

Corporate Governance Failure to Influence the Communication of Key Financial Data over Turbulent Times

Poh-Ling Ho*
Norhani Aripin**
Greg Tower***

Abstract

This study analyses the impact of corporate governance mechanisms and firm characteristics on financial ratio disclosure over the turbulent 2001 and 2006 periods in Malaysia. It was found that the highest categories of ratio disclosures are profitability, cash flow and share market measures whereas there is far less information reported for capital structure and liquidity ratios. Importantly, none of the corporate governance mechanisms investigated influenced the level of financial ratio communication.

The findings in this study have important implications for Malaysian policy-makers and regulators that concerted efforts in strengthening overall corporate governance system and firms' disclosure policy are encouraged if the listed firms are to better communicate to their stakeholders. The results also provide useful insights about corporate transparency.

Keywords

**Communication
Financial Ratios
Corporate Governance
Malaysia**

Introduction

Over the past twenty years, most East Asian economies including Malaysia have been actively reviewing and improving their corporate governance frameworks as well as moving to converge their country-specific standards with International Financial Reporting Standards (IFRS). IFRS convergence arguably enhances the uniformity in reporting but it may not succeed in producing high quality financial statements in practice (Ball, 2006). Transparency issues remain important ongoing issues as a catalyst for various nations' governance and regulatory reforms. The pivotal concern is the quality of corporate disclosure that satisfies stakeholders' information needs.

One of the objectives of the corporate governance reforms is to enhance the accountability and quality of financial reporting. This aim is relevant to overall mandatory and voluntary disclosure initiatives, including the unique aspect of financial ratios disclosures. Ratio analysis is a widely used tool of financial analysis. The use of financial ratios to interpret financial statement provides valuable indication of company's performance and financial position. Financial ratios are important to firm's stakeholders particularly, in times of corporate collapses or times of uncertainty. Yet, the extent of financial ratio disclosure varies widely across firms due to its voluntary nature.

A stream of empirical studies has examined overall voluntary disclosure. However, there has been little research relating financial ratio disclosures to corporate governance attributes. This study evaluates the influence of corporate governance systems on the extent of financial ratio communication by listed firms in Malaysia. 2001 and 2006 data are gathered from the annual reports of firms listed on Bursa Malaysia Stock Exchange.

*Curtin University, Malaysia
**Universiti Utara Malaysia
***Curtin University, Australia

We are grateful for the helpful comments and suggestions from participants at the 2010 Accounting and Finance Association of Australian and New Zealand (AFAANZ) conference in Christchurch, New Zealand.

These are important time periods for the Malaysian business and accounting reforms. A comprehensive list of 43 financial ratio items in five major sub-categories is constructed from past accounting literature. Under the implicit tenets of agency theory, it is hypothesised that firms with stronger corporate governance will disclose more financial ratios. The financial ratio disclosure scores are regressed on key corporate governance attributes namely, board composition, role duality, board size and ownership structure after controlling for firm size, profitability and auditor type.

The findings highlight a statistically significant increase in the extent of financial ratio disclosure between 2001 and 2006. Notwithstanding the increase, the overall extent of financial ratio disclosure is low, ranging from 12-15%. These results shows that that firms with a higher proportion of independent non-executive directors on board, role duality and board size are not significant predictors of the extent of voluntary financial ratio disclosure. Similarly, ownership structure does not influence the communication of more financial ratios.

The important contribution of this study is to the literature on financial ratio disclosure, which relates communication of financial ratio to corporate governance mechanisms. The findings provide insight to policy makers and regulators that no one single mechanism is a governance panacea and the encouragement of ongoing concerted efforts to further strengthen the overall corporate governance framework as well as firms' communication policy in order to enhance corporate transparency and accountability. Our findings have implications for East Asian countries where the governments take special interest in corporate voluntary disclosure policy.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and discusses the specific hypotheses of this study. Section 3 outlines the research approach and study sample. Section 4 highlights the results of the hypotheses testing. The robustness tests are conducted in Section 5 with the final section summarising the findings and implications of the results.

Literature Review and Hypotheses Development

According to Courtis (1996), financial ratio analysis history started at the end of nineteenth century with the simple current ratio. Researchers in the early twentieth century derived more categories of ratio which opened up new dimensions such as their predictive ability. Financial ratio analysis topics are still receiving extensive attention by researchers with this particular study focusing on the disclosure of financial ratio in annual reports.

Financial ratio analysis is a valuable diagnostic tool that helps to identify problem areas and opportunities within a firm. The analysis provides insights into a firm's liquidity, profitability, degree of financial leverage, efficiency and value. It is important for several reasons: providing important relationships and bases of firms' financial condition (Subramanyam and Wild, 2009); a signalling tool (Mitchell, 2006); accessing and comparing company's performance (Watson *et al.*, 2002); avoiding misleading influence of the absolute dollar figures; and use in predictive studies (Altman, 1968; Beaver, 1966; Neophytou and Molinero, 2004).

Firm managers are motivated to disclose financial ratios in their annual reports to demonstrate they are: providing a quick and simple tool signalling the firms' performance; communicating new information that is not comprehensively presented elsewhere; presenting certain ratios that are not possible to be calculated by readers because of the non-availability of insider information (Gibson, 1982); and reducing the time and cost of obtaining and processing information (Watson *et al.*, 2002). These reasons are consistent with Graham *et al.*'s (2005) suggestion of the cost of capital as a motivation for companies providing voluntary information. This information is likely to be even more meaningful for non-sophisticated users in evaluating and making informed investment decisions. As noted by Subramanyam and Wild (2009), ratio analysis is among the most popular and widely used tools of financial analysis. For instance, Ariff and Ratnatunga (2008) derive evidence of the worth of ratio analysis in better predicting the potential failures of the financially troubled firms in the year ahead of bankruptcy. This highlights the

importance of financial ratio analysis in serving good corporate governance in building stronger foundations to create wealth and protect shareholders interests.

This research employs agency theory in evaluating the potential impact of corporate governance reforms upon financial ratio disclosure practices. Disclosure of voluntary information in the annual reports minimises information asymmetry problems and hence, ultimately reduces agency costs (Jensen and Meckling, 1976).

Previous studies have examined a wide variety of issues on the topic of voluntary disclosure (Barako *et al.*, 2006; Botosan and Harris, 2000; Cheng and Courtenay, 2006; Guthrie *et al.*, 2006; Ho *et al.*, 2008). Financial ratio disclosure is classified as voluntary nature since there is no regulations required such disclosure in the annual report (the earnings per share ratio is a rare exception). Studies on factors explaining financial ratio communication however are limited (Aripin *et al.*, 2008; Curtis, 1996; Mitchell, 2006; Watson *et al.*, 2002), especially in the Malaysian environment. This is especially critical for the Malaysian corporate governance reforms 2001 and 2006 periods. No known study has been found that examines the impact of corporate governance changes on financial ratio disclosure.

Corporate governance practice in Malaysia is fundamentally affected by the 1997/1998 financial crisis. Several new initiatives arose including: the establishment of The Malaysian Institute of Corporate Governance in 1998, the initiative of Malaysian Code on Corporate Governance in 2000 and the issuance of KLSE revamped listing requirements in 2001. The stated aims of these reforms are to improve the quality of corporate disclosure and transparency.

