Association between Board Characteristics and Earnings Quality: Malaysian Evidence

(Hubungan antara Ciri-ciri Lembaga Pengarah dengan Kualiti Pendapatan: Satu Kajian di Malaysia)

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ABSTRACT

The present study examines the relationship between board characteristics and earnings quality after the amendment of the Malaysian Code on Corporate Governance in 2007. Using heteroskedasticity-corrected least square regressions upon a sample of Malaysian firms listed in 2008 and 2009, the study finds that the quality of earnings is higher among firms with independent chairmen than among those firms with non-independent chairmen. However, in contradiction to the expectations of the study, inconclusive results are found concerning board independence. The results also demonstrate that investors do not perceive board size as a good indicator of quality earnings. The findings imply that investors continue to have reservations regarding the ability of boards to enhance the quality of earnings, although efforts have been made to reform corporate governance following the Asian financial crisis. The study serves as a signal to policy makers to evaluate the importance of board mechanisms when enhancing financial reporting quality in emerging markets.

Keywords: Corporate governance; board mechanisms; earnings persistence; earnings predictability; earnings informativeness, earnings quality

ABSTRAK

Kajian ini mengkaji hubungan antara ciri-ciri lembaga pengarah dengan kualiti pendapatan selepas Kod Tadbir Urus Korporat Malaysia dipinda pada tahun 2007. Kajian menggunakan heteroskedasticity-corrected least square regressions ke atas satu sampel yang kecil merangkumi syarikat-syarikat yang tersenarai pada tahun 2008 dan 2009. Kajian mendapati kualiti pendapatan adalah lebih tinggi bagi firma yang mana pengerusinya adalah bebas berbanding dengan yang tidak bebas. Walau bagaimanapun, keputusan bagi kebebasan lembaga pengarah adalah tidak menentu. Kajian juga mendapati yang pelabur tidak menjangka bahawa saiz lembaga pengarah adalah indikasi kepada kualiti pendapatan. Dapatan kajian ini menunjukkan yang pelabur masih ragu-ragu terhadap keupayaan lembaga pengarah dalam mempengaruhi kualiti pendapatan, walaupun terdapat inisiatif untuk membuat perubahan kepada tadbir urus syarikat selepas krisis kewangan Asia. Kajian ini memberi isyarat kepada penggubal polisi untuk menilai pentingnya mekanisme lembaga pengarah dalam meningkatkan kualiti pelaporan kewangan dalam kalangan negara membangun.

Kata kunci: Tadbir urus korporat; mekanisma lembaga pengarah; ketekalan pendapatan; kebolehramalan pendapatan; kebermaklumatan pendapatan; kualiti pendapatan

INTRODUCTION

The importance of good corporate governance in attracting long-term investments to capital markets, sustaining economic growth and eventually increasing the overall wealth and welfare of a nation has been increasingly recognized following financial crises and financial reporting scandals of various corporations around the world. A sound system of corporate governance is also expected to curb the managerial use of opportunistic earnings management activities and thus, enhance the quality of reported earnings (Hashim & Devi 2007). Erosions in earnings quality, transparency, and disclosure levels have caused investors to be less confident in the integrity of accounting numbers. Since investors need unbiased earnings information to make the right investment decisions, financial crises and financial reporting scandals have unveiled the importance of corporate governance reforms and highlighted the crucial need for firms to enhance the quality of reported earnings.

In Malaysia, the Malaysian Code on Corporate Governance (MCCG) was first issued in 2000 and later amended in 2007[1]. Constituting an effective board of directors by way of board leadership, board size and board independence are factors included in the essence of the MCCG. This study examines the relationship between board characteristics (i.e., board independence, board size and board leadership) and earnings quality after the amendment of the MCCG in 2007. The revised MCCG is designed to strengthen the role of the board of directors and audit committee; and to ensure that they discharge their roles and responsibility effectively. According to the revised MCCG, Malaysian firms are required to have audit committee members, at least 2/3 of whom are independent and one member being a member of an accounting association or body (revised MCCG 2007).

However, variables relating to the audit committee are not examined since it is a sub-committee of the board; hence, the ability of the board to monitor firm managers would eventually be reflected in the audit committee effectiveness. Moreover, the board of directors has the absolute power of monitoring and controlling the behavior of top managers to ensure that the latter do not behave in a way that may affect the firm's wealth (Fama & Jesnen 1983; Jensen & Meckling 1976).

Relevance and reliability are viewed as two principle qualitative characteristics of earnings numbers. In order to be relevant, among other things, current earnings numbers must be persistent and have predictive values. As for the reliability, earnings information must be representationally faithful and free from errors and bias. Earnings persistence, predictability and informativeness are used to represent earnings quality in this study because the features are important characteristics of relevant and reliable earnings information.

The Malaysian market provides a unique and interesting setting in which to investigate the association between boards of directors and earnings quality for a number of reasons. First, many Malaysian firms are owned by family members who engage themselves in managing the firms and selecting board members (Cheung & Chan 2004; Claessens & Fan 2002; Thillainathan 1991). This will likely jeopardize the true independence of a board of directors. Second, the legal protection for minority shareholders is argued to be relatively weak in the country (La Porta et al. 1998). Third, even though the demand for quality accounting information has increased in the last two decades, the quality of earnings numbers in Malaysia has not experienced much improvement (Fan & Wong 2002). Investors still have reservations about the quality of earnings reported by Malaysian firms (Ball, Robin & Wu 2003). It is expected that if a firm has a strong board characteristics, information asymmetry among contracting parties will be reduced and the quality of earnings numbers will increase. However, research on the relationship between board characteristics and earnings quality produces mixed and inconclusive results. As the legal, social and culture factors of the Asian countries differ from those of Western countries, the question of whether the latter's code of corporate governance is applicable to the former is something to consider.

