

CORPORATE GOVERNANCE AND DIFFERENT TYPES OF VOLUNTARY DISCLOSURE: EVIDENCE FROM MALAYSIAN LISTED FIRMS

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ABSTRACT

Purpose – The purpose of this paper is to investigate the impact of corporate governance on voluntary disclosure of different types of information in annual reports of Malaysian listed firms.

Design/methodology/approach - A linear regression model is used to test the association between the level of voluntary disclosure of five key information categories and corporate governance. The sample consists of 100 firms over three different socio-economic periods: 1996, 2001 and 2006.

Findings - There are significant increases in all the key information categories with better communication most pronounced between 1996 and 2001, and a noticeable lower level of communication growth between 2001 and 2006. The strength of a firm's corporate governance structure clearly influences the voluntary disclosure of information relating to corporate and strategic directions, directors and senior management, financial and capital markets, forward-looking projections and corporate social responsibility in 2001 and 2006.

Research limitations/implications – The use of a governance index to arrive at an overall corporate governance score has the potential to mask major underlying relationships of individual governance attributes. The use of the self-constructed disclosure indices may also omit certain information items that are employed in other prior studies. Moreover, the different categories of disclosures are solely constructed on the information disclosed in the annual reports without considering the alternative avenues.

Practical implications – The results will assist regulators and policy-makers to better understand the impact of corporate governance on the voluntary disclosure of different types of corporate information in Malaysia.

Originality/value – This study generates evidence of the changing scene of management voluntary disclosure practices embedded in the corporate governance framework in a developing country with an emerging capital market.

Keywords: voluntary disclosure, corporate governance, annual reports, Malaysia

Classification: Research paper

1.0 Introduction

Voluntary disclosures are of growing importance in today's capital market (Schuster and O'Connell, 2006). The contemporary phenomenon of globalisation of the stock market and convergence of accounting standards has raised the interests of capital market participants for enhanced information beyond the minimum statutory requirement in order to facilitate the decision-making process (Berradino, 2001). In general, disclosure encompasses release of financial and non-financial information, information relating to directors and key executives, management discussion and analysis and forward-looking information. Meek *et al.* (1995) posit that the separation of voluntary disclosure into categories is desirable as it reflects variations in decision relevance for users.

In recent years, the financial crisis and corporate scandals have brought corporate governance reform to the forefront of the regulatory agenda (Johnson *et al.*, 2000; Millar *et al.*, 2005). Firms have taken steps to strengthen their governance practices and enhance corporate accountability. Corporate governance is defined as the 'system by which companies are directed and controlled' (Cadbury Report, 1992: para 2.5). The OECD Principles of Corporate Governance take a broader perspective, describing corporate governance as a set of relationships between a company's board, its shareholders and stakeholders (OECD, 1999). The common tenet in all governance systems is the mechanism to facilitate the control of management and the achievement of maximization of firm value. The implementation of corporate governance in monitoring management is vitally important to reduce information asymmetry between management and shareholders (Jensen, 2000). Given the monitoring role of corporate

governance, it can be argued that firms with better corporate governance are likely to increase management incentives to disclose more corporate information for their stakeholders.

A prime motivation for this study stems from the fact that Malaysia has undergone a series of important regulatory regime and governance changes since the 1997 Asian financial crisis. Malaysian financial reporting practices were governed by a merit-based regulatory regime until 1997 when the new reporting framework and disclosure-based regime were phased in. In addition, the Malaysian regulatory bodies initiated more corporate governance reforms emphasizing enhanced transparency. The implicit assumption in these initiatives is that there is a link between corporate governance and firms' disclosure practices. Given these important changes, here we investigate the association between the strength of corporate governance structures and the extent of voluntary disclosure in the annual reports of Malaysian listed companies. The dual aims of this study are: (i) to determine the extent of key categories of voluntary disclosure; and (ii) to determine if corporate governance is associated with these important categories of voluntary disclosure by Malaysian listed firms over the turbulent period 1996 to 2006.

The evolutionary process of strengthening the Malaysian accounting and governance landscape presents an opportunity for an in-depth study of the extent of information communicated to external users. This study draws on a longitudinal sample of the same randomly selected 100 firms listed on the Bursa Malaysia stock exchange in 1996, 2001 and 2006. These three key periods are chosen due to the major fundamental reforms put in place in each intervening period. This longitudinal study is also important in that the association between different types of

voluntary disclosure and corporate governance structures in different regulatory regimes is rarely tested in the literature.

The study contributes to the literature in several ways. First, it extends recent literature on the association of corporate governance practices of Malaysian listed firms and extent of disclosure. Currently, there is a lack of research examining the association between the strength of governance structure and disclosure practices of firms. Reporting practices in Malaysia have evolved in line with changes in regulatory and legislative initiatives in Malaysia and also as a consequence of external shocks relating to financial crises and corporate collapses. Thus, it is important to gain an understanding of the key motivating factors and methods in the international context linking governance structure and management's disclosure incentives and practices. Second, while similar governance based research has been discussed separately in recent literature, not one study has examined the relation of strength of governance structure on the disclosure of various categories of information. Finally, this study utilizes a novel and objective measure of strength of governance structure based on the best practice recommendations and principles released by the Malaysian Securities Commission.

The results of this study show that there is a significant and positive association between strength of corporate governance structures and firms' communication of corporate and strategic, financial and capital market, forward-looking and corporate social responsibility information in firms' 2001 and 2006 annual reports. Corporate governance structure becomes an important determinant post the Asian financial crisis when regulatory features are enhanced and put in place. The spirit of corporate governance principles and recommendations is largely aimed at encouraging management to provide information more extensively on a voluntary basis in order

to enhance corporate transparency. The findings thus provide helpful empirical justifications for the regulatory regime change. The study also contributes to the current global debate on the role of corporate governance structure in enhancing corporate transparency.

The paper is structured in the following way. The next section reviews the evolution of the Malaysian accounting and regulatory environment. The third section discusses prior research and develops the main corporate governance hypotheses. Data and the research approach are described in the fourth section while the results are presented in the fifth section. The sixth section summarizes the robustness tests undertaken. The final section provides the concluding comments.

2.0 Malaysian Accounting and Governance Environment

The regulatory system is identified as one of the external corporate governance mechanisms (Denis and McConnell, 2002). The market for corporate control is not prevalent in Malaysia (Faccio *et al.*, 2006), thus the external corporate governance mechanism is largely reliant on regulatory bodies such as the Banking and Financial Institution Act, the Securities Commission Act, the Future Industry Act, the Company Commission of Malaysia and the Financial Reporting Act. There had been efforts to strengthen the aspects of good governance practices long before the Asian financial crisis in 1997, however, the efforts were done in a piecemeal basis (Abdul Rahman, 2006). In 1998, the High Level Finance Committee formed by the Malaysian Securities Commission conducted a detailed study on corporate governance which subsequently led to the introduction of the Malaysian Code of Corporate Governance (MCCG) to Malaysian listed companies in January 2001. The aim of the MCCG is to encourage disclosure by providing investors with timely and relevant information upon which decisions are made. Although

compliance with the principles and best practices of the MCCG is voluntary, listed firms are required to state in their annual reports the extent to which they have complied and to explain any circumstances that warrant deviations from best practices.

In line with the initiative, the Kuala Lumpur Stock Exchange (now known as Bursa Malaysia) issued its revamped listing requirements which included corporate governance and continuing disclosure requirements. The move was widely recognized as a major milestone in Malaysian corporate governance reform in enhancing corporate disclosure.