According to agency theory tenets, corporate governance factors have the potential to minimise conflicting interests between managers and shareholders. Thus, internal and external governance mechanisms are designed to reduce the agency cost. In a classic study, Horrigan (1965) argues that financial ratios are deemed to be the parallel reflection of firms' performance, where it could be used to evaluate firms' operational results (Mitchell,

2006). Any negligence or mismanagement of entities' financial resources could be signalled by poor financial ratios. Thus, the improvement of corporate governance practices could mitigate fraudulent activity, where firms with effective governance structure are expected to disclose more financial ratios as publicly available information.

The effectiveness of a board as a corporate governance mechanism depends on its composition, size and role. Prior studies suggest that effective governance with board independence improves firm performance (Franks *et al.*, 2001; Agrawal and Knoeber, 1996). The argument of agency theory is that independent directors are needed on the boards to monitor and control the actions of executive directors due to their opportunistic behaviour (Jensen and Meckling, 1976) and also to ensure that managers are working in the best interest of the principal (Fama and Jensen, 1983). This is in line with Bathala and Rao (1995), who suggest that the composition of the board is one of several mechanisms than can mitigate agency conflicts within the firm.

Independent directors are critically important for several reasons: extensive knowledge, precious experience and independence from management. The presence of independent directors therefore serves as an important check and balance mechanism in enhancing boards' effectiveness (Eng and Mak, 2003; Haniffa and Cooke, 2002). Using Singaporean data, Cheng and Courtenay (2006) show that a larger proportion of independent directors is significantly and positively associated with higher levels of voluntary disclosure. Chen and Jaggi (2000) document a positive relationship between a board with a higher proportion of independent directors and comprehensive financial disclosure. These findings are consistent with agency theory where higher proportion of independent directors enhances voluntary financial reporting (Barako *et al.*, 2006). The reason for this is that the presence of independent directors makes the release of voluntary information less costly because insiders have less to hide (Patelli and Prencipe, 2007). Consistent with this rationale, it is expected that the extent of financial ratio information disclosed will be positively related to a board with a higher proportion of independent

directors. This leads to a hypothesis that underlines the link between a firm's board structure and their disclosure of financial ratio information.

H₁: The extent of financial ratio disclosures for Malaysian listed firms is positively associated with more independent board composition.

Board size is regarded as another important board characteristic that may have an effect of board performance. The Malaysian Code of Corporate Governance outlines that the optimum number of board members should be appropriately determined by the board to ensure that there are enough members to discharge responsibilities and perform various functions. The level of disclosure is a strategic decision made by the board of directors. The size of board may influence the level of financial ratio disclosure. Chen and Jaggi (2000) argue that a greater number of directors on the board may reduce the likelihood of information asymmetry. Similarly, Akhtaruddin et al. (2009) reveal that a larger board is associated with greater level of voluntary disclosure. Zahra and Pearce (1989) conclude that larger boards are capable of monitoring the actions of management and ensuring organisational effectiveness. The ability of directors to control and promote value-creating activities is more likely to increase with the increase of directors on the board. As the number of directors increases, they would exert a greater monitoring role in influencing managers to disclose more information in corporate annual reports. Consequently, it is hypothesised that:

H₂: The extent of financial ratio disclosures for Malaysian listed firms is positively associated with the number of directors on board.

The separation of roles of Chairman from that of Chief Executive Officer potentially affects the degree of independency of a board of directors. Agency theory favours the role separation, which argues that the Chairman should be independent of company's affairs to reduce agency conflicts (Fama and Jensen, 1983). The separate roles better ensures that decision-making power is not concentrated with CEO otherwise, the ability to execute its oversight and governance roles would be

reduced (Gul and Leung, 2004). Role duality also proves detrimental to communicate levels and quality, especially voluntary disclosure (Xiao and Yuan, 2007; Ho and Wong, 2001). Role separation helps enhance monitoring quality and reduces the advantages gained by withholding information. In the Malaysian context, the importance of keeping the roles separated is stated in the Malaysian Code of Corporate Governance. It is expected firms with the combined roles of Chairman and CEO are more likely to be associated with lower level of financial ratio disclosures. The hypothesis is thus:

H₃: The extent of financial ratio disclosures for Malaysian listed firms is negatively associated with role duality.

Ownership structure also has its influencing effect upon voluntary disclosure. Jensen and Meckling (1976) postulate that ownership structure has the potential of reducing information asymmetries and thereby, alleviating agency conflict between shareholders and managers. High dispersion of ownership occurs when the majority of shareholding is held by a large number of individual shareholders. 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). Thus, discretionary disclosure in annual reports is likely to be greater in widely held firms so that individual shareholders can more effectively monitor their economic interests and managers can signal that they act in the best interests of the owners. A wider shareholder base is predicted to demand more information to be disclosed in the annual reports to reduce information asymmetry (Fama and Jensen, 1983).

In the context of disclosure, firms with higher concentration of ownership structure may communicate less information to shareholders through discretionary disclosure. McKinnon and Dalimunthe (1993) and Birt et al. (2006) note that Australian companies with a dispersed ownership structure disclose more voluntary information. Lakhali (2005) reveals that share ownership concentration is statistically and negatively associated with voluntary earnings disclosure among French companies. Oliveira et al. (2006) document

that firms with lower shareholder concentration levels tend to voluntarily disclose more information about intangibles in Portuguese firms. Greater disclosure in firms with diffuse ownership is also empirically documented in Haniffa and Cooke (2002) and Chau and Gray (2002). The significant role of ownership structure in influencing financial disclosure practices is clearly evident in previous studies worldwide. It is thus hypothesized that:

H₄: The extent of financial ratio disclosures for Malaysian listed firms is positively associated with a diffused ownership structure.

Several control factors, as identified by the extant literature, are also included in the statistical analysis (Liu and Sun, 2010; Xiao and Yuan, 2007; Chen and Jaggi, 2000). Firm size is examined due to its potential influence on financial ratio disclosure practices. Larger firms are associated with higher levels of voluntary disclosure of accounting ratios (Watson *et al.*, 2002; Aripin *et al.*, 2008; Morton and Harrison, 2009). This is because larger firms are subject to more public and regulatory scrutiny and thus, are likely to voluntarily disclose more information to muster public support for reducing political costs and to raise capital (Watts and Zimmerman, 1986). Profitability is included as another control variable (Morris and Tronnes, 2008). Prior studies tend to find a positive association between profitability and voluntary disclosure (Alsaed, 2005; Kent and Ung, 2003). Managers are motivated to disclose more detailed information to support the continuation of their position and remuneration. The size of audit firms has also been related to the extent of voluntary disclosure. The big audit firms (proxied by Big Four audit firms) are more likely to influence firms to disclose additional information due to their greater expertise and reputation. These big audit firms also act as a mechanism in limiting opportunistic behaviour by managers (Jensen and Meckling, 1976).

Research Approach

This study focuses on firms listed on the Bursa Malaysia Stock Exchange in years 2001 and 2006. Year 2001 is selected as the year in which the Malaysian Code of Corporate

Governance was implemented for adoption by listed firms while 2006 is selected after five years of adoption of the corporate governance code. More importantly, these two periods are considered critical in terms of regulatory reforms following environmental changes where 2001 representing post-1997 financial crisis and 2006 helps examine the influence of the globally-affected Enron debacle.