This study contributes significantly for several reasons. Firstly, to the best of the knowledge of the authors, this study is the first attempt to examine the effectiveness of board characteristics in enhancing the quality of earnings using various proxies of earnings quality in the Malaysian context. A majority of the research focus on one particular attribute of earnings, such as earnings management or earnings informativeness, when investigating the relationship between board mechanisms and the quality of earnings numbers. Some of these studies may indicate a positive association between board mechanisms and earnings quality measured by earnings management, while the others found the opposite. Therefore, the present study

extends previous research by linking board characteristics to the persistence, predictability, and informativeness of earnings numbers. Employing different proxies of earnings may provide collaborating evidence on the investors' perceptions of the effect of board characteristics on financial statements. As far as the proxies of earnings quality is concerned, the present study relates closely to two extant studies, namely Laksmana and Yang (2009) and Velury and Jenkins (2006). The former provides evidence that socially responsible firms experience more predictable and persistent earnings than their peers, whie the latter finds that firms with institutional ownership report more predictable and informative earnings. The present study employs three measures of earnings quality to provide a better understanding of the role of board of directors under different earnings proxies: earnings persistence, earnings predictability, and earnings informativeness. Secondly, the present study extends the work of Ye, Zhang and Rezaee (2010) that investigates gender diversity and earnings quality by emphasizing the monitoring role of board of directors in the financial reporting process. Finally, most extant research conducted in Malaysia focuses primarily upon whether the chairman of the board is also the Chief Executive Officer (CEO) when measuring the relationship between board leadership and the quality of financial reports. The present study expands the previous work by using chairman independence rather than CEO duality as a proxy of board leadership.

Based upon an observation of 660 firm-years covering the years of 2008 and 2009, the present study finds evidence to support the notion that earnings numbers for firms with an independent chairman are of a higher quality than those of firms with a non-independent chairman. However, the results concerning the importance of board independence in enhancing earnings quality are mixed and inconclusive. Given the institutional environment in Malaysia, the results call for more independent, expert and committed directors to play a more effective monitoring role in firms' financial reporting process. The present study provides information that can be considered by regulatory bodies in the future when revising the MCCG in order to regain investors' confidence towards accounting and financial information.

The remainder of this paper is structured as follows. The next section reviews the literature and develops the hypotheses. The third section presents the research methods employed, including a description of the research design, sample selection procedure and variables tested in the main analysis. The fourth section presents the results and discussions. The final section concludes the paper.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Financial reporting system is designed to provide value relevant accounting and financial information for all users including investors. Earnings information should be

relevant in helping investors make correct asset pricing and investment decisions (Yuan & Jiang 2008). However, earnings quality is qualitative in nature and several proxies must be used to measure it. Persistence and predictability are viewed as two important characteristics of earnings numbers that help investors in predicting future earnings and cash flows. Earnings are said to be of high quality when they are persistent. On the other hand, transitory earnings are viewed to be of low quality (Boonlert-U-Thai, Meek & Nabar 2006). In addition, investors use earnings information to analyze a current performance of a particular firm and subsequently estimate its future prospects. Therefore, earnings numbers are viewed to be of high quality when they enable investors to better estimate the future prospects of a firm (Hussainey 2009). It is argued that the importance of predictive nature of accounting earnings is manifested when taking into consideration, for instance, the use of accounting earnings when valuating the equity of firms (Velury & Jenkins 2006). At the other end of the spectrum, earnings informativeness refers to the ability of earnings to influence the expectations of investors with respect to the quality of earnings figures, as reflected in changes in share price (Kormendi & Lipe 1987).

Corporate governance mechanisms are structured to mitigate agency conflicts between managers and owners arising from the divergence of ownership from the control of a firm; constrain opportunistic earnings management activities; and, consequently, increase the veracity of accounting and financial information (Jensen & Meckling 1976). Corporate governance mechanisms also align the interests of shareholders with the managers; regain confidence of investors regarding the integrity of capital markets; and, thus, attract potential investors to these markets (Hashim & Devi 2007). As one of the mechanisms, the board of directors is expected to monitor and control the behavior of managers to ensure they act on the behalf of shareholders and protect shareholders investment (Hendry & Keil 2004). In addition, the board is accountable to endorse the strategy of the firm; develop directional policy; appoint, supervise, and remunerate senior executives; and ensure accountability of the firm to its related parties (Ponnu 2008). To be effective, the Cadbury Report (1992), for example, recommends the board to be comprised of majority of independent directors who are likely to bring an independent judgment. Independent directors effectively monitor firm activities; reduce agency costs; and, hence, improve earnings quality (Fama & Jensen 1983; Jensen & Meckling 1976). Consistent with these assertions, empirical studies conclude that reported earnings quality is enhanced as the proportion of independent directors increases (e.g., Anderson, Gillan & Deli 2003; Dimitropoulos & Asteriou 2010; Petra 2007; Sahlan 2011).

However, proponents of the stewardship theory view insiders (executive directors) as trustworthy individuals and good stewards of firm resources. Compared to independent directors, insiders have more information and knowledge about firm activities, which can facilitate the decision-making process. Lee et al. (2005) support this view by providing evidence that Chinese investors react less, instead of more, to earnings information disclosed by firms with high percentage of independent directors. Furthermore, Tiscini and Di Donato (2009) demonstrate that firms with a large number of independent directors experience earnings of low quality. Since the majority of extant research supports a positive contribution of board independence, the present study expects that firms with a large proportion of independent directors experience higher earnings quality than their lower counterparts. Based on this expectation and agency theory, the following hypothesis is developed:

H_1 Board independence is positively related to earnings quality.