Prior to 1997, corporate reporting and disclosure in Malaysia was overseen by the professional accounting bodies. The regulatory regime governing the financial reporting practices of Malaysian listed firms was merit-based, under which regulators decided on the propriety of firm transactions and decisions. There was no concerted effort then to improve governance practices (Abdul Rahman, 2006). This regime arguably lowered market incentives for corporate voluntary disclosure. The accounting landscape evolved with the establishment of the new financial reporting framework, where the Financial Reporting Foundation and Malaysian Accounting Standard Board were set up under the Financial Reporting Act 1997. The Malaysian Securities Commission recommended the shift from a merit-based to disclosure-based regulatory framework, which passes responsibility of evaluating firm reporting practices to market participants. The shift to the new regime was initiated to promote a transparent and accountable capital market environment. Thus, enhanced disclosure becomes a necessity for the market to monitor company affairs under this new regime.

External events drove even more changes. For instance, global accounting scandals emanating from high profile corporate scandals generated increased controversy over corporate accounting practices and the quality of information disclosed to investors. The Malaysian regulatory bodies continued their efforts to strengthen governance and disclosure practices as reflected in the corporate disclosure framework under the Bursa Malaysia Listing Requirement where the *Best Practices in Corporate Disclosure* document was initiated in August 2004. The *Best Practices in Corporate Disclosure* advocates greater disclosures, an initiative in line with the disclosure-based regulatory regime implemented in 2001. Although these best practices are voluntary, Malaysian listed firms are 'highly encouraged' to incorporate these guidelines into their own disclosure practices, which aimed at assisting companies to move beyond minimum disclosure thresholds (Bursa Malaysia, 2004). This initiative marks another milestone in the development of corporate governance best practices for Malaysian listed firms (Yusoff, 2004). In addition, the IFRS convergence caused an important change in the Malaysian accounting landscape with greater alignment of the local MASB accounting standards with IFRS occurring in 2006.

Changes in the external regulatory regime are likely to impact on firm internal governance. In Malaysia, the change in regulatory philosophy emphasizes enhanced corporate governance and accountability as well as a reduction of information asymmetry through increased communication. Since the shift in regulatory philosophy took place over some years in Malaysia, this presents an excellent opportunity to undertake a longitudinal study to examine the influence of corporate governance on firms' disclosure practices. As disclosure is one of the main pillars of good corporate governance, it is expected that the communication provided in the annual reports will increase over time. To meet the needs of increasingly sophisticated investors, it is not

unreasonable to presume Malaysian firms are likely to disclose a greater level and variety of information on a voluntary basis.

3.0 Literature Review and Hypotheses Development

The decision to disclose information often depends on management's personal wealth considerations (Watts and Zimmerman, 1990). Jensen and Meckling (1976) postulate that separation of ownership and control of a firm provides the agent (manager) with the incentive to serve their personal interests at the expense of the principal's (shareholder's) interests. In the context of the firm, a major issue is the information asymmetry between managers and shareholders. Managers, as self-interested agents, possess information about the present and likely future performance of the firm that is superior to that acquired by shareholders. Managers can use their discretion to disclose or not disclose information to facilitate their engagement in opportunistic behaviour for personal gains (Watts and Zimmerman, 1990). Formal contracts are thus negotiated and written as a way of resolving agency conflicts. It may be possible that managers may voluntarily provide information in order to reduce bonding costs and encourage investors to invest in the company. Empirical studies have supported the agency's theoretical justification for greater disclosure in the best interest of a firm (Botosan, 1997; Francis *et al.*, 2005; Khurana *et al.*, 2006).

A number of prior studies have investigated various determinants of firms' voluntary disclosure practices. Most of these studies focus on the conventional firm-specific determinants such as size, leverage, industry and profitability (Chow and Wong-Boren, 1987; Owusu-Ansah, 1998; Leventis and Weetman, 2004; Hossain *et al.*, 1994, 1995). However, more research is needed relating to corporate disclosure with particular corporate governance attributes such as board

composition, board committee formation and independence, CEO and board chairperson duality and audit committee formation and characteristics (Forker, 1992; Eng and Mak, 2003; Chen and Jaggi, 2000; Ho and Wong, 2001; Gul and Leung, 2004; Cheng and Courtenay, 2006; Donnelly and Mulcahy, 2008). Interestingly, these past studies do not produce consistent evidence regarding the impact of these individual governance attributes on corporate disclosure.

Few studies focus on the strength of *overall* corporate governance and its effect on firms' disclosure practices, although Shleifer and Vishny (1997) suggest that a well-designed overall governance structure can help ensure firms achieve the optimum disclosure policy. Using a combination of corporate governance attributes to create a composite proxy measure, Byard *et al.* (2006) and Beekes and Brown (2006) document better-governed firms make more informative disclosure in US and Australian firms respectively. Similarly, Taylor *et al.* (2010) find that the financial risk management disclosure pattern is significantly and positively associated with the strength of corporate governance structure. Nonetheless, the primacy of corporate governance structure as an important determinant of a firm's transparent policy is refuted. O'Sullivan *et al.* (2008) do not document the same conclusions using 2000 and 2002 data. They report a consistent finding that the overall efficacy of the corporate governance system leads to disclosure of forward-looking information in the year 2000 only, but no similar finding is found for the year 2002. O'Sullivan *et al.* (2008) conclude that increased application of corporate governance mechanisms and tools do not necessarily lead to a higher incidence of forward-looking disclosure and question the effectiveness of such mechanisms in promoting greater transparency.

Research focusing on specific type of information disclosure is not as widespread as the overall voluntary disclosure. Ghazali and Weetman (2006) include different types of information as additional analysis in examining the extent of voluntary disclosure of Malaysian listed firms. Using year 2001 annual reports of Malaysian listed firms, they report that firm size and profitability are positively associated with strategic voluntary disclosure and financial voluntary disclosure. None of the corporate governance attributes is associated with different types of information disclosure. They further indicate that director ownership is negatively associated with the disclosure of financial and strategic information. Lim *et al.* (2007) examine the association between board composition and different types of voluntary disclosure of the Australian Top 500 companies. Their findings differ from Ghazali and Weetman (2006). They document that there is a positive association between board composition and voluntary strategic disclosure and forward-looking quantitative voluntary disclosure, but no association between board composition and financial voluntary disclosure.

Other prior studies have found a link between forward-looking information and various corporate governance factors. Karamanou and Vafeas (2005) report that firms with more outside directors on the board, a lower level of managerial ownership, a higher level of institutional share ownership and a smaller audit committee are more likely to make management earnings forecasts. Similarly, Ajinkya *et al.* (2005) reveal that the management earnings forecasts are positively associated with more independent boards and greater institutional ownership.

In terms of corporate social responsibility (CSR) information, Ghazali and Weetman (2006) show that Malaysian firms with a high level of director ownership tend to disclose less CSR. They do not report any association between corporate governance attributes and CSR. Haniffa

and Cooke (2005) document that the composition of non-executive directors is negatively associated with CSR, whilst chairpersons with multiple directorships have a positive association with CSR. Rouf (2011) reports a positive association between the proportion of independent directors and corporate social responsibility disclosure. These studies have produced mixed evidence regarding the impact of individual governance attributes on voluntary disclosure of CSR.

Essentially, the adoption of the principles of corporate governance arguably monitors senior management in their dealings with stakeholders (Eisenhardt, 1989). The enactment of corporate governance principles should contribute to the reduction of information asymmetry between the board and suppliers of capital. The transparency and disclosure initiatives are embedded in the MCCG, which suggests that firms with stronger governance structures are more likely to provide extensive information to stakeholders. Thus, it is reasonable to expect that a stronger governance structure as reflected in a higher corporate governance score is associated with more extensive voluntary disclosure of different types of information. For the purpose of this study, the information voluntarily communicated by sample firms can be categorized into: (i) corporate and strategic; (ii) financial and capital market; (iii) directors and senior management; (iv) forward looking; and (v) corporate social responsibility information (see Appendix 1).