The annual reports of 40 firms for both periods are randomly selected from the population of firms listed on the Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange). Sample firm selection are based on the following criteria: (i) availability of annual reports of firms for the two periods; (ii) firms selected in 2001 must remain listed on the stock exchange in the latter period; and (iii) all banks, unit trust, insurance and finance companies are excluded from the study due to different and stringent regulatory requirements. This approach has been followed by a number of previous accounting disclosure studies such as Ho *et al.* (2008), Haniffa and Cooke (2002) and Raffournier (1995). There are forty firms in a final stratified sample for each period in this study (80 total firm-years). There is an equal representation of firms across five industrial sectors namely consumer product, industrial product, construction and property, trading and services, and plantation sectors. The sector representation of the sample firms is based on the principal classifications of Bursa Malaysia Stock Exchange.

The Extent of Financial Ratio Disclosure (EFRD) index is created as the communication proxy to measure the overall extensiveness of financial ratios disclosure. EFRD for a firm for a particular year is computed based on a comprehensive checklist comprising 43 financial ratios most commonly advocated by seminal authors (Hornigren *et al.*, 2006; Hoggett *et al.*, 2006; Hoskin, 1994; Maxwell *et al.*, 1998; Mitchell, 2006; Peirson and Ramsay, 2000; Stickney *et al.*, 2004; Subramanyam and Wild, 2009; Watson *et al.*, 2002). Firms can variably select disclosure (or non-disclosure) from a very wide range of financial ratios in the annual reports. The comprehensive checklist developed enables us to gauge how extensive the disclosure of financial ratio is made by Malaysian listed firms. It is argued that the need to provide

Table 1: Operationalisation of Independent and Control Variables

Variables	Measurement
Independent variables:	
Board Composition (BCOMP)	Ratio of independent non-executive directors to total directors
Role Duality (RDUAL)	1 if Chairman is separated from Chief Executive Officer; 0 if otherwise
Board Size (BSIZE)	Number of directors in the board
Ownership Structure (OWNER)	Ratio of shares held by top twenty shareholders to total shareholdings
Control variables:	
Firm size (FSIZE)	Natural log of total assets
Return on assets (ROA)	Defined as net profit before tax to total assets
Auditor (AUDIT)	1 if firm is audited by Big Four; 0 if otherwise

adequate financial information is vital to enable stakeholders to gauge firms' operational performance and growth potential. Consistent with Mitchell (2006), the list of 43 financial ratio is further classified into five key sub-categories namely, (i) *Profitability* (9 items); (ii) *Cash Flow* (9); (iii) *Share Market Measures* (11), (iv) *Capital Structure* (7); and (v) *Liquidity* (7). The prime dependent variable is EFRD with additional statistical analysis pertaining to the five sub-categories of financial ratios.

The EFRD for a firm for a particular year is computed based on the comprehensive checklist. Each voluntary financial ratio is noted as "1" if disclosed in the annual report for each company and "0" otherwise. The EFRD score is then computed by summing up all items disclosed divided by the maximum possible score. The approach to scoring is additive and equally weighted and is mathematically represented as follows:

$$EFRD_{jt} = \frac{\text{total number of financial ratios disclosed}}{\text{total possible financial ratios}}$$

Where $EFRD_j$ = Extent of Financial Ratio Disclosures for firm j in year t

The computation of five key sub-categories of financial ratio is in turn calculated using the same formula, dividing by the total possible financial ratio items for each sub-category. Data for all independent and control variables are extracted from sample firms' annual

reports. Table 1 summarises the operationalisation of these variables.

To test whether there is any significant difference in the extent of financial ratio disclosure in the two selected periods, the parametric paired sample t -test is conducted. Multiple regression analysis is used to test to regress the various independent variables against the overall EFRD and the individual five sub-categories of ratios. The assumptions underlying the regression models are tested for multicollinearity using the Pearson Correlation Matrix as well as the Variance Inflation Factor (VIF). Besides, an analysis of residuals, plots of the studentised residuals against predicted values as well as the Q-Q plots are conducted and examined to test for homoscedasticity, linearity and normality. Normality tests based on skewness, kurtosis and Kolmogorov-Smirnov Lilliefors are also performed. The regression model to test for the association of predictor variables with the overall EFRD is as follows:

$$EFRD_{jt} = \beta_0 + \beta_1 BCOM_{jt} + \beta_2 RDUAL_{jt} + \beta_3 BSIZE_{jt} + \beta_4 OWNER_{jt} + \beta_5 FSIZE_{jt} + \beta_6 ROA_{jt} + \beta_7 AUDIT_{jt} + \varepsilon_{jt}$$

The same regression model is run for each of the five key sub-categories of financial ratio.

Results

Financial ratios are variably disclosed by sample firms in 2001 and 2006 with the highest being the *Profitability* (PROF) sub-category items (see Table 2).

These *Profitability* ratios commonly disclosed by Malaysian listed firms include pre-tax profit margin, sales turnover, return on equity, net profit margin and gross profit margin. The next highest group of ratios relates to *Share Market Measures* (SMM) issues commonly disclosed by sample firms including price to earnings, net tangible assets per share, net assets per share, dividend yield and market capitalisation.

These trends are consistent with Watson *et al.* (2002) and Mitchell (2006). However, sample firms tend to communicate far few financial ratios relating to *Cash Flow* (CASHF), *Liquidity* (LIQ) and *Capital Structure* (CAPS).

Table 2: Extent of Financial Ratio Disclosures By Specific Ratios for 2001 and 2006

<i>Five Key Sub-categories</i> (% disclosure score)	<i>Specific ratios</i>	<i>% disclosure score</i> (2001)	<i>% disclosure score</i> (2006)
1. Profitability 2001: 19.17% 2006: 24.44%	1.Pre-tax profit margin	55.0	55.0
	2.Sales turnover	55.0	57.5
	3.Return on equities (ROE)	25.0	30.0
	4.Net profit margin	22.5	47.5
	5.Gross profit margin	12.5	15.0
	6.EBITDA/ Revenue	2.5	0.0
	7.Total expenses/revenue	0	10.0
	8.Return on assets (ROA)	0	5.0
	9.Return on sales	0.	0.0
2. Cash Flow 2001: 16.94% 2006: 16.67%	1.Dividend payment	90.0	87.5
	2.Repayment long term borrowings	57.5	52.5
	3.Reinvestment	5.0	10.0
	4.Operation index	0	0
	5.Cash flow adequacy	0	0
	6.Cash flow ratio	0	0
	7.Debt coverage	0	0
	8.Cash flow to revenue	0	0
	9.Cash flow return on assets	0	0
3. Share Market Measure 2001: 16.59% 2006: 18.41%	1.Price-to-earnings (P/E)	97.50	100.0
	2.Net tangible assets per share (NTAB)	70.0	45.0
	3.Net assets per share (NAB)	7.5	40.0
	4.Dividend yield	5.0	5.0
	5.Market capitalisation	2.5	5.0
	6.Total shareholder return (TSR)	0	5.0
	7. Dividend payout	0	2.5
	8.Earnings yield	0	0
	9.Price-to-book	0	0
	10.Book value per ordinary share	0	0
	11.Market-to-book ratio	0	0
4. Capital Structure 2001: 1.43% 2006: 2.5%	1.Total debt/equity	7.5	10.0
	2.Gearing	2.5	5.0
	3.Times interest earned	0	2.5
	4.Capitalisation ratio	0	0
	5.Equity ratio	0	0
	6.Liabilities/ Assets	0	0
	7.Long Term debt/equity	0	0
5. Liquidity 2001: 1.07% 2006: 7.72%	1.Current ratio	7.5	24.32
	2.Inventory turnover	0	22.22
	3.Quick ratio	0	7.5
	4.Days to sell inventory	0	0
	5.Accounts receivable turnover	0	0
	6.Collection period	0	0
	7.Payment period	0	0
Overall EFRD		12.21	14.98

Table 3 presents the results of the descriptive analysis of EFRD and the five key sub-categories of financial ratios for both years. The means of the EFRD in 2001 and 2006 are 12.2% and 15.0% respectively, representing a rise of over twenty percent.

