



Corporate governance and earnings forecasts accuracy

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Abstract

Purpose – This paper aims to extend the research on the Malaysian initial public offering (IPO) management earnings forecasts by examining the impact of corporate governance mechanisms and earnings forecasts accuracy. It seeks to investigate whether effective corporate governance is a credible signal of improving the quality of financial information.

Design/methodology/approach – A sample of 235 IPO companies that went public during the period 1999-2006 was used. Absolute forecast error was used to proxy for earnings forecast accuracy and to represent financial disclosure quality.

Findings – Companies with a higher percentage of non-executive directors in the audit committees and larger audit committee size exhibit greater forecast accuracy. The accuracy of IPO earnings forecast is also positively influenced by the use of brand-name auditor.

Practical implications – The results suggest that effective corporate governance is a credible signal of improving the quality of financial information. The role of audit committee as financial monitors as suggested by the agency theory supports this paper.

Originality/value – The results are consistent with the belief that effective corporate governance is associated with higher financial disclosure quality. The results also support the decisions made by Malaysian regulators such as the Securities Commission to enhance the quality of financial disclosure by revising the Malaysian Code on Corporate Governance to encourage public companies to implement good governance practices such as audit committee independence.

Keywords Managers, Earnings, Forecasting, Corporate governance, Malaysia

Paper type Research paper

1. Introduction

Transparent financial disclosure minimises agency problems by reducing the asymmetry of information between management and shareholders. On the other hand, poor financial disclosure may deceive shareholders leading to unfavourable effects on their wealth. Recent high-profile corporate failures have heightened global awareness of the importance of corporate transparency and accountability. In response to this, the Malaysian Securities Commission (SC) focused on corporate boards as the crucial means for improving the quality of financial information provided by listed companies. In addition, financial reporting practices can also be monitored by having effective board audit committees. This paper examines whether effective corporate governance is associated with higher financial disclosure quality, proxied by the accuracy of management earnings forecasts disclosed in initial public offering (IPO) prospectuses[1].

The widespread failure of Malaysian IPO companies to achieve their earnings forecasts is a major concern for capital market regulators as this reflects badly on the



quality of companies that go public. The SC revealed that out of 57 companies that were newly listed in 2005 and had announced audited results by July 2006, 32 companies had fallen short of their earnings forecasts (*The Edge Malaysia*, 2006). In addition, more than half of these optimistic earnings forecasts showed deviations exceeding 20 per cent (*New Straits Times*, 2006).

A Revised Code on Corporate Governance, effective from 1 October 2007, was released by the SC and replaces the existing regulations issued in March 2000. The code aims to strengthen the roles and responsibilities of the boards of directors and audit committees to ensure that they discharge their roles and responsibilities effectively. Under the Revised Code on Corporate Governance (SC, 2007), independent non-executive directors (INEDs) should continue to make up at least one-third of the members of a board to ensure that the board provides an independent oversight function. The Revised Code also strengthens regulations on the independence and competence of audit committees by excluding executive directors from membership and requiring all audit committee members to be financially literate with at least one of them being a member of an accounting association or body.

These regulatory reforms, presuppose that corporate governance structures, as expressed by corporate boards and audit committees, affect the quality of financial disclosure practices. Given that the disclosure of management earnings forecasts in the IPO prospectus is mandatory for companies seeking a listing on the Main Board and on the Second Boards of the Malaysian Stock Exchange (i.e. Bursa Malaysia) as a means of reducing information asymmetry between management and potential investors, the credibility of these earnings forecasts is paramount. Although extensive studies have been undertaken on management earnings forecasts for IPO companies, the relationship between corporate governance and mandatory disclosure of earnings forecasts has not been thoroughly examined. The accuracy of management earnings forecasts is an important factor in building and maintaining investors' confidence about the credibility of such financial disclosures.

This paper contributes to the corporate governance and IPO literature. This is the first comprehensive study that examines the impact of governance mechanisms on mandatory IPO earnings forecasts in Malaysia. Prior studies on management earnings forecasts using Malaysian data (Jelic *et al.*, 1998; Ismail and Weetman, 2007), focused on factors unrelated to corporate governance such as company age, earnings reduction prior to IPO, type of industry, and economic condition. None of them fully addressed the effect of corporate boards and audit committees on the accuracy of management earnings forecasts.