To formally test the influence of a firm's overall corporate governance score on the extent of voluntary disclosure, in five key communication categories, the following hypotheses are proposed:

H1a: All else being equal, a firm's strength of governance structure is positively associated with the extent of voluntary disclosure of corporate and strategic information.

H1b: All else being equal, a firm's strength of governance structure is positively associated with the extent of voluntary disclosure of financial and capital market information.

H1c: All else being equal, a firm's strength of governance structure is positively associated with the extent of voluntary disclosure of directors and senior management information.

H1d: All else being equal, a firm's strength of governance structure is positively associated with the extent of voluntary disclosure of forward-looking information.

H1e: All else being equal, a firm's strength of governance structure is positively associated with the extent of voluntary disclosure of corporate social responsibility information.

These hypotheses are cross-sectionally tested in each of the time periods to ascertain if corporate governance structure in the three stages of development, *viz.* 1996, 2001 and 2006, remains relevant in influencing voluntary disclosure of various categories of information. The year 1996 represents the pre-Asian financial crisis phase when the accounting landscape was a merit-based regulatory regime. The 2001 year is selected to represent the post-financial crisis phase when the disclosure-based regime governed the accounting landscape and the implementation of the MCCG. The 2006 year is nominated to represent post-Enron and IFRS driven changes. This temporal analysis allows the examination of the change of voluntary disclosure practices over time.

4.0 Methodology and Data Collection

4.1 Sample

Data are collected from three critically important time periods in the evolution of Malaysian financial accounting. These are the annual reports for 1996 (representing the pre-Asian financial crisis period), 2001 (post crisis), and 2006 (post Enron and the IFRS adjustment period), of a random sample of the same 100 Malaysian listed firms, representing a total of 300 firm-years

observations. The selection criteria for the sample firms are: (i) availability of annual reports of companies for all the three periods; (ii) companies selected in 1996 must remain listed on the stock exchange in the other periods; (iii) all banks, unit trust, insurance and finance companies are excluded from the study due to different regulatory requirements; and (iv) 20 firms are chosen from each of the five key industry categories in Malaysia using stratified random sampling techniques. These categories are: (i) trading/services; (ii) consumer products; (iii) industrial products; (iv) construction and property; and (v) plantation sectors. The year 1996 represents the base year from which the sample firms are randomly drawn.

4.2 Dependent Variable

The extent of disclosure is measured by a voluntary disclosure index (DI) comprising a comprehensive list of 85 voluntary disclosure items. The voluntary disclosure index items are based on the past literature such as Meek *et al.* (1995); Barako *et al.* (2006); and Ghazali and Weetman (2006). The preliminary checklist consists of 151 items and is subject to a thorough screening by two independent individuals who are qualified Chartered Accountants from the Big Four accounting firms with specific knowledge of Malaysian accounting practices and disclosure issues. The original voluntary disclosure checklist is then double-checked against the evolving applicable approved accounting standards in Malaysia, the Companies Act 1965, Bursa Malaysia Listing Requirements, and any other relevant statutes or pronouncements that may be mandated in Malaysian reporting practices. Based on this analysis, 66 of the original 151 items are removed from the disclosure index. This extensive screening process¹ ensures that the items in the checklist remain voluntary in nature throughout the three sample frame periods.

The content of the annual reports is then classified and placed² within each of the five major categories of disclosure information (see Appendix 1) which are deemed to be relevant in decision-making (Meek *et al.*, 1995). Strategic and financial information categories have obvious decision relevance for investors whereas the non-financial information category focusing on firm's social responsibility targets a wide spectrum of stakeholders. According to Chau and Gray (2002), the variables affecting voluntary disclosure choices are likely to be affected by information type. For the purpose of this study, voluntary disclosure is categorized into five types: (i) the corporate and strategic information; (ii) financial and capital market data information; (iii) directors and senior management information; (iv) forward-looking information; and (v) corporate social responsibility. These classifications are commonly used in past literature (Barako *et al.*, 2006; Haniffa and Cooke, 2002). The nature of each of these five information categories is discussed as follows:

(1) *Corporate and strategic information* relates to firm background, market and competition, industry competitiveness and prevailing economic and political situations that can affect a firm's operational performance. Strategy impacts on many aspects of a firm, and ultimately affects a firm's performance (Besanko *et al.*, 2004). Thus, strategic information becomes the fabric of a firm's disclosure in their annual reports (Ho and Wong, 2004). The survey carried out by Ho & Wong (2004) indicates that strategy information disclosure is important to firms' stakeholders. Such non-financial information often proves fundamental to understanding the opportunities and risks of investing in a company.

(2) *Financial and capital market data information* concerns the historical information presented in the accounts, including the key financial ratios, the review of the firm's performance, wealth creation, as well as the trend of volume of shares traded, market capitalization and share prices. This quantitative information provides an overall understanding of the factors

that play a role in the performance and future growth of a company and may be of particular relevance for decision-making. This information constitutes the bedrock of disclosure especially to investors (OECD, 2001).

- (3) *Directors and senior management* concerns information about their qualifications, experience and positions held in the firm. It is reported in OECD (2003) that companies in Asia (including Malaysia) generally provide scant information on the background and remuneration of directors and key executives.
- (4) *Forward-looking information* refers to the information that relates to future prospects, forecasts, and the potential of a firm. This information provides insight into material issues facing a company, yet OECD (2003) reports that Asian companies often provide little guidance on these issues.
- (5) *Corporate social responsibility (CSR)* covers information about corporate philanthropy, environment, employees, and other information pertinent to society. CSR, by itself, has been the subject of substantial academic research. Voluntary disclosure of this information may be used to reinforce the community's perception of management's responsiveness to specific social responsibility issues and to legitimize corporate actions (Wilmshurst and Frost, 2000; Gray *et al.*, 1995).

Each firm's overall voluntary Disclosure Index (DI) score is calculated in aggregate and then again for each of the five categories and for each period. An item scores 1 if it is disclosed and 0 if it is not, subject to the applicability of the item concerned. The DI score for each company is additive and unweighted to avoid subjectivity (Cooke, 1989). A firm's voluntary disclosure index for each category is defined as the ratio of actual disclosures to the maximum possible

score. The disclosure index, calculated for each firm in each period, is mathematically represented as:

$$DI_{jt} = \frac{\text{Actual number of disclosed items}}{\text{Maximum possible disclosure items}}$$

where DI_{jt} = disclosure index being categorized into: (i) corporate and strategic disclosure index (CSD); (ii) financial and capital market disclosure index (FCMD); (iii) directors and senior management disclosure index (DSMD); (iv) forward looking disclosure index (FLD); and (v) corporate social responsibility disclosure index (CSRDI) for firm j in year t . These indices are calculated separately for each firm in each of the three sample periods.

4.3 Corporate governance as the predictor variable

The principles and best practices of the MCCG and Chapter 15 of Bursa Malaysia Listing Requirement on corporate governance provide an official authoritative and objective source for the selection of corporate governance attributes for an aggregate measure. The focus is on the governance attributes that can be operational and have been deemed in the literature to be most relevant. This aggregation is composed of 13 important attributes as the measure of the corporate governance structure of a firm. These 13 governance attributes are tabulated in Table 1. Each of the attributes of corporate governance is measured as a dichotomous variable. A value of 1 is assigned for each corporate governance attribute present in the specific firm (these are presumed to reinforce the voluntary disclosure practice of a firm) and 0 otherwise. A firm receives a score ranging from 0 to 13 depending on the number of attributes satisfied. This approach is deemed to be appropriate for all three key sample time periods in view of the voluntary compliance with best practices of the MCCG. Firms with a low corporate governance score are presumed to have weaker governance structures, likely leading to a lesser extent of voluntary disclosure. A higher score is believed to signal a stronger governance structure that promises enhanced accountability and transparency. This is posited to lead to a greater extent of voluntary disclosure. All 13 attributes are weighed equally to reduce subjectivity. The strength of a firm's corporate

governance structure is captured by creating a composite proxy measure, defined as the corporate governance score (CGS). The CGS, measured as a percentage, is treated as a continuous predictor variable in the statistical analysis.