Board size is an important element that impacts the effectiveness of board oversight duties. It is believed that smaller boards are easier to coordinate; quicker in making decisions; less likely to have free-rider problems; and less likely to oppose innovation (Dimitropoulos & Asteriou 2010). Smaller boards also facilitate the influential exchange of ideas between the firm and its directors and are less likely to exacerbate the coalition costs among board members (Vafeas 2000). Consistent with these assertions, Cho and Rui (2009) and Vafeas (2000) provide empirical evidence that firms with smaller boards experience earnings numbers of high quality.

On the contrary, larger boards are viewed as having expert board members, especially those who are independent and can provide environmental links. Studies concerning financial reporting quality conclude that managers of firms with larger boards are less expected to engage in opportunistic behavior of earnings management that may deteriorate the quality of earnings numbers to interested parties (Bradbury et al. 2006; Ismail et al. 2009). The findings of these studies are consistent with the resource dependency theory perception of the role of larger boards in enhancing firm performance and accordingly reducing the incidence of earnings management. On the other hand, studies by Dimitropolus and Asteriou (2010) and Sarikhani and Ebrahimi (2011) reveal that board size has no significant influence on earnings quality. Although the findings are mixed, following the agency theory assertion, the following hypothesis is developed:

H_2 Board size is negatively related to earnings quality.

Board leadership is another mechanism that affects the monitoring role of boards of directors. It is argued that vesting the power of a chairman and a CEO to one individual (i.e., CEO duality) compromises board independence and motivates managers to seek private interest in lieu of shareholder interest (Chang & Sun 2010; Firth, Fung & Rui 2007; Jensen 1994). This argument is in favor of role duality, which views the board chairman as accountable for setting agendas; running the board meetings; and firing, hiring, monitoring and evaluating executive directors

including the CEO. Meanwhile, the principal role of the CEO also requires involves the day to day management activities of the firm (Petra 2007). Combining the two roles enables the CEO to simultaneously make decisions and monitor those decisions and activities (Firth, Fung & Rui 2007). Anderson et al. (2003), Gul and Lai (2002) and Prencipe and Par-Yosef (2011) provide evidence that the quality of reported earnings deteriorates as the differing roles of a chairperson and a CEO are combined.

However, the present study examines whether board leadership improves earnings quality. The independence of the board chairman is used as a broader measure of board leadership because 93% of the sample of the present study exhibits a very high level of compliance with the Malaysian finance committee recommendation that the two positions of a Chairman and a CEO should be separated. Fama and Jensen (1983) expect an independent chairman to improve board effectiveness by providing constant monitoring of the performance of the CEO. It is also expected that an independent chairman will enable the board to effectively discharge its oversight duties, particularly those belonging to the CEO (Jensen 1994). Based upon these expectations, the following alternative hypothesis is developed:

H$_3$ Board leadership is positively related to earnings quality.

RESEARCH METHODS

SAMPLE SELECTION

The sample of the present study consists of all firms listed on the Main Market of Bursa Malaysia for which the necessary data are available for the sample period. Following earnings quality studies, finance firms are excluded from the sample as they are more regulated and have a different nature of financial reports. To increase the homogeneity of the sample, companies whose financial year-ends are not 31 December are eliminated. The present requires data for the years 2007 and 2010, in addition to data for 2008 and 2009, in order to measure earnings quality. Therefore, newly listed firms during the four year period (2007 through 2010) that may bias the findings of this study are eliminated. The final sample consists of 660 observations for 330 companies across the two year period (2008 and 2009). Variables with extreme values are transformed to mitigate the possible influence of outliers on the estimate of coefficients (Tabachnick & Fidell 1996). Table 1 summarizes the sample selection criteria.

The panel data consist of observations over a two year period. However pooled cross-sectional regressions are used to test the hypotheses of the present study because the variables do not vary over time, which does not warrant the use of fixed effect or random effect regressions.

TABLE 1. Sample selection criteria

Criteria	No. of firm-years
Companies listed on the Main market of Bursa Malaysia in 2008 and 2009.	1750
Less:	
Finance, insurance, investment, and real estate companies	(228)
Companies with other than December 31 fiscal year end	(672)
Newly listed companies	(90)
Companies with insufficient financial data	(50)
Companies with insufficient corporate governance data	(50)
Final sample	660

MODELS SPECIFICATION AND ESTIMATION

Earnings numbers are deemed by researchers to be of high quality when they are more persistent; more strongly related to future cash flow realization; and more strongly related to contemporaneous share price performance (Dechow & Schrand 2004). Therefore, earnings persistence, earnings predictability and earnings informativeness are utilized in the present study to represent earnings quality.