Notwithstanding the increase, the overall extent of financial ratio disclosure is generally low. The descriptive statistics of dependent and continuous independent and control variables. EFRD = overall extent of financial ratio disclosure score; PROF = profitability; CASHF = cash flow; SMM = share market measures; CAPS = capital structure; and LIQ = liquidity. The independent and control variables include BCOMP = board composition; BSIZE = board size; OWNER = ownership structure; FSIZE = firm size; and ROA = return on assets. * K-S (Lilliefors) with significance <.05 indicates data is not normally distributed.

In terms of the five key sub-categories of financial ratios, *Profitability ratios* (PROF) have the highest communication (19.2% in 2001 and 24.4% in 2006).

Interestingly, *Cash Flow* (CASHF) is the only ratio category to have less disclosure over time. The average disclosure for *Share Market Measures* (SMM) increases from 16.6% in 2001 to 18.4% in 2006. *Capital Structure* (CAPS) also shows a slight increase in mean from 1.4% to 2.5% between 2001 and 2006. Lastly, sample firms disclose more *Liquidity ratios* (LIQ) between the two periods as shown by an increase in the average from 1.1% to 7.6%.

Table 3 also highlights that the measures of dependent variables of four key sub-categories financial ratio – CASHF, SMM, CAPS and LIQ are not normally distributed as indicated by skewness, kurtosis as well as Kolmogorov-Smirnov normality test (K-S Lilliefors). All the other dependent and continuous independent and control variables are assumed to be normal as the K-S Lilliefors has more than 5% significance. As such, the original measures of the variables are retained to run the regression analysis. As robustness test, transformation approaches are conducted.

Table 3: Descriptive Statistics for the Dependent and Continuous Independent and Control Variables

<i>Variables</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>Skewness</i>	<i>Kurtosis</i>	<i>K-S (Lilliefors)</i>
2001							
EFRD	12.208	4.552	0.000	20.930	-0.283	0.237	0.942
PROF	19.164	13.310	0.000	44.440	0.505	1.128	1.122
CASHF	16.943	7.110	0.000	22.220	-2.738	0.056	2.346*
SMM	16.589	5.402	0.000	27.270	-1.909	2.292	2.472*
CAPS	1.428	5.414	0.000	28.570	10.981	23.958	3.346*
LIQ	1.072	3.812	0.000	14.290	8.968	13.282	3.388*
BCOMP	38.277	17.984	11.110	86.000	2.810	1.375	1.049
BSIZE	8.000	1.935	4.000	12.000	-1.896	0.709	1.099
OWNER	68.897	14.995	35.390	94.620	-1.802	-0.136	0.582
FSIZE	20.713	1.260	18.079	23.204	0.716	-0.237	0.663
ROA	4.171	6.022	-9.130	20.350	0.921	1.731	0.611
2006							
EFRD	14.998	6.297	0.000	30.230	0.735	0.205	1.071
PROF	24.443	17.469	0.000	77.780	1.743	1.342	0.983
CASHF	16.665	7.116	0.000	22.220	2.470	-0.185	2.261*
SMM	18.407	7.560	9.090	45.450	3.636	4.784	2.131*
CAPS	2.500	8.491	0.000	42.860	10.160	20.344	3.262*
LIQ	7.619	11.901	0.000	33.330	3.037	-0.589	2.618*
BCOMP	46.607	11.050	22.200	75.000	2.794	2.202	1.174
BSIZE	8.000	2.061	4.000	14.000	-0.698	-1.587	0.919
OWNER	72.596	11.618	48.830	90.790	-0.872	-0.904	0.518
FSIZE	21.115	1.516	16.720	24.116	-0.259	0.930	0.587
ROA	6.411	5.601	-6.170	24.610	3.550	4.723	1.008

Paired t-tests are performed to examine the statistical significance of differences between the means of the financial disclosure scores over the study period, as shown in Table 4. The analysis reveals there is a statistically significant increase in the mean EFRD (p-value of less than 1% level), for PROF (5% level), SMM (10% level) and LIQ (1% level) for sample firms between 2001 and 2006. Table 4 further reports that the increases in CASHF and CAPS ratio categories are not statistically significant.

The overall extent of financial ratio (EFRD) for 2006 is greater than in 2001 as well as PROF, SMM and LIQ sub-categories ratios. Although financial ratio disclosure is voluntary in nature, the results suggest that Malaysian firms that have disclosed in the past continue the practice of disclosing at least the same extent of ratio information over time. The disclosure of CASHF style ratios is the sole exception.

Paired sample t-test results for mean financial ratio disclosure scores of the overall score (EFRD) and the five key sub-categories namely, (i) PROF = profitability; (ii) CASHF = cash flow; (iii) SMM = share market measures; (iv) CAPS = capital structure; and (v) LIQ = liquidity. These are performed by comparing 2001 and 2006. The percentage change in mean between two years is shown. The correlations between paired samples are

significant at the 1% level. For each category of financial ratio, the hypothesised mean difference = 0; df = 39; and t critical one-tailed = 1.684. The one-tailed significance is reported because of the directional nature of the overarching research proposition. *, ** and # are statistically significant at the 1%, 5% and 10% levels respectively (1-tailed).

Table 5 provides the Pearson Product-moment correlation coefficients for the dependent and continuous explanatory variables in each period. None of the correlation coefficients between independent variables is 0.8 or higher (Judge *et al.*, 1980). Hence, multicollinearity is not considered a concern in this study. Further, the Variance Inflation Factor (VIF) is used to test the presence of multicollinearity in the regression model. The VIF figures (not reported in Table 4 for brevity) of all the predictor variables are below 2.0. Hence, both correlation and VIF results support the absence of multicollinearity in these variables.⁷

Table 6 summarises the results for both years of the multivariate regression model for the EFRD. The model has adjusted R² values of 21.9% in 2001 and 33.7% in 2006. The overall model in each period are significant (p<0.01) thus, the regression helps explain a substantial percentage of the variation in the overall extent of financial ratio disclosures.