TABLE 1: Corporate governance score (CGS) items

Corporate governance attributes	
1	Are the roles of Chairman and Chief Executive Officer performed by different persons?
2	Do independent non-executive directors comprise at least one-third of the board membership?
3	Does the board have a defined policy of management responsibilities of the board and CEO?
4	Is the audit committee chaired by independent non-executive directors?
5	Does the audit committee comprise at least three directors, a majority of whom are independent?
6	Do at least two members of the audit committee have accounting or related financial management expertise?
7	Is the remuneration committee chaired by independent non-executive director?
8	Does the remuneration committee consist wholly of non-executive directors?
9	Is structured remuneration policy in place, where remuneration to directors is contingent of performance?
10	Is there any disclosure of the details of remuneration to each director in the annual report?
11	Does the nomination committee consist exclusively of non-executive directors, a majority of whom are independent?
12	Does the nomination committee adopt a formal procedure for appointments to the board?
13	Does the company maintain a sound system of internal control - financial, operational, compliance and risk management - to safeguard shareholders' investment and companies' assets?

The 13 corporate governance attributes are derived from the principles and best practices of the MCCG. These are used to create the corporate governance score (CGS) which is ranged from 0 to 13 depending on the number of conditions satisfied. A CGS score is calculated for each firm year across the three study periods.

4.4 Control variables

The disclosure decision is a complex and multi-faceted one, thus it is appropriate to consider the simultaneous effects of the independent and control variables on the disclosure outcome (Labelle, 2002). Following the practice in prior research, this study includes four standard

control variables: ownership concentration, firm size, leverage and industry in the statistical analysis.

First, the degree of dispersion between ownership and management determines the level of monitoring (Jensen and Meckling, 1976) and thereby the extent of voluntary disclosure. Agency theory argues that firms will disclose more information to reduce agency costs and information asymmetry in a diffused ownership environment (Jensen and Meckling, 1976). Hence, firms with a concentrated ownership structure are expected to disclose less information. Ownership concentration is measured by the proportion of shares held by the top five shareholders. Second, large firms tend to disclose information more extensively because of exposure to public scrutiny (Schipper, 1981), the need to raise capital at a lower cost (Botosan, 1997), and the need to minimize high agency costs typical in large companies. Firm size is measured as the natural logarithm of total assets to reduce the impact of skewed data in the statistical analysis. Third, from the perspective of agency theory, Jensen and Meckling (1976) argue that high monitoring costs would be incurred by firms that are highly leveraged and that agency conflicts are exacerbated by the presence of bondholders in a firm's capital structure. In Malaysia, financial institutions play an active role in the provision of funds to listed firms. *A priori*, there is an expectation that highly leveraged firms will disclose more information in their annual reports (Ahmed and Nicholls, 1994). Leverage is measured as the ratio of total liabilities to total assets. Fourth, the level of disclosure may vary according to industry type (Eng and Mak, 2003). Wallace *et al.* (1994) suggest that disclosure level is likely to differ across various industries, reflecting their unique characteristics. The industry variable is operationalised through the classifications into consumer products, industrial products, construction and property, trading and services, and plantation firms.

4.5 Regression model

To test the association between the dependent variables (CSD, FCMD, DSMD, FLD and CSRD) with the independent variable (CGS) and control variables (OCON, SIZE, LEV and IND), a multiple linear regression model is constructed and performed cross-sectionally for each of the three sample periods. The model is represented as:

$$DI_{jt} = \beta_0 + \beta_1 CGS_{jt} + \beta_2 OCON_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 IND_{jt} + \varepsilon_{jt}$$

where DI_{jt} = disclosure indices categorized into CSD, FCMD, DSMD, FLD and CSRD for firm j in year t ; CGS_{jt} = corporate governance composite score for firm j in year t ; $OCON_{jt}$ = ownership concentration is measured as the proportion of shares held by top five shareholders for firm j in year t ; $SIZE_{jt}$ = natural log of total assets for firm j in year t ; LEV_{jt} = ratio of total debt to total assets for firm j in year t ; $IND_{jt} = 1$ if firm engaged in industrial, trading and service, consumer, construction and property, or plantation sector; 0 if otherwise; β_0 = intercept; β = estimated coefficient for each item; ε_{jt} = error term.

5.0 Results

5.1 Descriptive statistics

Descriptive statistics provided in Table 2 shows the mean disclosure of each category of information for all sample firms for all years. Corporate and Strategic Disclosure (CSD) has the highest mean disclosure of 40.1% followed by Directors and Senior Management Disclosure (DSMD) of 36.8%. Financial and Capital Market Disclosure (FCMD) and Forward Looking Disclosure (FLD) registered mean disclosures of 29.8% and 27.1% respectively. Corporate Social Responsibility Disclosure (CSRD) has the lowest disclosure with an average of 17.1%. There is a great diversity of disclosure of all these categories as reflected by the range of communication from 0% to above 80%.

Sample firms generally exhibit a moderate corporate governance structure, based on the CGS measure, with an overall aggregate score of 46.6%. Ownership structure of the sample firms is characterized by concentrated shareholdings with the top five shareholders (OCON) averaging

59.2%. This high number is a typical feature in firms in East Asian countries (Claessens *et al.*, 2000).

TABLE 2: Descriptive statistics for all sample firms for sample years (1996, 2001 and 2006)

	CSD	FCMD	DSMD	FLD	CSRD	CGS	OCON	SIZE	LEV
Mean	40.066	29.822	36.833	27.091	17.145	46.617	59.294	5.910	0.411
SE	1.072	1.139	1.613	0.829	1.159	1.346	0.947	0.036	0.014
Median	40.000	26.320	33.330	27.270	8.700	46.150	60.290	5.898	0.399
SD	18.577	19.721	27.940	14.357	20.074	23.313	16.398	0.624	0.242
Kurtosis	-0.567	-0.117	-0.489	0.429	0.765	-1.061	-0.531	0.996	1.357
Skewness	0.094	0.739	0.352	0.209	1.269	0.089	-0.373	-0.006	0.695
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	17.890	3.878	0.002
Maximum	84.620	88.890	100.000	72.730	82.610	92.310	90.700	7.737	1.612
N	300	300	300	300	300	300	300	300	300

CSD is the acronym for the corporate and strategic disclosure index; FCMD is the financial and capital market data disclosure index; DSMD is the directors and senior management disclosure index; FLD is the forward-looking disclosure index; and CSRD is the corporate social responsibility disclosure index. These disclosure scores are normalized to 100. The explanatory variables include CGS the corporate governance composite score; OCON the ownership concentration percentage; SIZE the firm size and LEV the leverage figure.

The extent of voluntary disclosure for all categories of information increases from 1996 to 2006, as shown by the average scores over time for CSD, FCMD, DSMD, FLD and CSRD (see Table 3). Paired t-tests are performed to test for differences between the means of the different categories of information over the study period. The difference in means of each category of information between two periods (1996 and 2001; 2001 and 2006; 1996 and 2006) is statistically significant at the 1% level. The largest change (196.1%) in mean DSMD occurs between 1996 (pre-financial crisis) and 2001 (post Asian crisis). Although the extent of CSRD is low (see Table 2), the sample firms show an improvement in disclosing this category of information as reflected by the positive change (74.9%) between 1996 and 2001. All the other categories, namely, CSD, FCMD, and FLD, demonstrate moderate increases between the two periods.

