4054	7.4978
	Std. Deviation	1.8370	2.1658	2.6189	2.1705
ROE2005	Mean	0.0938	0.1135	-0.0681	0.0783
	Std. Deviation	0.1349	0.1206	0.8145	0.3508
MBV2005	Mean	1.4829	1.5834	2.5893	1.7190
	Std. Deviation	1.0336	1.1368	4.3231	2.0346
LEV2005	Mean	0.4150	0.4392	1.7205	0.6413
	Std. Deviation	0.4711	0.4597	3.1717	1.4174
DIROWN2005	Mean	0.3483	0.3160	0.2830	0.3197
	Std. Deviation	0.2462	0.2863	0.2870	0.2753
LOGTA2005	Mean	8.4353	8.5993	8.5759	8.5492
	Std. Deviation	0.6316	0.6376	1.0672	0.7229
VOL2005	Mean	0.5519	0.5503	0.6128	0.5609
	Std. Deviation	0.3302	0.3348	0.4137	0.3467
BETA2005	Mean	0.6595	0.6506	0.5813	0.6418
	Std. Deviation	0.4003	0.4241	0.4761	0.4254
N		64	126	37	227
% of Total		28.19%	55.51%	16.30%	100.00%

Where: BDSIZE is board SIZE, ROE is return on equity, MBV is market-to-book value, LEV is leverage, DIROWN is director ownership, LOGTA is log of total assets, VOL is volatility & BETA is the stock's beta.

Table 8 – Board variables summary between clusters

			'No Evaluation' Group	'Performance Evaluators' Group	'Non-Information Seeking' Group	Combined
BA2005C	0	Frequency	2	1	1	4
		Percent	50.00%	25.00%	25.00%	100.00%
	1	Frequency	62	125	36	223
		Percent	27.80%	56.10%	16.10%	100.00%
		Compliance Ratio	96.88%	99.21%	97.30%	98.24%
BI2005C	0	Frequency	2	0	4	6
		Percent	33.30%	0.00%	66.70%	100.00%
	1	Frequency	62	126	33	221
		Percent	28.10%	57.00%	14.90%	100.00%
		Compliance Ratio	96.88%	100.00%	89.19%	97.36%
BL2005C	0	Frequency	32	39	14	85
		Percent	37.60%	45.90%	16.50%	100.00%
	1	Frequency	32	87	23	142
		Percent	22.50%	61.30%	16.20%	100.00%
		Compliance Ratio	50.00%	69.05%	62.16%	62.56%
BM2005C	0	Frequency	10	2	2	14
		Percent	71.40%	14.30%	14.30%	100.00%
	1	Frequency	54	124	35	213
		Percent	25.40%	58.20%	16.40%	100.00%
		Compliance Ratio	84.38%	98.41%	94.59%	93.83%
BE2005C	0	Frequency	64	0	15	79
		Percent	81.00%	0.00%	19.00%	100.00%
	1	Frequency	0	126	22	148
		Percent	0.00%	85.10%	14.90%	100.00%
		Compliance Ratio	0.00%	100.00%	59.46%	65.20%
BAI2005C	0	Frequency	0	0	25	25
		Percent	0.00%	0.00%	100.00%	100.00%
	1	Frequency	64	126	12	202
		Percent	31.70%	62.40%	5.90%	100.00%
		Compliance Ratio	100.00%	100.00%	32.43%	88.99%

Where: BA is board attendance, BI is board independence, BL is board leadership, BM is board membership, BE is board evaluation & BAI is board access to information.

Table 9 – OLS regression for all the board variables with the ROE under ther 2005 Code

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.401	.160	.122	.3287898

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.462	10	.446	4.127	.000**
	Residual	23.350	216	.108		
	Total	27.812	226			

Coefficients

Model		Unstandardised Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.749	.404		-1.851	.065
	BA2005C	.044	.170	.017	.259	.796
	BI2005C	-.113	.140	-.052	-.806	.421
	BL2005C	.026	.048	.035	.533	.595
	BM2005C	-.124	.094	-.085	-1.317	.189
	BE2005C	.096	.049	.130	1.973	.050*
	BAI2005C	-.113	.072	-.101	-1.572	.117
	BDSIZE2005	-.016	.013	-.099	-1.261	.209
	LEV2005	-.086	.016	-.346	-5.246	.000**
	DIROWN2005	-.016	.085	-.012	-.185	.853
	LOGTA2005	.142	.040	.292	3.556	.000**

Dependent Variable: ROE2005.

* Significant at the 0.05 level.

** Significant at the 0.01 level.

Table 10 – Directors information & market capitalisation of 'Performance Evaluator' group

Description	Abs.No.	Avg. No.	Pct.	All Companies
Number	126	-	-	227
Male	917	7.28	94.05%	93.36
Female	58	0.46	5.95%	6.64
EDs	320	2.54	32.82%	33.08%
NEDs	179	1.42	18.36%	17.57%
IDs	476	3.78	48.82%	49.35%
TD	975	7.74	100.00%	100%
Meetings	582	4.62	-	4.43
Director Remn.*	\$33,393,254	\$265,026	\$50,982*	\$52.560*

* Represents average remuneration per director (NEDs & IDs).