Table 4: Paired t-test of Financial Ratio Disclosure Scores Between 2001 and 2006

	EFRD	PROF	CASHF	SMM	CAPS	LIQ
Mean of paired differences	2.790	5.28	0.28	1.82	-1.07	-6.55
% change	22.68	27.49	-1.59	10.97	74.82	621.49
Hypothesised Mean Difference	0	0	0	0	0	0
Df	39	39	39	39	39	39
t-Stat	-3.981	-2.346	0.255	-1.749	-1.138	-3.667
P(T<=t) one-tail	0.000*	0.012**	0.400	0.044#	0.131	0.000*
t Critical one-tail	1.684	1.684	1.684	1.684	1.684	1.684

Table 5: Pearson Correlation Matrix for All Sample Firms

	EFRD	PROF	CF	SMM	CS	LIQ	BCOMP	RDUAL	BSIZE	OS	FSIZE	ROA	AUDIT
2001													
EFRD	1.000												
PROF	.883*	1.000											
CF	.363**	.059	1.000										
SMM	.722*	.543*	.046	1.000									
CS	.484*	.345**	-.011	.307**	1.000								
LIQ	.209	.146	-.086	.085	-.076	1.000							
BCOMP	-.127	-.057	-.117	-.171	-.070	.086	1.000						
RDUAL	-.053	-.017	.032	-.157	-.055	.039	.147	1.000					
BSIZE	.394*	.373*	.054	.443*	.022	.065	-.386*	-.080	1.000				
OWNER	.203	.170	.132	.047	.213	.007	.105	.233	.037	1.000			
FSIZE	.389*	.150	.394*	.396*	.154	.136	-.081	-.187	.229	-.073	1.000		
ROA	.411*	.427*	-.107	.425*	.134	.215	-.166	-.048	.304**	-.044	.179	1.000	
AUDIT	.101	.077	-.026	.247	-.176	.153	.018	.171	.099	.124	-.116	.130	1.000
2006													
EFRD	1.000												
PROF	.805*	1.000											
CF	.391*	.153	1.000										
SMM	.726*	.506*	.120	1.000									
CS	.450*	.181	.168	.095	1.000								
LIQ	.422*	.001	-.032	.313**	.169	1.000							
BCOMP	-.303**	-.147	-.141	-.324**	-.108	-.196	1.000						
RDUAL	-.143	.014	.000	.020	-.270**	-.305**	.201	1.000					
BSIZE	.243	.112	.199	.302**	-.070	.177	-.508*	.014	1.000				
OWNER	-.070	-.009	.199	-.324**	.056	-.343**	.046	.074	-.105	1.000			
FSIZE	.488*	.272**	.581*	.308**	.182	.197	-.173	-.039	.430*	.034	1.000		
ROA	.421*	.339**	.327**	.297**	.100	.110	-.549*	-.066	.473*	.237	.435*	1.000	
AUDIT	-.056	.145	.000	.015	-.383*	-.208	-.085	.082	.027	.157	-.089	.344**	1.000
<p><i>Pearson correlation matrix are provided for all sample firms for the two periods. EFRD = extent of financial ratio disclosure; PROF = profitability; CASHF = cash flow; SMM = share market measures; CAPS = capital structure; and LIQ = liquidity. BCOMP = board composition; RDUAL = role duality; BSIZE = board size; OWNER = ownership structure; FSIZE = firm size; ROA = return on assets; AUDIT = audit firm size.</i></p>													

The table shows the results of regression of the overall extent of financial ratio disclosures (EFRD) in 2001 and 2006 against the independent variables and control variables. The EFRD for a firm for a particular year is computed based on a checklist of 43 financial ratios. BCOMP = board composition; BSIZE = board size; RDUAL = role duality; OWNER = ownership structure; FSIZE = firm size;

ROA = return on assets; and AUDIT = audit firm size. Associations *, ** and *** are statistically significant at the 1%, 5% and 10% levels respectively. One-tailed probabilities are used for the tests of the BCOMP, BSIZE, OWNER, FSIZE and ROA variables since the associated hypotheses are directional while the two-tailed probabilities are used for the tests of the RDUAL and AUDIT variables.

Table 6: Multiple Regression Results using EFRD as the Dependent Variable

		2001			2006		
Adjusted R ²		0.219			0.337		
F statistic		6.911			7.624		
Significance		0.000*			0.000*		
	<i>Predicted sign</i>	<i>Coeff.</i>	<i>t Stat</i>	<i>P-value</i>	<i>Coeff.</i>	<i>t Stat</i>	<i>P-value</i>
Intercept		-2.90	-2.254	0.016**	-0.193	-1.129	0.350
BCOMP	+	-0.003	-0.063	0.475	-0.027	-0.273	0.393
BSIZE	+	0.075	1.057	0.150	0.056	0.574	0.285
RDUAL	-	-0.005	-0.334	0.370	-0.021	-1.178	0.124
OWNER	+	0.054	1.127	0.135	0.024	0.320	0.375
FSIZE	+	0.014	2.492	0.009*	0.020	3.036	0.002*
ROA	+	0.220	1.711	0.049**	0.563	3.646	0.000*
AUDIT	+	0.002	0.143	0.443	-0.018	-0.803	0.214

Regression results for both years indicate that none of the corporate governance attributes has a significant statistical influence on EFRD, hence H1, H2 and H3 are not supported (see Table 6). This is consistent with Haniffa and Cooke (2005) who find that independent non-executive directors have very limited influence on corporate social disclosure practices. Nonetheless, the directional signs are worthy of note. BCOMP is negatively associated with EFRD for both years, contrary to what is hypothesized. BSIZE has a positive influence while RDUAL has negative influence on EFRD for both years, consistent with that predicted. Similarly, a diffused ownership structure is not statistically significant although it shows positive association with EFRD in both years. Thus, H4 is also not supported.

In terms of the control variables, size (FSIZE) is a highly significant factor at the 1% level while the profitability variable (ROA) is found to be significant at the 5% level for both years. Auditor type (AUDIT) is never statistically significant (see Table 6). Overall, the key finding from the Table 6 statistical analysis is the lack of corporate governance influences

upon voluntary communication of financial ratios.

Table 7 expands the analysis by presenting the regression results for both time periods for the five key sub-categories of financial ratios. Generally, the corporate governance attributes are again not significant predictors of the five key sub-categories of financial ratios. Regression results for both years indicate no significant relationship between all the key sub-categories ratios and BCOMP (see Table 7). A diffused ownership structure also plays no influential role in determining the five key sub-categories of ratios except for the CAPS and LIQ sub-categories. OWNER is negatively and significantly (at the 5% level) associated with LIQ in 2006 and statistically significant at the 10% level with CAPS for only 2001. At the 10% significance level, BSIZE is positively associated with SMM for both years.

The results¹ also indicate that a significant positive association at the 10% level between CASHF and RDUAL in 2001. There are thus some partial links of corporate governance to financial ratio sub-categories, however this influence is not consistently strong.

Robustness Tests

A problem encountered in disclosure studies is that disclosure indexes serve as empirical proxy for the underlying theoretical construct (Beattie *et al.*, 2004). However, Cooke (1998) explains that while theory may specify a functional form for the underlying theoretical construct, it is unlikely to hold for empirical proxies. Since the dependent ratio variables are metric in nature in this study, they can be legitimately transformed and used in regression analysis (Cooke, 1998). Thus, to supplement the earlier findings data are transformed using rank regression and normal scores approaches.