Using a sample of 235 IPO companies during the periods 1999-2006, we find that audit committees with non-executive directors (NEDs), and audit committee size, have a negative association with the absolute forecast error (AFE) (that is to say, a positive association with forecast accuracy). Our results indicate that the greater the proportion of NEDs in the audit committee and the larger the audit committee size, the more accurate the forecast made by the management of IPO companies. However, we do not find any significant relationships between board characteristics and AFEs. The results of our paper provide a degree of support for recent efforts by the SC to regulate the structure of corporate boards and audit committees to ensure the quality of financial disclosure. We also find that IPO company size has a positive relationship with the AFE. This result suggests that IPO earnings forecasts are less credible for larger companies.

This paper proceeds as follows. Section 2 provides a brief review of literature and develops our research proposition. The methods are discussed in Section 3, while the sample selection and data sources are discussed in Section 4. Section 5 reports the results of our study and Section 6 concludes the paper.

2. Literature review and research proposition

There is ample literature on the effects of corporate boards on earnings management and earnings quality (Klein, 2002; Lobo and Zhou, 2006), on level and structure of executive compensation (Core *et al.*, 1999; Anderson and Bizjak, 2003) and on company performance (Haniffa and Hudaib, 2006; Chen *et al.*, 2007). The effect of corporate boards on disclosure quality is not extensively examined in the literature with the exceptions of Karamanou and Vafeas (2005) in the USA, Beekes and Brown (2006) in Australia, Cheng and Courtenay (2006) in Singapore, Chin *et al.* (2006) in Taiwan and Bedard *et al.* (2008) in Canada.

Beasley (1996) and Klein (2002) suggest that outside directors provide a higher quality of board oversight. Cheng and Courtenay (2006) show that companies with a higher proportion of independent directors, or with independent directors being the majority on the boards, have higher levels of voluntary disclosure. This suggests that a board's degree of independence is directly related to higher financial disclosure quality.

Karamanou and Vafeas (2005) examine management forecasts as a proxy for disclosure quality for a sample of 275 *Fortune* 500 companies in the USA during the period 1995-2000. They find that the percentage of outside directors is directly related to greater forecast accuracy, measured by the absolute value of the forecast error. Karamanou and Vafeas (2005) also test the association between ownership structure and forecast accuracy, and find higher insider ownership leads to less-credible management forecasts. Similar inverse relationship for ownership structure is also found by Chin *et al.* (2006) using a sample of 528 Taiwanese-listed companies from 1999 to 2001. Chin *et al.* (2006) suggest that companies tend to issue more inaccurate forecasts in instances of greater divergence between the ultimate owner's control and the equity ownership level.

Beekes and Brown (2006) examine the relationship between corporate governance index and various indicators of disclosure quality, including the accuracy, bias and level of disagreement in analysts' earnings forecasts. They find that the disclosures by better-governed companies are more informative. Another board characteristic that is possibly related to disclosure quality is board size. Karamanou and Vafeas (2005) suggest that board size is likely to be related to monitoring diligence. They argue that adding more people to the board enhances its knowledge base. However, the dark side of larger boards is less flexibility and more inefficiency. Their evidence shows that board size has no relationship with the accuracy of management earnings forecast. Similarly, Bedard *et al.* (2008) find that board of directors characteristics such as board size, board independence and CEO duality are not significantly related to the credibility of management earnings forecasts.

Since the beginning of the 1990s, the effectiveness of audit committees in monitoring the financial reporting process has become one of the most significant themes in corporate governance debates (Gendron and Bedard, 2006). There are several empirical studies that examine the characteristics of audit committee and identify those that enhance the quality of financial reporting (Klein, 2002; Felo *et al.*, 2003; Xie *et al.*, 2003; Abbott *et al.*, 2004; Bedard *et al.*, 2004; Krishnan, 2005; Persons, 2005; Lin *et al.*, 2006; Qin, 2007; Zhang *et al.*, 2007). The quality of financial reporting is proxied by incidence of

fraud or restatements, extent of earnings management, disclosure quality or internal control weaknesses, among well-established listed companies. Our study extends the literature regarding the effects of audit committee characteristics on disclosure quality by examining a sample of newly listed companies, and is in line with Bedard *et al.* (2008).

Klein (2002) and Bedard *et al.* (2004) indicate that audit committee independence reduces earnings management. Abbott *et al.* (2004) find a negative association between audit committee independence and the likelihood of financial reporting restatement and financial reporting fraud. Persons (2005) also provides evidence to support the view that independent audit committees contribute positively to the financial reporting process, by showing that the likelihood of financial statement fraud is lower when the audit committee is comprised solely of independent directors.