The differences in means of DSMD, FLD, and CSRD between 2001 and 2006 are statistically significant at the 1% level and statistically significant at 5% for CSD and FCMD. The CSRD continues to increase from 2001 to 2006 as depicted by the largest change in mean of 35.6%. Overall, the increases in all categories of information between 2001 and 2006 are not as pronounced as the increases between 1996 and 2001.

Between 1996 and 2006, the increase in means of all categories of information is statistically significant at the 1% level. There are marked increases in DSMD and CSRD with 236.5% and 137.2% increases respectively from 1996 to 2006. The increases in FCMD and FLD both average 35.0% whilst the CSD category shows the least increase (27.3%) over the 11 years. Overall, there is a significant increase in the extent of voluntary disclosure of all categories of information over time.

Such observed disclosure patterns may be explained by a number of reasons. The enhanced reporting regime in Malaysia appears to have an impact on firms to provide more transparent reporting of information of a voluntary nature. Further, the introduction of MCCG and subsequent initiatives provides more impetus for firm management to adopt disclosure practices that are in excess of statutory requirements in order to create greater transparency and greater flow of information to stakeholders. The change in the regulatory environment appears to have led to greater transparency, which may in turn become an important driver of a firm's disclosure practices.

TABLE 3: Paired t-tests for mean voluntary index by categories of information

<i>CSD</i>	1996	2001	2006	2006-1996
Mean	34.802	41.091	44.304	
% change <i>CSD</i> ($CSD_t - CSD_{t-1}$)		18.071	7.819	27.303
Correlation		0.646	0.703	0.598
t-Stat		-4.367	-2.108	-5.644
P(T<=t) one-tail		0.000	0.018	0.000
<i>FCMD</i>				
Mean	25.007	30.568	33.898	
% change <i>FCMD</i> ($FCMD_t - FCMD_{t-1}$)		22.238	10.894	35.592
Correlation		0.778	0.718	0.642
t-Stat		-4.369	-2.243	-5.398
P(T<=t) one-tail		0.000	0.013	0.000
<i>DSMD</i>				
Mean	15.083	44.667	50.750	
% change <i>DSMD</i> ($DSMD_t - DSMD_{t-1}$)		196.141	13.618	236.471
Correlation		0.589	0.627	0.431
t-Stat		-13.889	-3.156	-13.772
P(T<=t) one-tail		0.000	0.001	0.000
<i>FLD</i>				
Mean	23.059	27.025	31.189	
% change <i>FLD</i> ($FLD_t - FLD_{t-1}$)		17.199	15.408	35.257
Correlation		0.422	0.371	0.553
t-Stat		-2.701	-2.621	-6.037
P(T<=t) one-tail		0.004	0.005	0.000
<i>CSRD</i>				
Mean	10.043	17.565	23.827	
% change <i>CSRD</i> ($CSRD_t - CSRD_{t-1}$)		74.898	35.650	137.251
Correlation		0.687	0.757	0.664
t-Stat		-5.477	-3.928	-7.439
P(T<=t) one-tail		0.000	0.000	0.000

Paired t-test results for the five categories of information for all sample firms. For each category, the hypothesized mean difference = 0; df = 99; and t critical one-tailed = 1.660.

Pearson's product-moment correlations between each key information category and the continuous predictor variables are computed (see Table 4). CSD and DSMD are positively correlated with the CGS in all years. FLD and CSRD are positively correlated with CGS in the latter two periods. Positive correlations are also noted between OCON and FCMD, DSMD and

CSRD in all years. SIZE is consistently correlated with all information categories throughout the observation periods. Firm size is also strongly correlated with CGS in 2001, the year when the MCCG is implemented. Such correlations indicate that larger firms tend to be correlated with stronger corporate governance structure and higher voluntary disclosure. LEV is negatively correlated with FCMD in 1996 only.

TABLE 4: PEARSON CORRELATION MATRIX FOR ALL SAMPLE FIRMS

1996	CSD	FCMD	DSMD	FLD	CSRD	CGS	OCON	SIZE	LEV
CSD	1.000	0.374*	0.359*	0.445*	0.518*	0.195*	0.152	0.563*	-0.028
FCMD		1.000	0.534*	0.294*	0.380*	0.069	0.293*	0.314*	-0.246*
DSMD			1.000	0.218**	0.520*	0.198**	0.245*	0.386*	-0.047
FLD				1.000	0.236*	-0.044	0.163	0.375*	-0.007
CSRD					1.000	0.104	0.313*	0.398*	-0.008
CGS						1.000	-0.004	0.151	-0.125
OCON							1.000	0.008	-0.171**
SIZE								1.000	0.146
LEV									1.000
2001									
CSD	1.000	0.411*	0.337*	0.431*	0.527*	0.346*	0.270*	0.580*	0.039
FCMD		1.000	0.450*	0.193**	0.409*	0.299*	0.193**	0.470*	-0.072
DSMD			1.000	0.251*	0.382*	0.384*	0.222**	0.311*	0.036
FLD				1.000	0.141	0.222**	0.036	0.345*	0.011
CSRD					1.000	0.425*	0.250*	0.373*	-0.032
CGS						1.000	0.276*	0.193**	-0.123
OCON							1.000	0.073	-0.376*
SIZE								1.000	0.248*
LEV									1.000
2006									
CSD	1.000	0.588*	0.556*	0.575*	0.662*	0.227**	0.267*	0.636*	0.053
FCMD		1.000	0.492*	0.438*	0.621*	0.102	0.283*	0.544*	-0.156
DSMD			1.000	0.420*	0.609*	0.339*	0.177**	0.380*	0.055
FLD				1.000	0.417*	0.183**	0.177**	0.332*	0.020
CSRD					1.000	0.211**	0.259*	0.526*	-0.042
CGS						1.000	0.061	-0.004	-0.099
OCON							1.000	0.034	-0.359*
SIZE								1.000	0.153
LEV									1.000

Pearson correlation matrix shows the correlation coefficients for all the continuous explanatory variables and the dependent variables for each year. Associations * and # are statistically significant at the 1% and 5% levels respectively.

None of the correlation coefficients in Table 4 is above 0.7, suggesting that multicollinearity is not problematic in this study (Gujarati, 1995). Multicollinearity issues are again checked against Variance Inflation Factors (VIFs). None of the variables in the model has VIF scores (not shown for brevity) that exceed 2.5 in each year; these scores do not come close to the VIF 10 score or above that is considered problematic (Neter *et al.*, 1983). Thus, multicollinearity in this study is also not considered a concern in the regression analysis. Moreover, graphs of residuals show that the distribution of the residuals is normal for each year. The spread of the residuals is virtually the same for any value of CSD, FCMD, DSMD, FLD and CSRD, thus the assumption of homoscedasticity has been met (Lind *et al.*, 2004). It is concluded that the results of the regression analysis can be interpreted with a reasonable degree of confidence.

5.2 Regression results

Table 5 displays the cross-sectional results of the OLS regression models used to test the five hypotheses (H1a-H1e). The significant F-statistics and adjusted R^2 in each of the sample periods show that the corporate governance determinant is significant in explaining variation in the disclosure of voluntary information. The amount of explained variation, reflected in adjusted R^2 , in the five information categories increases over the years particularly for CSD (from 36.2% in 1996 to 56.7% in 2006), FCMD (from 26.3% in 1996 to 43.1% in 2006), and CSRD (from 20.2% in 1996 to 39.8% in 2006).

There is a positive and statistically significant association between CGS and DSMD in 1996 ($p < 0.01$). The result, as provided in Table 5 Panel A, suggests that Malaysian listed firms are inclined towards disclosure of directors and senior management information in the period before the implementation of MCCG, supporting H1c. OCON is found to be significantly ($p < 0.001$)

and positively associated with FCMD, DSMD and CSRD in 1996. The positive coefficients indicate that firms with a concentrated ownership structure disclose more information relating to financial and capital market data, directors and senior management and corporate social responsibility. SIZE is a significant predictor in explaining the variability of firms' disclosure of all categories information ($p < 0.001$) in 1996. The association between FCMD and LEV is negatively and statistically significant in 1996 ($p < 0.01$). Firms in the industrial product, and construction and property sectors tend to make CSD, FCMD and FLD in 1996.