Earnings Persistence Following Atwood, Drake and Myers (2010) and Ye et al. (2010), an earnings persistence model is used to measure earnings sustainability. The slope coefficient from a regression of one-year ahead earnings on current earnings is used to test the sustainability of current earnings. Earnings numbers with values of α_1 close to one or greater than one are viewed as persistent,

while those with values of α_1 close to zero are considered as transitory (Boonlert-U-Thai, Meek & Nabar 2006). Additionally, each of the board of director variables are interacted with current earnings to empirically examine the incremental effect of the variables on the relationship between current and future earnings. The primary model is as follows:

$$
\begin{aligned}
\text{EARN}_{it+1} = {} & \alpha_0 + \alpha_1 \text{EARN} + \alpha_2 \text{EARN*BDIND} + \\
& \alpha_3 \text{EARN*BDSIZE} + \alpha_4 \text{EARN*CHIND} \\
& + \alpha_5 \text{EARN*SIZE} + \alpha_6 \text{EARN*DEBT} + \\
& \alpha_7 \text{EARN*LOSS} + \alpha_8 \text{YEAR} + \varepsilon \qquad (1)
\end{aligned}
$$

Where EARN$_{it+1}$ is the one-year-ahead net income before extraordinary items scaled by the beginning of total assets; EARN is current net income before extraordinary items scaled by the beginning of total assets; BDIND is the

proportion of independent directors to the total number of directors on the board; BDSIZE is the total number of directors on the board; CHIND is a binary variable with a value of 1 (0 if otherwise) if board chairman is an independent director; SIZE is the natural log of total assets; DEBT is long term debt to total assets; LOSS is a binary variable with a value of 1 for loss firms and 0 if otherwise; YEAR is a binary variable with 1 for 2008 observations and 0 if otherwise; and* denotes the interactions between variables and ε is the error term[2].

The coefficient α_3 is estimated to have a significant and negative value, while the estimated coefficients on α_2 and α_4 are expected to be significantly positive. Positive and significant coefficients indicate that firms with independent boards and independent chairmen are more likely to have persistent earnings. In contrast, a negative coefficient implies that earnings numbers of firms with large boards are less expected to persist in the future.

Earnings Predictability   Earnings predictability reflects the ability of investors to estimate future cash flows. Among contracting parties, investors use earnings information to analyze the performance of a particular firm of interest and in turn estimate its future prospects. Thus, earnings information of high quality should enable investors to better estimate the future prospects of a firm (Hussainey 2009). Earnings predictability is measured by the slope coefficient from a regression of one-year-ahead cash flows on current earnings (Atwood et al. 2010; Velury & Jenkins 2006; Ye et al. 2010). A positive and significant sign of β_1 implies amore predictive earnings, whereas a negative and significant sign on β_1 is viewed as a less predictive earnings. Interactions of current earnings variable with each of the board of directors' variables are created to examine the incremental effect of the variables on earnings predictability (current earnings-future cash flow relationship). The primary model is as follows:

$$CFO_{it+1} = \beta_0 + \beta_1 EARN + \beta_2 EARN*BDIND + \beta_3 EARN*BDSIZE + \beta_4 EARN*CHIND + \beta_5 EARN*SIZE + \beta_6 EARN*DEBT + \beta_7 EARN*LOSS + \beta_8 YEAR + \varepsilon \quad (2)$$

Where CFO_{it+1} represents the operating cash flows for firm i at year t+1 scaled by the beginning of total assets; and all other variables are as previously defined. The coefficient of β_3 is expected to be significantly negative, while those with β_2 and β_4 are estimated to be positive and significant. Firms with independent boards and independent chairmen are expected to be more likely to report high predictive value earnings. On the other hand, the earnings numbers of firms with large boards are expected to be less likely to have the ability to predict future cash flows.

Earnings Informativeness   In light of efficient market theory, the announcement of earnings numbers should be reflected in price changes. Drawing on the theory, investors face difficulty to predict stock price and returns using earnings numbers contained in financial statements. The return-earnings relationship is the widely used model by academic researchers to investigate the extent to which Earnings Response Coefficient (ERC) increases or decreases from a regression of share returns on earnings (e.g., Ahmed, Hossain & Adams 2006; Niu 2006; Velury & Jenkins 2006). Similarly, the present study uses the slope coefficient from the regression of returns on earnings per share to measure earnings informativeness. Earnings numbers are considered informative when δ_1 in Equation (3) is statistically different from zero. Furthermore, each of the board of director variables is interacted with earnings per share to examine the incremental effect of the variables on the relationship between returns and earnings per share. The model is as follows:

$$RET = \delta_0 + \delta_1 EPS + \delta_2 EPS*BDIND + \delta_3 EPS*BDSIZE + \delta_4 EPS*CHIND + \delta_5 EPS*SIZE + \delta_6 EPS*DEBT + \delta_7 EPS*LOSS + \delta_8 YEAR + \varepsilon \quad (3)$$

RET represents the share returns cumulated over a period of 12 months starting from nine months before fiscal year to three months after the fiscal year end, calculated as $(P_{it} - P_{it-1}) / P_{it-1}$ where P_{it} is the last traded total returns index of firm i at time t and P_{it-1} is the last total returns index of firm i at time t-1. EPS is earnings before extraordinary items per share for firm i at year t, divided by the beginning of share price; and all other variables are as previously defined. α_3 is estimated to be negatively significant, while the estimated coefficients of α_2 and α_4 are expected to have positive and significant values. Positive and significant coefficients indicate that firms with independent boards and independent chairman are more likely to report informative earnings. In contrast, a negative coefficient implies that earnings numbers of firms with large boards are expected to be less informative.

In the present study, independent non-executive directors are defined as directors who are not officers of the firm; independent from the management and controlling shareholders; and not representative of concentrated or family holding of its shares (Finance Committee on Corporate Governance 2000). An independent chairman is one who is not a current or former CEO of the firm and he or she must be independent from the management of the firm (Carrott 2008; Felton & Wong 2004). Size (SIZE), leverage (DEBT) and Loss (LOSS) are included in the three models to control for their possible impact on the reporting quality of earnings numbers as found in extant studies. In addition, a year dummy variable is included in the models to control for the year fixed effect as the present study uses the pooled cross-sectional models to run the regressions.