The rank regression model is estimated with rank transformation of the EFRD and five key sub-categories and four corporate attributes measured on a continuous scale (i.e., BCOMP, BSIZE, OWNER, FSIZE, ROA). The regression is run with these ranks plus the RDUAL and AUDIT variables measured on a categorical scale. The normal scores approach offers an approach whereby non-normal dependent variables may be transformed into normality.

This approach consists of the regression using normal scores for the dependent variable and continuous independent variables. The results (not shown for brevity) generated from the transformation approaches are virtually the same as the earlier findings. Hence, the results are robust across different statistical approaches.

¹ In relation to the control variables, firm size is significant and positively associated with PROF, CASHF and SMM sub-categories for both years. However, no statistical significant findings are found for the CAPS and LIQ although the correlation coefficients reveal positive signs. Results reported in Table 6 reveal that ROA is positively and statistically significant in explaining PROF for both years and SMM in 2001 only. However, ROA is found to be negatively associated with CASHF in 2001. AUDIT is negatively associated with CAPS and LIQ in 2006 but positively associated with SMM in 2001.

The table shows the results of regression of five separate financial ratio disclosures (PROF, CASHF, SMM, CAPS and LIQ) in 2001 and 2006 against the independent variables and control variables. PROF = profitability ratio; CF = cash flow ratio; SMM = share market measures, CS = capital structure ratio; and LIQ = liquidity ratio. BCOMP = board composition; BSIZE = board size; RDUAL = role duality; OWNER = ownership structure; FSIZE = firm size; ROA = return on assets; and AUDIT = audit firm size. Associations *, ** and *** are statistically significant at the 1%, 5% and 10% levels respectively. One-tailed probabilities are used for the tests of the BCOMP, BSIZE, OWNER, FSIZE and ROA variables since the associated hypotheses are directional while the two-tailed probabilities are used for the tests of the RDUAL and AUDIT variables.

In addition, the study seeks to control for the omitted variable problem by examining the association between the change in the dependent variable and change in independent variables over the study periods. This approach is appropriate since there is less likely to be a corresponding change in any potential omitted variable that is correlated with both the dependent and independent variables. Thus, an additional regression model (not shown for brevity) is estimated to examine if changes in financial ratio disclosure are associated with changes in independent variables between 2001 and 2006. The summarised findings are shown in Table 8 (detailed table not shown for brevity). The Table 8 results indicate that there is a negative and statistically significant association between the change in EFRD and the change in BCOMP between 2001 and 2006. The change in EFRD is positively and statistically significantly associated with the change in BSIZE and RDUAL. With the control variables, the change in EFRD is influenced positively with the changes in FSIZE and ROA. Change in BCOMP is also negatively associated with the change in LIQ. There is a positive association between the change in BSIZE and the changes in CASHF, SMM and LIQ, whilst the change in RDUAL is positively associated with the changes in PROF and SMM. The change in CASHF and CAPS is positively and statistically associated with the change in OWNER between 2001 and 2006.

Table 7: Multiple Regression Results using the Five Key Sub-Categories of Financial Ratios Disclosures as the Dependent Variables

	PROF		CASHF		SMM		CAPS		LIQ	
	2001	2006	2001	2006	2001	2006	2001	2006	2001	2006
	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.	Coeff/ t-stat.
Intercept	-0.522 / -1.324	-0.412 / / -0.775	-0.338 / -1.902	-0.294 / -1.767	-0.333 / -1.833	-0.127 / -0.671	-0.124 / -0.707	0.019 / 0.072	-0.112 / -1.064	0.110 / 0.347
BCOMP	0.079 / 0.599	0.148 / 0.453	-0.076 / -1.276	-0.027 / -0.262	0.036 / 0.447	-0.083 / -0.715	-0.014 / -0.239	-0.046 / -0.283	-0.010 / -0.287	-0.046 / -0.237
BSIZE	0.292 / 1.343	-0.186 / / -0.505	-0.072 / -0.695	-0.147 / -1.304	0.112 / 1.338* **	0.171 / 1.334***	-0.041 / -0.390	-0.207 / -1.185	0.041 / 0.653	0.187 / 0.901
RDUAL	0.016 / 0.346	0.047 / 0.661	0.032 / 1.451** *	0.001 / 0.062	-0.018 / -0.998	-0.006 / -0.225	-0.003 / -0.115	-0.035 / -1.023	0.006 / -0.081	-0.064 / -1.575
OWNER	0.159 / 1.079	-0.107 / / -0.408	0.004 / 0.065	0.015 / 0.181	0.160 / 1.158	-0.022 / -0.240	0.098 / 1.511* **	0.067 / 0.515	0.002 / 0.062	-0.307 / -1.962**
FSIZE	0.014 / 3.822*	0.033 / 1.455* **	0.025 / 3.129*	0.023 / 3.161*	0.018 / 2.056* *	0.021 / 2.898*	0.005 / 0.589	0.003 / 0.301	0.006 / 1.200	0.015 / 1.083
ROA	0.863 / 2.191* *	0.230 / 1.347* **	-0.277 / / -1.535**	0.019 / 0.313	1.001 / 1.786* *	0.017 / 0.249	0.149 / 0.841	0.080 / 0.840	-0.051 / -0.474	0.104 / 0.900
AUDIT	-0.037 / -0.694	-0.015 / / -0.185	0.029 / 1.168	0.030 / 1.142	0.034 / 1.657* *	-0.006 / -0.198	-0.030 / -1.260	-0.100 / -2.680**	0.010 / 0.716	-0.104 / -2.106**

Table 8: Regression Results for Changes in Dependent and Predictor Variables

	Δ EFRD	Five sub-categories financial ratios				
		Δ PROF	Δ CASHF	Δ SMM	Δ CAPS	Δ LIQ
Δ BCOMP	$\sqrt{-}$	X	X	X	X	$\sqrt{-}$
Δ BSIZE	$\sqrt{+}$	X	$\sqrt{+}$	$\sqrt{+}$	X	$\sqrt{+}$
Δ RDUAL	$\sqrt{+}$	$\sqrt{+}$	X	$\sqrt{+}$	X	X
Δ OWNER	X	X	$\sqrt{+}$	X	$\sqrt{+}$	X
Δ FSIZE	$\sqrt{+}$	X	X	X	X	X
Δ ROA	$\sqrt{+}$	X	X	X	X	X
Δ AUDIT	X	X	$\sqrt{+}$	X	X	X

The table shows the regression for change in dependent and predictor variables between 2001 and 2006. Δ EFRD = change in extent of financial ratio disclosure scores; Δ PROF = change in profitability ratio; Δ CF = change in cash flow ratio; Δ SMM = change in share market measures, Δ CS = change in capital structure ratio; and Δ LIQ = change in liquidity ratio. Δ BCOMP = change in board composition; Δ BFSIZE = change in board size; Δ RDUAL = change in role duality; Δ OWNER = change in ownership structure; Δ FSIZE = change in firm size; Δ ROA = change in return on assets; and Δ AUDIT = change in audit firm size. \surd - represents negative and statistically significant; \surd + is the symbol for a positive and statistically significant finding; whereas X is the notation for not statistically significant.