Table 5 Panel B shows that the extent of voluntary disclosure of all categories (CSD, FCMD, DSMD, FLD and CSRD) is positively and statistically significant with CGS in 2001. The results suggest that firms with enhanced corporate governance structures are associated with more extensive voluntary disclosure of corporate and strategic information, financial and capital market data information, directors and senior management information, forward-looking information and corporate social responsibility information. All hypotheses (H1a – H1e) are supported in the post-Asian financial crisis period after the implementation of MCCG. OCON is found to be significantly and positively associated with CSD and DSMD ($p < 0.05$ and $p < 0.01$ respectively). The results demonstrate that a higher proportion of shares concentrated in the top five shareholders are associated with higher voluntary disclosure of corporate and strategic information, and directors and senior management information. Again, SIZE is a consistently significant predictor in explaining the variability of firms' disclosure in all categories. LEV is negatively and statistically significantly associated with FLD ($p < 0.01$) in 2001. Firms in industrial, trading and service, and construction and property sectors are more inclined to disclose corporate and strategic information and forward-looking information. However, these firms disclose less financial and capital market data information in 2001.

Table 5 Panel C reports that the strength of a governance structure system is a good predictor variable of information disclosure in 2006. The results support the predictions of a positive association between CGS and all categories of information disclosure (CSD, FCMD, DSMD, FLD and CSRD). Again, all hypotheses (H1a – H1e) are supported in this latter period. The results suggest that firms with enhanced governance structures continue to engage in higher levels of voluntary disclosure. OCON is found to be significantly and positively associated with the disclosure of all categories of information in 2006. SIZE is a consistently significant predictor in explaining the variability of firms' disclosure of all categories. LEV is no longer significant in 2006. Firms in the construction and property sectors disclose more CSD and CSRD, firms in the plantation sector are more inclined to provide CSD and FCMD, while firms in the trading and service and consumer sectors tend to release more CSRD.

Overall, the results support the predictions of a positive association between the strength of corporate governance structure of sample firms and the categories of information disclosure after the MCCG is implemented in 2001. The enhanced governance strategies adopted in the wake of the 1997 Asian financial crisis and rampant corporate scandals have made Malaysian firms more accountable for their operations and activities via greater disclosure in their annual reports. Firms with stronger governance structure communicate a greater extent of both financial and non-financial information which is regarded as important to firms' stakeholders to facilitate their economic decision-making. Financial information may be more directly associated with proprietary costs (Verrecchia, 1983) which may give rise to concern that some disclosures might jeopardize the firm's competitive position in the market. Shleifer and Vishny (1997) and Core (2001) highlight that a well-designed governance structure can help ensure a firm's optimal disclosure policy. Implicitly, firms with stronger corporate governance oversight of the financial

reporting process may fear the proprietary cost less and may be more inclined to disclose relevant information. These firms are more likely to be oriented towards the capital market and may fare better with the investment community. On the other hand, non-financial information often proves fundamental to better understanding the opportunities and risks of investing in a company. The uncertain business environment following the 1997 Asian financial crisis and corporate scandals may have increased the willingness of Malaysian firms to disclose non-financial information. These firms have a major impact on society and may wish to more clearly discharge their social responsibility especially after forceful external pressures.

TABLE 5: Multiple Regression: Five Key Information Categories

Panel A: 1996		CSD		FCMD		DSMD		FLD		CSRD	
		Coeff. (t Stat)	P-value	Coeff. (t Stat)	P-value	Coeff. (t Stat)	P-value	Coeff. (t Stat)	P-value	Coeff. (t Stat)	P-value
Intercept		-70.180 (-4.616)	0.000*	-40.427 (-1.971)	0.026#	-101.595 (-3.573)	0.001*	-50.861 (-3.194)	0.002*	-60.399 (-4.112)	0.000*
CGS		0.156 (1.269)	0.104	-0.023 (-0.139)	0.445	0.372 (1.618)	0.054#	-0.095 (-0.737)	0.239	0.071 (0.596)	0.264
OCON		0.093 (1.102)	0.136	0.355 (3.132)	0.001*	0.437 (2.785)	0.003*	0.134 (1.518)	0.066#	0.252 (3.105)	0.001*
SIZE		15.681 (7.109)	0.000*	9.317 (3.131)	0.001*	14.057 (3.408)	0.000*	10.635 (4.603)	0.000*	8.754 (4.108)	0.000*
LEV		-7.369 (-1.147)	0.127	-14.590 (-1.683)	0.048#	4.289 (0.357)	0.361	-0.556 (0.083)	0.524	0.161 (0.026)	0.591
IND1		10.312 (2.477)	0.007*	-12.474 (-2.221)	0.014**	-9.587 (-1.232)	0.110	6.213 (1.425)	0.078#	3.952 (0.983)	0.168
IND2		10.750 (2.639)	0.005*	-6.727 (-1.224)	0.112	-8.072 (-1.060)	0.146	3.649 (0.856)	0.199	0.965 (0.245)	0.408
IND3		5.899 (1.459)	0.074**	-7.398 (-1.356)	0.089#	-4.451 (-0.589)	0.279	9.601 (2.269)	0.013**	1.168 (0.300)	0.382
IND4		-	-	-	-	-	-	-	-	-	-
IND5		5.866 (1.312)	0.096#	2.925 (0.485)	0.314	5.373 (0.643)	0.261	8.935 (1.909)	0.028**	2.660 (0.616)	0.250
	Adjusted R^2		0.362		0.263		0.207		0.165		0.202
	F-value		8.016		5.414		4.239		3.451		4.125
	Significance		0.000*		0.000*		0.000*		0.002*		0.000*
Panel B: 2001											
Intercept		-83.794 (-5.455)	0.000*	-44.032 (-2.582)	0.007*	-29.482 (-1.400)	0.001*	-23.066 (-1.658)	0.101	-68.970 (-3.882)	0.000*
CGS		0.179 (2.201)	0.015**	0.207 (2.294)	0.012**	0.347 (3.109)	0.001*	0.117 (1.593)	0.057#	0.283 (3.003)	0.001*
OCON		0.154 (1.748)	0.042**	0.114 (1.165)	0.123	0.165 (1.370)	0.087#	0.057 (-0.717)	0.237	0.106 (1.046)	0.149
SIZE		17.529		11.251	0.000*	7.579		7.746	0.001*	11.457	0.000*

	(6.289)	0.000*	(3.636)		(1.983)	0.025**	(3.069)		(3.555)	
LEV	-6.626 (-0.880)	0.332	0.899 (0.108)	0.555	6.269 (0.607)	0.272	-9.338 (-1.370)	0.087#	-1.355 (-0.156)	0.438
IND1	6.727 (1.411)	0.081#	-17.505 (-3.307)	0.001*	-1.255 (-0.192)	0.424	7.317 (1.694)	0.047**	3.917 (0.710)	0.239
IND2	8.717 (1.738)	0.043**	-15.666 (-2.814)	0.003*	1.318 (0.192)	0.424	6.287 (1.384)	0.085#	-2.217 (-0.382)	0.351
IND3	8.430 (1.744)	0.042**	-12.325 (-2.296)	0.012**	-0.639 (-0.096)	0.278	6.464 (1.476)	0.071#	-2.736 (0.489)	0.313
IND4	0.799 (0.154)	0.878	-3.460 (-0.600)	0.275	-0.074 (-0.010)	0.496	4.678 (0.995)	0.161	-6.189 (-1.030)	0.153
IND5	-	-	-	-	-	-	-	-	-	-
	Adjusted R^2	0.410	0.344		0.157		0.109		0.250	
	F-value	9.607	7.503		3.308		2.510		5.135	
	Significance	0.000*	0.000*		0.002*		0.008**		0.000*	