The existence of multicollinearity problems is assessed by the correlation matrix and the Variance Inflation Factor (VIF). The coefficients for the correlation matrix and VIF values show that multicollinearity problems do not exist. Using the White Test, hetroskedasticity is found to be a problem in the models. To address this problem, a heteroskedasticity-corrected least square is estimated using Gretl software[3].

RESULTS

Table 2 shows the descriptive statistics of the continuous variables, while Table 3 reports the distribution of companies according to board leadership (CHIND) and performance (LOSS). The mean values of one-year-ahead earnings (EARN$_{it+1}$), current earnings (EARN$_{it}$), and one-year-ahead operating cash flows (CFO$_{it+1}$) are 3.5%, 3.4%, and 6.7%, respectively. The mean value of share returns (RET) is 20.7%, whereas earnings per share (EPS) has a mean value of 2.5%. The value of board independence

(BDIND) ranges from 17% to 86%, with a mean value of 44%. This shows that companies exist that do not comply with the requirement to have at least one-third of the directors whom are independent. The board size (BDSIZE) ranges from 4 to 17 with a mean of 8 directors. This average is within the range recommended by Jensen (1994), a number which is said to contribute to effective decision makings. Table 3 shows that 223 (34%) of the firms have an independent chairman (CHIND) and 151 firms (23%) are considered poor performers.

TABLE 2. Descriptive statistics for continuous variables

Variables	Min	Max	Mean	Median	Std dev	Skewness	kurtosis©
EARN$_{it+1}$	-0.396	0.390	0.035	0.038	0.085	-0.656	4.348
EARN	-0.475	0.390	0.034	0.038	0.083	-0.716	5.621
CFO$_{it+1}$	-0.662	0.546	0.067	0.056	0.102	-0.123	6.729
RET	-1.466	4.015	0.207	0.116	0.644	1.452	4.419
EPS	-6.578	2.627	0.025	0.076	0.502	-6.912	82.286
BDIND	0.167	0.857	0.439	0.429	0.108	0.727	0.526
BDSIZE	4	17	7.55	7.000	1.842	1.011	2.642
SIZE (in million RM)	22.9	43,407	1,220.8	341.8	3,515.9	7.563	69.573
DEBT	0.000	0.710	0.098	0.050	0.124	1.858	3.749

Notes: EARN$_{it+1}$: one-year-ahead net income before extraordinary items scaled by the beginning of total assets. EARN$_{it}$: current net income before extraordinary items scaled by the beginning of total assets. CFO$_{it+1}$: one-year-ahead operating cash flows scaled by the beginning of total assets. RET$_{it}$: share returns for 12 months starting from nine months before fiscal year to three months after the fiscal year end, calculated as (P$_{it}$-P$_{it-1}$) / P$_{it-1}$ (P$_{it}$ is the last traded total returns index of firm i at time t and P$_{it-1}$ is the last total returns index of firm i at time t-1). EPS$_{it}$: earnings before extraordinary items per share scaled by the beginning of share price. BDIND$_{it}$: the percentage of independent non-executives directors on the board, BDSIZE$_{it}$: total number of directors on the board. ZISE$_{it}$: total assets, DEBT: long term debt to total assets ratio. © Variables with skewness values more (less) than 1.96 and kurtosis values more (less) than 2 are transformed using either normal score or natural logarithm.

TABLE 3. Distribution of dummy variables

Variables	No		Yes	
	Freq.	Mean	Freq.	Mean
CHIND	437	66.212	223	33.788
LOSS	509	77.12	151	22.88

Notes: CHIND: dummy variable with a value of 1 if the board is headed by independent chairman and 0 if otherwise. LOSS: dummy variable which takes a value of 1 for loss firms and 0 if otherwise.

Table 4 shows the Pearson correlation matrix of the variables tested without the interaction effects to show the association between variables. In order to examine the univariate association between board characteristics and earnings quality proxies, the sample is partitioned into two groups based upon BDIND, BDSIZE and CHIND. Board independence is measured using a binary variable with a value of 1 if BDIND is greater than the median value and zero if otherwise. Similarly, board size takes a value of 1 if BDSIZE is greater than the median value and zero if otherwise. Board leadership or chairman independence (CHIND), as previously measured, takes a value of 1 if the chairman is independent and 0 if otherwise. The proxies

of earnings quality of the two groups of BDIND, BDSIZE and CHIND are then compared.

Univariate tests are performed to support the main analysis. The results, as presented in Table 5, show that the difference between low and high board independence (and board leadership) is not statistically significant for each of earnings quality proxies. The scores for earnings quality proxies differ significantly between large and small companies. However, in contradiction with the expectations of the present study, firms with larger boards are more likely to report higher earnings quality. In sum, the findings do not support the contention that firms with independent board members, independent chairmen and smaller size experience earnings numbers of high quality.