Felo *et al.* (2003) find a positive relationship between financial reporting quality and audit committee size in a univariate analysis but this relationship does not hold in the multivariate analysis. Lin *et al.* (2006) provide evidence which suggests a negative association between the size of audit committee and the occurrence of earnings management.

Another audit committee attribute that has been widely examined is financial expertise. Abbott *et al.* (2004) and Bedard *et al.* (2004) suggest that audit committee financial expertise reduces financial restatements or earnings management. DeFond *et al.* (2005) argue that appointment of accounting financial experts generates a positive stock market reaction which suggests that the market believes that the specialised skills possessed by accounting financial experts are useful in executing their role as financial monitors. Zhang *et al.* (2007) find that companies are more likely to be identified with internal control weaknesses, if their audit committees have less-financial expertise or, more specifically, have less-accounting financial expertise and non-accounting financial expertise; this is consistent with prior evidence by Krishnan (2005). However, in a more recent study in Canada, Bedard *et al.* (2008) find no significant association between audit committee attributes (i.e. independence and having expertise in financial matters) and forecast accuracy.

Based on the evidence to date, we predict that the accuracy of earnings forecasts positively correlate with the effectiveness of boards and audit committees, and thus arrive at the following research proposition:

- P1.* The accuracy of earnings forecasts is greater in IPO companies with a properly structured audit committee and board of directors.

3. Methods

3.1 Measure of forecast accuracy

Following Bamber and Cheon (1998) and Karamanou and Vafeas (2005), management earnings forecasts were chosen to examine the relationship between governance and financial disclosure quality. This paper used forecast accuracy to proxy for disclosure quality. Forecast accuracy is measured by the AFE, so greater accuracy corresponds to a smaller AFE. In a formula form, forecast error (FE) is written as:

$$FE = \frac{A_{i,T} - F_{i,T}}{|F_{i,T}|}$$

where, FE is forecast error, $A_{i,T}$ is actual earnings of company i for period T , $F_{i,T}$ is forecast earnings of company i for period T . Thus, the AFE is measured as the absolute difference between the actual earnings and the forecast earnings deflated by the absolute forecast earnings[2]. If the management of the IPO company makes an accurate forecast, the mean AFEs should be lower in value and not be significantly different from zero. Prior studies (Williams, 1996; Tan *et al.*, 2002; Karamanou and Vafeas, 2005) suggest that the accuracy of management earnings forecasts gives an indication of the credibility of management.

Earnings forecast is considered biased if the actual earnings are systematically over or under the forecasted earnings. Forecasts are optimistically biased if forecast earnings are greater than actual earnings (FE is less than 0). On the other hand, if forecast earnings are lower than actual earnings (FE is more than 0), these forecasts are conservative or pessimistically biased. Jaggi *et al.* (2006) argue that managers tend to issue more optimistic forecasts to obtain higher offering proceeds.

3.2 Measure of factors influencing the accuracy of earnings forecasts

We perform a multivariate analysis to identify factors that may influence financial disclosure quality. The level of AFE is regressed on variables relating to board and audit committee characteristics and on five additional control variables: auditor reputation, company size, earnings reduction, forecasts horizon and company age. Our selection of potential control variables is guided by prior Malaysian evidence (Jelic *et al.*, 1998) and other studies on IPO earnings forecasts accuracy. We use the ordinary least squares (OLS) multiple regression model as follows:

$$\begin{aligned} AFE_i = & \alpha_0 + \beta_1 INED + \beta_2 BDSIZE + \beta_3 ACNED + \beta_4 ACSIZE + \beta_5 PFMSHIP \\ & + \beta_6 AUDITOR + \beta_7 COSIZE + \beta_8 EARNRED + \beta_9 FHORIZON \\ & + \beta_{10} AGE + \varepsilon_i \end{aligned}$$

where:

- AFE = the absolute difference between actual earnings and the earnings forecasts deflated by absolute earnings forecasts.
- INED = percentage of independent non-executive directors on board.
- BDSIZE = total number of directors on the board.
- ACNED = percentage of non-executive directors on audit committee.
- ACSIZE = total number of directors in audit committee.
- PFMSHIP = dummy variable of "1" if at least one member of audit committee possesses professional accounting qualification and "0" otherwise.
- AUDITOR = dummy variable of "1" if auditor is Big4/5 (Arthur Andersen, DeloitteKassimChan, Ernst and Young, KPMG, PricewaterhouseCoopers, or their pre-merger equivalents) and "0" otherwise.
- COSIZE = company size, measured by ln total assets, at the date of prospectus.