Panel C: 2006

Intercept	-142.292 (-8.283)	0.000*	-102.391 (-5.404)	0.000*	-54.182 (-2.134)	0.01**	-51.915 (-3.066)	0.001*	-155.648 (-6.561)	0.000*
CGS	0.362 (3.348)	0.000*	0.165 (1.385)	0.084#	0.246 (1.540)	0.063#	0.24 (2.097)	0.019**	0.383 (2.563)	0.005*
OCON	0.287 (2.787)	0.003*	0.295 (2.597)	0.005*	0.223 (1.467)	0.072#	0.153 (1.504)	0.068#	0.269 (1.891)	0.031**
SIZE	24.463 (9.879)	0.000*	17.593 (6.442)	0.000*	10.955 (2.993)	0.002*	9.360 (3.835)	0.000*	23.940 (7.000)	0.000*
LEV	3.312 (0.537)	0.593	-1.138 (-0.167)	0.868	8.786 (0.963)	0.169	3.783 (0.622)	0.536	3.502 (0.411)	0.682
IND1	-	-	-	-	-	-	-	-	-	-
IND2	-0.747 (-0.171)	0.864	-5.329 (-1.107)	0.135	-0.699 (-0.108)	0.914	3.705 (0.862)	0.391	-12.823 (-2.128)	0.018**
IND3	-0.102 (-0.022)	0.982	-0.247 (-0.049)	0.480	-1.747 (-0.259)	0.796	3.453 (0.767)	0.445	-11.591 (-1.837)	0.035**
IND4	-16.490 (-3.360)	0.001*	-1.777 (-0.328)	0.372	-4.970 (-0.685)	0.495	-6.133 (-1.268)	0.208	-20.293 (-2.994)	0.002*

		-8.430		13.195		-0.497		0.936		-2.905	
IND5		(-1.783)	0.039**	(2.531)	0.006*	(-0.071)	0.943	(0.201)	0.841	(-0.445)	0.657
	Adjusted R^2		0.567		0.431		0.079		0.158		0.398
	F-value		16.895		10.362		2.062		3.235		9.196
	Significance		0.000*		0.000*		0.024**		0.001*		0.000*

Table 5 provides the results of the multiple regression testing based on the regression equation. The equation is stated as: $DI_{jt} = \beta_0 + \beta_1 CGS_{jt} + \beta_2 OCON_{jt} + \beta_3 Size_{jt} + \beta_4 Leverage_{jt} + \beta_5 Ind_{jt} + \varepsilon_{jt}$ where DI is represented by CSD = corporate and strategic disclosure index; FCMD = financial and capital market data disclosure index; DSMD = directors and senior management disclosure index; FLD = forward-looking disclosure index; and CSRD = corporate social responsibility disclosure index. Independent variable: CGS = corporate governance composite score for firm j in year t; control variables: OCON = ownership concentration measured as top five shareholders for firm j in year t; SIZE = firm size measured as natural log of total assets for firm j in year t; LEV = leverage calculated as ratio of total debt to total assets for firm j in year t; $IND1_{jt} = 1$ if firm engaged in industrial sector, 0 if otherwise; $IND2_{jt} = 1$ if firm engaged in trading and service sector, 0 if otherwise; $IND3_{jt} = 1$ if firm engaged in consumer product sector, 0 if otherwise; $IND4_{jt} = 1$ if firm engaged in construction and property sector, 0 if otherwise; $IND5_{jt} = 1$ if firm engaged in plantation sector, 0 if otherwise; β_0 = intercept; β = estimated coefficient for each item; ε_{jt} = error term. Associations *, ** and # are statistically significant at the 1%, 5% and 10% levels respectively (1-tailed). The coefficients of the excluded industry dummy variables are all 1.000 since they act as benchmarks for the included industry dummies. The excluded industry dummy variables for 1996, 2001 and 2006 are construction and property, plantation and industrial sectors respectively.

6.0 Robustness Tests

We also conduct a pooled³ sample regression by pooling the entire three periods dataset to capture the effect of differing regulatory regimes on the extent of voluntary disclosure. The pooled data set contains a total of 300 observations over three periods. A pooled sample regression is estimated with additional variables, YEAR dummies. The results (not shown for brevity) show a positive and statistical significant change in the five sub-categories of disclosures (CSD, FCMD, DSMD, FLD and CSRD) occurring between 2001 and 1996, and between 2006 and 1996. These results demonstrate that the introduction of MCCG and the shift to a disclosure-based regime in 2001, as well as subsequent regulatory initiatives implemented between 2002 and 2006, have fundamentally increased the extent of disclosures of the five sub-categories information. Further, there is a positive and statistical significant association between the five sub-categories of information and CGS, OCON and SIZE. Overall, the pooled regression results are similar to the multiple regression results on panel data set as reported in the preceding section.

To further examine the earlier results reported, the panel data and the pooled regression models are re-estimated by incorporating the interaction variable of CGS with YEAR (CGS x YEAR). There is a positive and statistical association between the interaction variable and all five sub-categories of disclosures in 2006 in all models re-estimated (results not reported for brevity). A similar positive and statistical association result is witnessed in 2001 but only four sub-categories of information are affected, *viz.* CSD, FCMD, DSMD and CSRD. These results indicate that

corporate governance exhibits a strong monitoring presence over the extent of corporate communication of different types of information in latter periods.

7.0 Conclusions

Using a sample of 100 Malaysian listed firms, we examined the association between the strength of corporate governance structure and the extent of different types of information voluntarily communicated in key periods from 1996 to 2006. Malaysian firms tend to disclose more corporate and strategic information throughout the study periods while the disclosure of directors and senior management information increases in post Asian financial crisis periods. Financial and capital market data, forward-looking information, and corporate social responsibility information fetched relatively lower average disclosures. There are statistically significant increases in all five of the key information categories, with the increase most pronounced between 1996 and 2001.

The observed disclosure patterns in the latter two periods take place in the enhanced regulatory environment which promotes greater corporate transparency and accountability. The introduction of the disclosure-based regime, the MCCG and the subsequent initiatives appear to provide impetus for firm management to adopt disclosure practices that are in excess of statutory requirements in order to create a greater flow of information to stakeholders. The trend analysis demonstrates that Malaysian firms perceive voluntary disclosure as a type of a monitoring system to induce management to provide greater disclosures of different types of information so as to narrow the information asymmetry between management and shareholders. The evidence is consistent with results from Botosan (1997) and Barako *et al.* (2006).

The statistical findings are consistent with the hypothesized association that the strength of a firm's corporate governance structure is a potentially important determinant of a firm's disclosure policy with regard to the different categories of voluntary information particularly in post crisis periods. There is a significant and positive association between corporate governance structure and firms' disclosure of all key categories of information in 2001 and 2006; in particular, the statistical association between a firm's corporate governance structure and corporate and strategic information and corporate social responsibility information is strengthened in 2001 and 2006. The results suggest that the enhancement of corporate governance structure appears to lead to a higher level of voluntary disclosure of such information. These findings provide some empirical and theoretical justification for regulatory regime change in that the spirit of corporate governance principles and recommendations do seem to enhance transparency through the change of management's communication practices towards more voluntary disclosure of different types of information.