Table 6 reports the results of the tests of the association between the board of director variables and earnings persistence using the heteroskedasticity-corrected least square regressions. As shown in the table, the estimated coefficient on EARN is positively significant at the 0.01 level, implying that Malaysian investors make use of the listed companies current earnings to evaluate the sustainability of earnings numbers in the coming year. As far as the board variables are concerned, only board

TABLE 4. Correlation matrix

Exp variables	1	2	3	4	5	6	7	8	9	10	11
1. $EARN_{it+1}$	1										
2. EARN	0.727**	1									
3. CFO_{it+1}	0.535**	0.462**	1								
4. RET	0.152**	0.170**	0.022	1							
5. EPS	0.522**	0.476**	0.257**	0.333**	1						
6. BDIND	-0.123**	-0.090*	-0.130**	-0.009	-0.079*	1					
7. BDSIZE	0.157**	0.180**	0.101**	0.033	0.151**	-0.274**	1				
8. CHIND	-0.067	-0.022	-0.054	-0.017	-0.019	0.235**	-0.017	1			
9. SIZE	0.209**	0.214**	0.128**	-0.048	0.157**	-0.069	0.361**	-0.015	1		
10. BDET	-0.224**	-0.218**	-0.120**	-0.068	-0.104**	0.027	0.042	0.023	0.294**	1	
11. LOSS	-0.507**	-0.715**	-0.303**	-0.107**	-0.708**	0.089*	-0.216**	0.038	-0.250**	0.104**	1

Notes: ** and * denote significance at the 0.05 and 0.10 levels, respectively.

TABLE 5. Univariate tests

Variable	Board independence		Difference in means	Board size		Difference in means	Board leadership		Difference in means
	1	0		1	0		1	0	
PERC	0.0338	0.0372	-0.0034	0.0404	0.0250	0.0154***	0.0333	0.0362	-0.0029
PRED	0.0659	0.0686	-0.0027	0.0709	0.0592	0.0117***	0.0655	0.0678	-0.0023
ERC	0.2075	0.2055	0.0020	0.2105	0.1987	0.0118**	0.2054	0.2072	-0.0018

Notes: PERC: relationship between one-year-ahead earnings and current earnings. PRED: relationship between one-year-ahead operating cash flows and current earnings. ERC: earnings response coefficient. ** and *** denote significance at the 0.05 and 0.01 levels, respectively.

TABLE 6. Regression results for the association between board characteristics and earnings persistence

	Dependent variable: Earnings ($EARN_{it+1}$)			
Explanatory variables	*Expected sign*	*Coefficient*	*T-statistic*	*VIF*
Const	?	-0.018	-0.504	
EARN	+	0.780	16.829***	3.063
EARN*BDIND	+	-0.022	-0.672	1.203
EARN*BDSIZE	-	0.017	0.528	1.333
EARN*CHIND	+	0.134	2.440**	1.709
EARN*SIZE	-	-0.080	-2.235**	1.399
EARN*DEBT	-	0.005	0.190	1.150
EARN*LOSS	-	-0.160	-2.165**	2.756
YEAR(2008)	?	-0.037	-0.749	1.004
R^2		0.584		
Adjusted R^2		0.579		
F-statistic		114.108***		

Notes: $EARN_{it+1}$: normal score of one-year-ahead net income before extraordinary items scaled by the beginning of total assets. EARN: normal score of current net income before extraordinary items scaled by the beginning of total assets. BDIND: the percentage of independent non-executives directors on the board, BDSIZE: normal score of total number of directors on the board. CHIND: board leadership. ZISE: natural log of total assets, DEBT: normal score of long term debt to total assets ratio. LOSS: firm loss. YEAR: fixed year effects. *, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels, respectively.

leadership has a significant effect on earnings persistence and the direction is as expected. This indicates that firms with an independent chairman are more likely to sustain their earnings numbers. Contrary to the expectations of the present study, board independence and board size are not significantly related to one-year-ahead earnings, indicating that the two variables do not influence investor perceptions concerning the ability of current earnings to continue in the future.

As for the control variables, EARN*SIZE is negatively and significantly associated with one-year-ahead earnings. This result is consistent with the expectation of the present study that larger firms produce earnings numbers of less quality as managers of these firms adopt income-decreasing discretionary accruals to reduce political costs (Watts & Zimmerman 1978). Moreover, the coefficient of

EARN*LOSS has a negative and significant impact on one-year-ahead earnings, supporting the notion that managers of loss firms are more likely to engage in opportunistic earnings management activities to avoid exhibiting negative earnings.

The results of the relationship between the board of director variables and earnings predictability is presented in Table 7. The positive and significant coefficient of EARN indicates that Malaysian investors use the reported earnings of firms to anticipate future cash flows. Consistent with earnings persistence model, EARN*CHIND is positively and significantly associated with one-year-ahead cash flows. This result implies that current earnings numbers of firms with an independent chairman are better able to predict future cash flows than those of firms with a non-independent chairman.

TABLE 7. Regression results for the association between board characteristics and earnings predictability

| Dependent variable: operating cash flows (CFO_{it+1}) | | | | |
Explanatory variables	*Expected sign*	*Coefficient*	*T-statistic*	VIF
const	?	-0.180	-3.919***	
EARN	+	0.482	7.912***	3.063
EARN*BDIND	+	-0.066	-1.881*	1.203
EARN*BDSIZE	-	-0.057	-1.549	1.333
EARN*CHIND	+	0.185	2.911***	1.709
EARN*LNSIZE	-	-0.015	-0.390	1.399
EARN*DEBT	-	-0.050	-1.731*	1.150
EARN*LOSS	-	-0.184	-2.208**	2.756
YEAR008	?	0.302	4.716***	1.004
R^2		0.290		
Adjusted R^2		0.281		
F-statistic		33.216***		

Notes: CFO_{it+1}: normal score of one-year-ahead operating cash flows scaled by the beginning of total assets. EARN: normal score of current net income before extraordinary items scaled by the beginning of total assets. BDIND: the percentage of independent non-executives directors on the board, BDSIZE: normal score of total number of directors on the board. CHIND: board leadership. ZISE: natural log of total assets, DEBT: normal score of long term debt to total assets ratio. LOSS: firm loss. YEAR: fixed year effects. *, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels, respectively.