Conclusions

This study examines the effect of changes in corporate governance systems on the financial ratio disclosure practices in Malaysian firms. It extends previous financial ratio disclosure studies in two valuable ways. First, it focuses on two key time periods, 2001 and 2006 during which remarkable corporate governance reforms take place. Second, it examines key corporate attributes such as the impact of board composition, role duality, board size and ownership structure on the extent of financial ratio communication.

The finding suggests a statistically significant rise in the overall extent of financial ratio disclosure between 2001 and 2006 ranging from 12.2% to 15.0%. *Profitability, Cash Flow* and *Shares Market Measures* sub-categories are more popularly communicated among Malaysian firms. Notwithstanding the increase, the overall extent of financial ratio disclosure is generally low. There are several possible reasons that may account for the low levels of communication. Firms management may feel that disclosure of information in annual reports is not critical in meeting the need of shareholders. This is consistent with Mitchell (2006) who suggests that many ratios are possibly important to certain user groups. Further, it could be argued that financial ratios could be calculated by anybody with some basic business knowledge. Professional financial analysts also could provide such information. However, it will potentially incur an additional cost to users.

The results shows that that firms with a higher proportion of independent non-executive directors on board, role duality and board size are not significant predictors of the extent of voluntary financial ratio disclosure. The findings imply that the board structure has very limited monitoring capacity in enticing management to communicate more financial ratios in annual reports, which is in contradiction to the agency theory. In general, Malaysian firms adopt the corporate governance framework as set out in the Malaysian Code of Corporate Governance and the Bursa Malaysia Listing Requirement but the findings raise some doubt whether these new corporate governance structures effectively serve as a linchpin to more effectively align management and board with the desires of shareholders through greater voluntary financial ratio disclosure.

The results also indicate that a diffused ownership structure does not influence the overall extent of financial ratio disclosure. The finding again contradicts agency theory tenets. One possible explanation is that when ownership is dispersed, small shareholders are not actively involved in corporate governance matters and thus are less influential in a firm's disclosure policy. Malaysian firms typify the Asian country insider-dominated mould with concentrated shareholdings. The dominant and insider shareholdings could impair the effectiveness of existing governance mechanisms in the corporate sector and potentially lower financial ratio disclosure.

Overall, these results point to a small increase in communication between 2001 and 2006. The disclosure of financial ratio information does not seem to be driven by the corporate governance attributes. In spite of the seemingly strengthening of corporate governance structure over the same timeframe, these statistically insignificant findings over the 6-year period are potentially unrelated to corporate governance. Hill (1999) and others argue that it is desirable to have a system of overlapping checks and balances. Yet, the evidence from this study otherwise suggests that no one single mechanism is a governance panacea.

There are several important implications from these findings. The evidence in this study shows a very low extent of financial ratio

disclosure between 2001 and 2006. The implication to the financial report prepares is that they should communicate important information like financial ratios in their annual reports. The finding suggests Malaysian firms underutilise financial ratio analysis properties. Hence, they should take further steps to improve the communication of financial ratios to reduce the costs of obtaining information. Next, the policy-makers and regulators may still require to beef up the effort in encouraging Malaysian firms to provide greater levels of financial ratio communication. They can especially target capital structure and liquidity ratios and may need more regulatory attention

Ariff and Ratnatunga (2008) provide a good argument that ratio analysis can serve good corporate governance. The findings of our study highlight the importance of the Malaysian regulatory bodies of continually seeking to enhance the overall corporate governance system, particularly the actual effectiveness of independent oversight of board committees. Malaysian regulators can continually promote transparency embedded in corporate governance framework in order to reduce information asymmetry between management and stakeholders. The findings relating to the ownership structure may also help encourage wider equity participation by various groups of investors to strengthen corporate transparency. Equally, the results may be of useful to regulators, policy makers, stakeholders and corporate managers in other East Asian countries to encourage increased financial reporting transparency.

This study has certain limitations. First, the main focus of this study is on the extent of financial ratio disclosures. Such disclosures are not all encompassing and do not necessarily reflect the true state of affairs of the business of the organisations. Second, the selection of these firms that stayed in existence across the two time periods may introduce biasness towards survivor firms. Third, although the study documents the expected association between corporate governance structure and financial ratio disclosures, it does not consider the causal relationship between the dependent and independent variables. Using the multiple regression model in this study, it is not possible, nor is it intended, to ascertain whether independent variables

directly influence the dependent variable. The multiple regression analysis does ascertain that there is an association between the two variables. Therefore, the findings should be considered but interpreted with care. Future studies on this area could address these issues more directly.

References

- Agrawal, A. and Knoeber, C.R. (1996) "Firm performance and mechanisms to control agency problems between managers and shareholders", *Journal of Financial and Quantitative Analysis*, 31(3): pp. 377-397.
- Akhtaruddin, M., Hossain, M.A., Hossain, M. and Yao, L. (2009) "Corporate Governance and Voluntary Disclosure in Corporate Annual Reports of Malaysian Listed Firms", *Journal of Applied Management Accounting Research*, 7(1): pp. 1-19.
- Alsaeed, K. (2005) "The association between firm-specific characteristics and disclosure: The case of Saudi Arabia", *The Journal of American Academy of Business*, September, 7(1): pp. 310-321.
- Altman, E.I. (1968) "Financial ratios, discriminate analysis and the prediction of corporate bankruptcy", *The Journal of Finance*, 23(4): pp. 589-609.
- Ariff, M. and Ratnatunga, J. (2008) "Do accounting and financial tools serve governance?", *International Journal of Economics and Management*, 2(1): pp. 1-27.
- Aripin, N., Tower, G. and Taylor, G. (2008) "The determinants of financial ratio disclosures and quality: Australian evidence", In *Accounting and Finance Association of Australia and New Zealand (AFAANZ) Annual Conference*, Sydney.
- Ball, R. (2006) "International Financial Reporting Standards (IFRS): Pros and Cons for investors", *Accounting and Business Research*, 36(4): pp. 5-27.
- Barako, D.G., Hancock, P. and Izan, H.Y. (2006) "Factors influencing voluntary corporate disclosure by Kenyan companies", *Corporate Governance: An International Review*, 14(2): pp. 107-125.