EARNRED = dummy variable of “1” if company experienced a reduction in earnings a year prior to the IPO and “0” otherwise.

FHORIZON = forecast horizon, measure by the number of months from the management forecast date to end of the period for which the forecast is made.

AGE = company age, measured by $\ln(1 + \text{number of years between incorporation[3] and the IPO date})$.

ε_i = error terms.

The additional five variables have all been identified in previous studies as being likely to influence the level of forecasts accuracy. Auditors play a significant role in validating the prospective financial information made by the IPO management at the time of public offerings. The approved auditing standard “The Examination of Prospective Financial Information” stipulates that the auditor should not accept, or should withdraw from, an engagement when the assumptions accompanying the forecasts are clearly unrealistic or when the auditor believes that the prospective financial information will be inappropriate for its intended use (Para 11, AI 3400). Cormier and Martinez (2006) and Lee *et al.* (2006) suggest that higher quality auditing is associated with greater earnings forecasts accuracy. This leads to an expectation that reputable auditors (BIG4/5) will encourage IPO companies to provide more accurate earnings forecasts. Therefore, we hypothesise a positive relationship between auditor reputation and financial disclosure quality (i.e. a negative relationship between auditor reputation and AFEs).

Jelic *et al.* (1998) argue that the larger the company, the more stable the company earnings and the more accurate earnings forecasts made by the managers. Thus, a negative relationship is expected between company size and the level of AFEs. However, Firth and Smith (1992) and Chan *et al.* (1996) find the reverse. Firth and Smith (1992) argue that larger companies raise more capital than their smaller counterparts, therefore their forecast is more difficult to make and less accurate. Thus, we expect that relationship between company size and forecast accuracy can operate in both directions.

Studies by Capstaff *et al.* (1995) and Jelic *et al.* (1998) show that earnings forecasts made by analysts and management are more inaccurate for companies that experience a reduction in earnings. Hence, we expect the accuracy of IPO earnings forecasts to be less reliable for companies that exhibit an earnings reduction prior to IPO, than for their counterparts that register an earnings increase.

Karamanou and Vafeas (2005) and Chin *et al.* (2006) argue that the earlier the forecast is made (the greater the number of days from the forecast date to the end of the financial reporting date) the less accurate it will be due to the greater uncertainty regarding actual earnings. Therefore, we include the forecast horizon variable to control for forecast accuracy.

Given that historical data are important inputs into the forecasting process, previous studies postulate that the longer a company has been in existence, the greater the forecasting accuracy, as it is extremely difficult to predict the earnings of companies with little or no prior operating history. Therefore, we predict that forecast accuracy improves the longer the company has been in existence.

4. Sample selection and data

Data on corporate board and audit committee characteristics were hand-collected from the offering prospectuses under the section “corporate information” and cross-checked with the “director, senior management and employee” section. Data for management earnings forecasts, auditor, company size, earnings reduction, forecast horizon, company age, and other company characteristics were also collected from the offering prospectuses. Data on the actual earnings were obtained from the first-published annual reports. Care was taken in collecting the data on earnings forecasts and actual earnings to ensure consistency. For example, data on earnings forecasts were collected first with its corresponding earnings forecast type (e.g. profit before tax, profit before tax and minority interest, or profit after tax). Then, the same type of earnings data were collected from the first published annual report. This avoids errors in the measurement of forecast accuracy and also in the interpretation of the results (Dev and Webb, 1972; Jelic *et al.*, 1998).

For the sample, companies listed on the Main and Second Boards of Bursa Malaysia during the period 1999-2006 were initially considered. The list of industry types was obtained from the Bursa Malaysia web site. In total, 253 companies were listed on both boards. As with Karamanou and Vafeas (2005), the sample excludes financial companies (consisting of four finance companies, seven real estate investment trusts and one closed-end funds companies) due to their different regulatory requirements governing their practices on disclosure. Following Ahmad-Zaluki *et al.* (2007), two companies listed via introduction and four infrastructure project companies were also excluded. The final sample consists of 235 IPOs (93 per cent of the total population) that made management earnings forecasts during the period 1999-2006. Of the 235 IPOs, eight companies are from the construction sector, 58 companies are from the consumer product sector, 98 companies are from the industrial products sector, 14 companies are from the properties sector, seven companies are from the plantation sector, three companies are from the technology sector and 47 companies are from the trading/services sector.