However, the negative and significant coefficient of EARN*BDIND suggests a high predictive value of earnings for firms with executive directors. This result is in conformity with the stewardship theory's perception of the ability of executive directors to enhance firm performance and hence minimize the probability of reporting less predictive earnings. Inconsistent with the univariate tests, board size has no significant incremental influence on current earnings-future cash flow relation. The estimated coefficients on EARN*DEBT and EARN*LOSS are negatively and significantly associated with one-year-ahead cash flows. These results imply that managers of high leveraged and loss firms are more likely to engage in opportunistic earnings management activities to avoid violation of debt covenant and presenting negative earnings. Hence, the

ability of earnings to predict future cash flows in such firms is impaired.

Finally, the results on the relationship between board characteristics and earnings informativeness is presented in Table 8. The estimated coefficient on EPS is positive and significant, supporting the view that Malaysian investors make use of information concerning the annual earnings of listed companies and, consequently, earnings numbers are informative. EPS*BDIND is positively and significantly related to share returns, but with a marginal value of 0.043. In conformity with earnings persistence and predictability models, the coefficient of EPS*CHIND has a positive and significant influence on share returns. The results imply that firms with independent directors and an independent chairman are more likely to report informative earnings.

These findings are consistent with the agency theory's perception of the role of independent boards in enhancing earnings quality. Among the controlling variables, EPS*LOSS is significantly associated with share returns. This supports the negative contribution of loss on the quality of earnings information.

In Malaysian firms, the presence of family members on the board is prevalent. This will make board independence represent the "form," but not the "substance," of an effective board of directors. The findings of the present study indicate a need to revisit the revised MCCG in the near future in order to restore investor confidence regarding accounting and financial information. The findings also indicate a need for more independent and committed directors to play a more effective monitoring role in the financial reporting processes of firms. With the exception of board leadership, the results are consistent with the pre-revised MCCG 2007 studies, which suggest board of director mechanisms are not effective in enhancing financial reporting quality (e.g., Abdullah, Yusof & Nor 2010; Bradbury et al. 2006; Ismail et al. 2009; Mohamad, Rashid & Shawtari 2012).

TABLE 8. Regression results for the association between board characteristics and earnings informativeness

		Dependent variable: share returns (RET)		
Explanatory variables	*Expected sign*	*Coefficient*	*T-statistic*	*VIF*
const	?	0.406	8.849***	
EPS	+	0.368	7.674***	3.063
EPS*BDIND	+	0.043	1.741*	1.200
EPS*BDSIZE	-	0.009	0.250	1.410
EPS*CHIND	+	0.108	1.831*	1.668
EPS*LNSIZE	-	0.009	0.226	1.541
EPS*DEBT	-	0.016	0.511	1.157
EPS*LOSS	-	-0.361	-4.187***	2.575
YEAR008	?	-1.016	-18.266***	1.541
R^2		0.490		
Adjusted R^2		0.484		
F-statistic		78.287***		

Notes: RET: normal score of share returns for 12 months starting form nine months before fiscal year to three months after the fiscal year end, calculated as $(P_{it}-P_{it-1}) / P_{it-1}$ (P_{it} is the last traded total returns index of firm i at time t and P_{it-1} is the last total returns index of firm i at time t-1). EPS: normal score of earnings before extraordinary items per share. BDIND: proportion independent non-executives directors on the board. BDSIZE: normal score of total number of directors on the board. CHIND: board leadership. ZISE: natural log of total assets. DEBT: normal score of long term debt to total assets ratio. LOSS: firm loss; YEAR: fixed year effects. *, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels, respectively.

ADDITIONAL ANALYSES

Corporate governance researchers argue that a composite index can capture the actual capability of corporate governance practices to enhance earnings quality (e.g., Gul et al. 2011; Jiang & Anandarajan 2009; Lara, Osma & Penalva 2007; Pergola & Joseph 2011; Yu 2011). It has also been argued that traditional measures of mechanisms of the board of directors (i.e., board independence, board size, CEO duality, and board expertise) do not guarantee effective monitoring of the board as these mechanisms complement each other and any attempt to individually assess their quality is not appropriate (Connelly, Limpaphayom & Nagarajan 2012; Lara et al. 2007). Hence, the present study develops a board of directors index (BDI) that aggregates the scores of the board mechanisms investigated in the present study[4]. The incorporated mechanisms and scores attached to them are shown in Appendix 1.

BDI ranges from zero to three. A higher index score indicates effective board of directors, with a BDI of three being the highest. The three previous models are rerun using the new variable (BDI) instead of board independence, board size and board leadership[5]. The untabulated results indicate that even though the coefficient of BDI is positive, the board of director index is not statistically related to earnings persistence, earnings predictability and earnings informativeness. However, these findings are not surprising as the board practices incorporated in the index and their related weights are arbitrary (Klein, Shapiro & Young 2005; Yu 2011). Therefore, the index may miss the actual source and magnitude of board effects on earnings quality.

The present study also examines whether the effectiveness of the board of directors is influenced by information environment. Gosh and Moon (2010) argue that investors are less expected to rely on CEO ownership to evaluate earnings quality when firms have other sources of

information about the CEO. Given that large firms possess better information environments than small firms, the relationship between the board of directors' variables and earnings quality is expected to be weaker in large firms. To test this proposition, the sample is partitioned into large and small firms based upon total assets (a measure of firm size). Firms with above (below) sample median total assets are considered as large (small) firms. Only the results of the partitioned earnings predictability model are reported (see Table 9) since the board variables have no significant effect on earnings persistence and informativeness in both the large and small firm subsamples[6].