- Bathala, C.T. and Rao, R.P. (1995) "The determinants of board composition: An agency theory perspective", *Managerial and Decision Economics*, 16(1): pp. 59-69.
- Beattie, V., McInnes, W. and Fearnley, S. (2004) "A methodology for analysing and evaluating narratives in annual reports: a comprehensive descriptive profile and metrics for disclosure quality attributes", *Accounting Forum*, 28(3): pp. 205-236.
- Beaver, W.H. (1966) "Financial ratios as predictors of failure", *Journal of Accounting Research*, 14(3): pp. 71-111.
- Birt, J.L., Bilson, C.M., Smith, T. and Whaley, R.E. (2006) "Ownership, competition and financial disclosure", *Australian Journal of Management*, 31(2): pp. 235-263.
- Botosan, C.A. and Harris, M.S. (2000) "Motivations for a change in disclosure frequency and its consequences: An examination of voluntary quarterly segment disclosures", *Journal of Accounting Research*, 38(2): pp. 329-353.
- Chau, G.K. and Gray, S.J. (2002) "Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore", *The International Journal of Accounting*, 37(2): pp. 247-264.
- Chen, C.J.P. and Jaggi, B. (2000) "Association between independent non-executive directors, family control and financial disclosures in Hong Kong", *Journal of Accounting and Public Policy*, 19(4-5): pp. 285-310.
- Cheng, E.C.M. and Courtenay, S.M. (2006) "Board composition, regulatory regime and voluntary disclosure", *The International Journal of Accounting*, 41(3): pp. 262-289.
- Cooke, T.E. (1998) "Regression analysis in accounting disclosure studies", *Accounting and Business Research*, 28(3): pp. 209-224.
- Courtis, J.K. (1996) "Annual report financial ratio component consistency", *Asian Review of Accounting*, 4(1): pp. 146-162.
- Eng, L.L., and Mak, Y.T. (2003) "Corporate governance and voluntary disclosure", *Journal of Accounting and Public Policy*, 22(4): pp. 325-345.
- Fama, E.F. and Jensen, M.C. (1983) "Separation of ownership and control", *Journal of Law & Economics*, 26(2): pp. 301-325.
- Franks, J., Mayer, C. and Renneboog, L. (2001) "Who disciplines management in poorly performing companies?", *Journal of Financial Intermediation*, 10: pp. 209-248.
- Gibson, C. (1982) "Financial ratios in annual reports", *The CPA Journal*, 52(9): pp. 18-29.
- Graham, J.R., Harvey, C.R. and Rajgopal, S. (2005) "The economic implications of corporate financial reporting", *Journal of Accounting & Economics*, 40(1): pp. 3-73.
- Gul, F.A. and Leung, S. (2004) "Board leadership, outside directors' expertise and voluntary corporate disclosure", *Journal of Accounting & Public Policy*, 23(5): pp. 351-379.
- Guthrie, J., Petty, R. and Ricceri, F. (2006) "The voluntary reporting of intellectual capital", *Journal of Intellectual Capital*, 7(2): pp. 254-271.
- Haniffa, R.M. and Cooke, T.E. (2002) "Culture, corporate governance and disclosure in Malaysian corporations", *Abacus*, 38(3): pp. 317-349.
- Haniffa, R.M., and Cooke, T.E. (2005) "The impact of culture and governance on corporate social reporting", *Journal of Accounting and Public Policy*, 24: pp. 391-430.
- Hill, J.G. (1999) "Deconstructing sunbeam - Contemporary issues in corporate governance", *University of Cincinnati Law Review*, 67: pp. 1099-1127.
- Ho, P.L., Tower, G. and Barako, D. (2008) "Improving governance leads to improved corporate communication", *Corporate Ownership & Control*, 5(4): pp. 26-33.
- Ho, S.M. and Wong, K.S. (2001) "A study of the relationship between corporate governance structures and the extent of voluntary disclosure", *Journal of International*

- Accounting, Auditing & Taxation*, 10 (2): pp. 139-156.
- Hoggett, J., Edwards, L. and Medlin, J. (2006) *Financial Accounting*, John Wiley & Sons, Inc., Queensland.
- Horngren, C.T., Harrison, W.T., Bamber, L.S., Best, Fraser, P. and Willet, D. (2006) *Financial Accounting*, 5th ed., Pearson Education Australia, New South Wales.
- Horrigan, J.O. (1965) "Some empirical bases of financial ratio analysis", *The Accounting Review*, 40(3): pp. 558-568.
- Hoskin, R.E. (1994) *Financial Accounting: A New Perspective*. John Wiley & Sons, Inc., New York.
- Jensen, M.C. and Meckling, W.H. (1976) "Theory of the firm: Managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, 3: pp. 305-360.
- Judge, G.G., Griffith, W.E., Hill, C.R. and Lee, T.C. (1980) *The Theory and Practice of Econometrics*, Wiley, New York.
- Kent, P. and Ung, K. (2003) "Voluntary disclosure of forward-looking earnings information in Australia", *Australian Journal of Management*, 28(3): pp. 273-285.
- Lakhal, F. (2005) "Voluntary earnings disclosures and corporate governance: Evidence from France", *Review of Accounting and Finance*, 4(3): pp. 64-85.
- Liu, G. and Sun, J. (2010) "Ultimate ownership structure and corporate disclosure quality: Evidence from China", *Managerial Finance*, 36(5): pp. 452-467.
- Maxwell, R., Onus, P. and Fox, P. (1998) *Financial Accounting*. 3rd ed. Prentice Hall, Sydney.
- McKinnon, J.L. and Dalimunthe, L. (1993) "Voluntary disclosure of segment information by Australian diversified companies", *Accounting and Finance*, 33(1): pp. 33-50.
- Mitchell, J. (2006) "Selective reporting of financial ratios in Australian annual reports: Evidence from a voluntary reporting environment", *Accounting Research Journal*, 19(1): pp. 5-30.
- Morris, R. and Tronnes, P. (2008) "The determinants of voluntary strategy disclosure: An international comparison", in *2008 AFAANZ/IAAER Conference*. Sydney, Australia.
- Morton, A. and Harrison, J. (2009) "Explaining voluntary ratio disclosure by Australian listed companies", In *Annual Congress of the European Accounting Association (EAA) 2009*. Tampere, Finland.
- Neophytou, E. and Molinero, C.M. (2004) "Predicting corporate failure in the U.K: A multidimensional Scaling Approach", *Journal of Business Finance & Accounting*, 31(5&6): pp. 677-710.
- Oliveira, L., Rodrigues, L.L. and Craig, R. (2006) "Firm-specific determinants of intangibles reporting: Evidence from the Portuguese stock market", *Journal of Human Resource Costing & Accounting*, 10(1): pp. 11-33.
- Patelli, L. and Prencipe, A. (2007) "The relationship between voluntary disclosure and independent directors in the presence of a dominant shareholder", *European Accounting Review*, 16(1): pp. 5-33.
- Peirson, G. and Ramsay, A.L. (2000) *Financial Accounting: An Introduction*, 4th ed., Pearson Education Australia, New South Wales.
- Raffournier, B. (1995) "The determinants of voluntary financial disclosure by Swiss listed companies", *The European Accounting Review*, 4(2): pp. 261-280.
- Stickney, C.P., Brown, P.R. and Wahlen, J.M. (2004) *Financial Reporting and Statement Analysis: A Strategic Perspective*, Thomson South Western, United States.
- Subramanyam, K.R. and Wild, J.J. (2009) *Financial statement analysis*, 10 ed., McGraw Hill, Boston.
- Watson, A., Shrikes, P. and Marston, C. (2002) "Voluntary disclosure of accounting

ratios in the UK”, *British Accounting Review*, 34(4): pp. 289-313.

Watts, R.L. and Zimmerman, J.L. (1986) *Positive Accounting Theory*, Englewood Cliffs, Prentice Hall, New Jersey.

Xiao, H. and Yuan, J. (2007) “Ownership structure, board composition and corporate voluntary disclosure”, *Managerial Auditing Journal*, 22(6): pp. 604-619.

Zahra, S.A. and Pearce, J.A. (1989) “Boards of directors and corporate financial performance: A review and integrative model”, *Journal of Management*, 15(2): pp. 291-334.