The trend analysis of the different categories of information disclosure over time has implications for business policy and practice. The structural transformation of the Malaysian economy from the development of industrial base and service sectors in the last twenty years towards a knowledge-based economy has provided greater international access for Malaysian firms in this globalised environment. The market-oriented economic policy has made it vitally important that Malaysian firms successfully compete internationally (Malaysia Industrial Development Authority, 2008). In view of the positive links to the extent of voluntary disclosure revealed in this study, the policy issue for Malaysian regulators and policy-setters is that they

should continue to encourage greater communication, particularly financial and capital market data, forward-looking, and corporate social responsibility information in order to attract wider participation from foreign investors. The findings have implications for investors who could associate with companies that have enhanced governance structure, as such companies provide greater communication of corporate information to facilitate decision-making.

The study has a number of limitations. The measure of the aggregate Corporate Governance Score (CGS) is not all-encompassing. Due to concerns about efficacy, not all the corporate governance attributes of the MCCG are included to derive the aggregate corporate governance score. The use of an index to arrive at an overall corporate governance score involves attaching an equal weighting to the various governance attributes. This assumes that every attribute is equally important to all firms. As highlighted by Larcker *et al.* (2005), using a summary measure of corporate governance characteristics has the potential to mask major underlying relationships. Another concern from the study arises from the use of the self-constructed disclosure index in that the existence of certain disclosures is measured and not the underlying informativeness of the disclosed items. Relative informativeness across different disclosure items is likely to vary according to who the users of the financial information are. Further, the different key information categories are solely constructed on the information disclosed in the annual reports. The possibilities of other forms of alternative information avenues such as press releases and conference calls could be considered in a future study. Another limitation of the study is that it does not directly address endogeneity concerns caused by unobservable firm-specific factors and omitted variables that may potentially affect corporate governance and ownership structure, and

that may affect voluntary disclosure of information simultaneously. Also, we did not attempt in this study to find the causal relationship between the independent and dependent variables.

Notwithstanding these caveats, the results reveal valuable insights into the role played by the corporate governance framework in influencing the corporate communication pattern of listed firms in Malaysia. Future research could utilize and expand this study's voluntary disclosure instrument to investigate the determinants of voluntary disclosure practices in the regional context. Future research could also examine the link between individual corporate governance structural characteristics and the key disclosure categories. In addition, the list of control variables appropriate to the Malaysian context such as politically connected firms, ethnicity, competitiveness and listing status could be incorporated in the model in a future study.

Endnotes

¹ The preliminary disclosure checklist is subject to a thorough screening in order to ensure its content validity. The screening processes involve: (a) the checking of items disclosed voluntarily in 1996; (b) the checking of items in the subsequent two periods which entailed the elimination of any items that subsequently became mandated; and (c) the refining for appropriateness of each disclosure item in the Malaysian context.

² To ensure that the assessment of applicability of a particular item of information to the firm is not biased, the entire annual report for each sample firm is read twice. The first reading is to gain familiarization with the circumstances of each firm and provide insightful knowledge to form an opinion as to whether an undisclosed item is, in fact, inapplicable to that firm. The second reading is to carefully quantify the items voluntarily disclosed by a particular firm against the disclosure rating sheet. The disclosure scoring procedure is completed by one and the same researcher to ensure consistency. As a further reliability check of the scoring sheet, the auditor from a Big Four accounting firm scores annual reports of 10 sample firms from each year (representing 10% of the total sample size). The unweighted voluntary disclosure index scores of this independent evaluator are then compared with the researcher's to ascertain if there are any statistically significant differences. Results of the t-tests indicate that mean voluntary disclosure scores in each year are virtually the same and do not differ significantly ($p \leq 0.05$) between the researcher and the independent evaluator. Based on the measures undertaken, the subjectivity problem arising from the scoring procedure with the disclosure instrument is deemed minimal. The scores for each voluntary disclosure item are considered reliable.

³ This study includes the repeated measures i.e., non-independent cases which violate a key statistical assumption for regression. Therefore, this is not the prime analytical tool used in this study. Nonetheless, the observation from the pooled results shows that the model is significant with an F-value of 33.15 and an adjusted R^2 of 53.4%.

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<i>Corporate and strategic disclosure index (CSD)</i>	
1	Financial highlights – 5 years and more
2	Pictures of major types of product
3	Discussion of company's major products / services / projects
4	Information on new product development
5	Discussion of industry trends (past)
6	Information on acquisitions and expansion
7	Statement of ways of improvement in product quality
8	General statement of corporate strategy
9	Organization structure / group chart
10	Information relating to the general outlook of the economy
11	Discussion of competitive environment
12	Information on disposal and cessation
13	A statement of corporate goals
14	Vision and mission statement
15	Description of marketing and distribution network for products/services
16	Statement of ways of improvement in customer service
17	Discussion of principal markets
18	Actions taken during the year to achieve the corporate goal
19	Brief history of the company
20	Significant events calendar
21	Reasons for the acquisitions & expansion
22	Impact of strategy on current and/or future results
23	Discussion about major regional economic development
24	Reasons for the disposal and cessation
25	Description of R&D projects
26	Impact of competition on current profit
27	Company's contribution to the national economy
28	Information about regional political stability

<i>Financial and capital market data disclosure index (FCMD)</i>	
29	Key financial ratios eg. return on assets, return on shareholders' funds, leverage, liquidity
30	Review of operations by divisions - operating profit
31	Review of operations - productivity
32	Review of current financial results, discussion of major factors underlying performance
33	Effect of acquisitions & expansion on results
34	Effect of disposal & cessation on results
35	Statement concerning wealth created eg. value added statement
36	Volume of shares traded (trend)
37	Volume of shares traded (year-end)
38	Share price information (trend)
39	Share price information (year-end)
40	Market capitalization (trend)
41	Market capitalization (year-end)
42	Analysis of distribution of shareholdings by type of shareholders
43	Domestic and foreign shareholdings breakdown
44	Segmental reporting on size, growth rate on product market
45	Segment reporting on all lines of business production data
46	Segment reporting on geographical capital expenditure
47	Segment reporting on geographical production
<i>Directors and senior management disclosure index (DSMD)</i>	
48	Academic & professional qualifications of directors
49	Position or office held by executive directors
50	Picture of senior management team
51	Senior management responsibilities, experience and background
<i>Forward-looking disclosure index (FLD)</i>	
52	Discussion of specific external factors affecting company's prospects (economy, politics, technology)
53	Discussion of company's prospects (general)
54	Discussion of likely effect of business strategy on future performance
55	Discussion of future industry trend
56	Discussion of future products/services research and development activities
57	Planned research and development expenditure
58	Planned capital expenditure
59	Planned advertising and publicity expenditure
60	Key financial data (quantitative) forecasts eg. sales revenues, profit, EPS
61	Qualitative forecasts of sales, revenues, profits, EPS

62	Forecast assumptions provided
<i>Corporate social responsibility disclosure index (CSR D)</i>	
63	General philanthropy
64	Participation in government social campaigns
65	Community programs (health and education) implemented
66	Statement of company environmental policies
67	Environmental protection program implemented
68	Awards for environmental protection
69	Support rendered for public/private action designed to protect environment
70	Employee's appreciation
71	Picture of employees' welfare
72	Discussion of employees' welfare
73	Number of employees for the last two or more years
74	Breakdown of workforce by line of business distribution
75	Categories of employees by level of qualifications
76	Corporate policy on employee training
77	Amount spent on training
78	Nature of training provided
79	General redundancy / retrenchment information
80	Indication of employee morale e.g. turnover, strikes and absenteeism
81	Information about employee workplace safety
82	Standard injury, lost day, and absentee rates and number of fatalities
83	Health and safety standards
84	Discussion of product safety
85	Statement of corporate social responsibility
CSD is the acronym for the corporate and strategic disclosure index; FCMD is the financial and capital market data disclosure index; DSMD is the directors and senior management disclosure index; FLD is the forward-looking disclosure index; and CSR D is the corporate social responsibility disclosure index.	