The result of the earnings predictability model shows that the effect of board leadership on the ability of earnings to predict future cash flows is stronger for small firms than for large firms. Even though board size has no influence on earnings predictability in large firms, it is negatively and significantly related to one-year-ahead cash flows in the small firms subsample. The adjusted R^2 is 0.464 (*F-stat* = 42.373) for small firms, but is 0.215 (*F-stat* = 13.708) for large firms. Overall, this finding lends partial support to the notion that investor reliance on information of the board of directors to assess the quality of reported earnings is much greater when firms are relatively small.

TABLE 9. Association between board characteristics and earnings predictability in different firm size

Explanatory variables	Combined	Large firms	Small firms
	N = 660	N = 325	N = 335
Const	-0.180(-3.919)***	-0.149(-2.110)**	-0.211(-2.845)***
EARN	0.482(7.912)***	0.507(5.630)***	0.436(5.111)***
EARN*BDIND	-0.066(-1.881)*	-0.071(-1.123)	-0.083(-2.169)**
EARN*BDSIZE	-0.057(-1.549)	0.022(0.320)	-0.073(-1.710)*
EARN*CHIND	0.185(2.911)***	0.215(1.660)*	0.186(3.055)***
EARN*DEBT	-0.050(-1.731)*	-0.079(-1.379)	-0.062(-2.378)**
EARN*LOSS	-0.184(-2.208)**	-0.221(-1.502)	-0.132(-1.232)
YEAR008	0.302(4.716)***	0.187(2.120)**	0.350(3.980)***
Adjusted R^2	0.281	0.215	0.464
F-statistic	33.216***	13.708***	42.373***

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels, respectively.

SUMMARY AND CONCLUSION

The present study investigates the association between board characteristics and earnings quality in the Malaysian context using three measures of earnings quality: earnings persistence, predictability, and informativeness. The findings provide useful and practical implications. First, investors of firms with an independent chairman are better able to evaluate the sustainability, predictability and informativeness of earnings numbers. Second, although independent directors have a positive and significant role in enhancing the informativeness of earnings, their contribution is negative towards improving earnings ability to predict future cash flows. Third, investors do not perceive board size as a good indicator of relevant and reliable earnings numbers. Management intervention in the selection of outside directors; the lack of knowledge of the affairs of a firm by outside directors; the informational dependence of outside directors on the top managers; and the domination and controlling of top managers on board activities in Malaysian firms may possibly explain the unexpected results. the present study indicates a need for a clear definition of the term "independence." For example, Bursa Malaysia may consider director independence to include other factors such as the participation of directors in the share options or stock performance-based

pay schemes of a firm; and the tenure of a director as a board member or an employee of the company. Further, the present study provides evidence to support a stricter definition of chairman independence. The current requirement of the MCCG that a role separation between the chairman and the CEO of a firm exist may not be strict enough to warrant an independent Chairman[7].

The findings of the present study may be subjected to several limitations that could be a platform for future research. Since the time period of the present study is limited to two years (i.e., 2008 and 2009), the measurement of earnings proxies (i.e., earnings persistence, earnings predictability and earnings informativeness) is based upon the pooled models for the two years. A longitudinal study can be conducted to provide an in-depth understanding of the sustainability and predictability of current earnings. Second, the findings of the present study may not be applicable to other developed countries with high investor protection; less family ownership; less concentrated and no pyramidal ownership. As the conflict of interest is different in the two settings (developed and developing countries), governance practices play different roles in these settings.

Future studies may use a number of years after the new requirements to perform and in-depth examination of the effect of corporate governance practices on the earnings

matrices used in the present study. It would be worthwhile to investigate the role of other governance practices (e.g., independent directors' commitment, directors share option schemes, family ownership, and matters related to audit, compensation and nominating committees) in enhancing earnings persistence, predictability and informativeness.

ENDNOTES

[1] The Code was again revised is 2012 and issued as Malaysian Code on Corporate Governance 2012.

[2] For simplicity and consistency, the use of the subscript *it* (to denote company *i* and current time *t*) is omitted in all the independent variables and error term on the right hand side of the equation. This also applies to Equations 2 and 3.

[3] To see how heteroskedasticity-corrected least square is performed, please refer to the study by Aktas and Oncu (2002: 81).

[4] Extant indexes, such as the Gombers' index or the Brown and Gayor's index, are not suitable for the Malaysian market as they are built mainly from provisions relating to takeover defences and restrictions on shareholders rights. Hostile takeovers are rare in the Malaysian market due to concentrated ownership and unique institutional settings.

[5] Like other research on corporate governance, the present study expects BDI to have a positive and significant influence on earnings quality.

[6] Except for Table 9, tables showing the results of additional analyses are not included in the paper. However, they are available from authors upon request.

[7] Effective from 2012, Bursa Malaysia made it compulsory for Malaysian firms to separate the two roles of CEO and chairman; and to have the chairman who must be a non-executive member of the board.

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APPENDIX 1

Board of Directors Index (BDI) components

Items	Score
BDIND	1 for firms with above sample median BDIND for the year and 0 if otherwise
BDSIZE	1 for firms with below sample median BDSIZE for the year and 0 if otherwise
CHIND	1 for firms with independent chairman and 0 if otherwise