5. Results

5.1 Composition of companies

Table I presents a distribution of our sample by year of going public (1999-2006) and listing board (Main and Second Boards). Main Board companies consist of 38.3 per cent

IPO year	Main Board		Second Board		Total	%
	<i>n</i>	%	<i>n</i>	%		
1999	9	10.00	10	6.90	19	8.09
2000	12	13.33	26	17.93	38	16.17
2001	5	5.56	14	9.66	19	8.09
2002	21	23.33	22	15.17	43	18.30
2003	13	14.44	22	15.17	35	14.89
2004	15	16.67	26	17.93	41	17.45
2005	9	10.00	17	11.72	26	11.06
2006	6	6.67	8	5.52	14	5.96
Total number of sample (%)	90	100	145	100	235	100

Note: This table reports the distribution of 235 IPOs by year of going public (1999-2006) and board of listing (Main and Second Boards)

Table I.
Distribution of IPO
sample by year and
board of listings

of the sample while Second Board companies make up the balance of 61.7 per cent. The highest number of IPOs seeking a listing on the Main and the Second Board occurred in 2002 (43 companies) while the lowest occurred in 2006 (14 companies).

5.2 Descriptive statistics

Table II presents the descriptive statistics of our company attributes for the full sample of 235 IPO companies. The data are also separated into the Main Board (90 companies) and the Second Board (145 companies). Focusing first on the full sample, the results show that both the mean and median FE is negative, -3.50 per cent and -1.86 per cent, respectively. The mean FE is not statistically different from zero but the median value is statistically significant at 5 per cent level (p -value = 0.016). The results demonstrate that, on average, the management of IPO companies during the period 1999-2006 have made optimistically biased forecasts, indicated by the negative sign of FEs. As also reported in row 3 of Panel A, the percentage of IPO companies that made conservative forecasts is slightly lower than 50 per cent. The overestimation in forecast can be explained by the fact that the economic conditions of our sample period (1999-2006) included a recovery after the economic stress experienced in 1997 and 1998. Our results are in contrast to those of Mohamad *et al.* (1994) and Jelic *et al.* (1998) who found the mean FE of $+9.34$ per cent and $+33.37$ per cent, respectively. The highest negative FE (minimum) is reported at -270.47 per cent while the highest positive FE (maximum) is 451.29 per cent.

Owing to the fact that outliers exist in the data set, we truncate the data to remove them. As argued by Jelic *et al.* (1998), this procedure is common practice in the literature. We exclude 21 companies having extreme outliers (outside the range of ± 3 times the inter-quartile range beyond the upper and lower quartiles) that may distort the results on means FEs. After removing these outlier companies, the mean and median FEs are -3.49 and 0.16 per cent, respectively. The mean FE is now statistically significant from zero at 1 per cent level but median value remains significant at 5 per cent level. However, we do not find any significant differences in FEs between companies listed on the Main and the Second Boards.

The mean and median AFEs are 23.76 and 9.14 per cent, respectively. Both the mean and median AFEs are significantly different from zero. After removing the outlier companies, not reported in the table, the mean and median AFEs are also statistically significant from zero with values of 13.62 and 8.40 per cent, respectively. Interestingly, our results demonstrate that, on average, earning forecasts made by the management of Malaysian IPO companies are outside the range of ± 10 per cent limit imposed by regulators[4]. As reported in row 4 of Panel A, only 56.6 per cent of our sample IPO companies had met the Bursa Malaysia earning forecasts threshold. Nevertheless, the results of absolute forecasts errors found in our study are lower than the results of 54.91 per cent for mean and 12.1 per cent for median observed by Jelic *et al.* (1998). In addition, the mean AFE observed in our study is also lower than the results of 27.91 per cent observed by Mohamad *et al.* (1994). Our results indicate that IPOs in our sample period exhibit greater forecast accuracy than IPOs in earlier periods. Similar to the results observed for the FEs, we do not find any significant differences in AFEs between Main and Second Boards IPO companies.

The average percentage of NEDs on the board is 52 per cent, with Main Board companies showing a significantly higher average than the Second Board companies (55 vs 52 per cent).

Table II.
Descriptive statistics for
235 Malaysian IPOs
between 1999 and 2006

Attributes	Mean			<i>t</i> -stat. for diff.	Median			<i>z</i> -stat. for diff.	Minimum			Maximum		
	All (<i>n</i> = 235)	Main Board (<i>n</i> = 90)	Second Board (<i>n</i> = 145)		All (<i>n</i> = 235)	Main Board (<i>n</i> = 90)	Second Board (<i>n</i> = 145)		All (<i>n</i> = 235)	Main Board (<i>n</i> = 90)	Second Board (<i>n</i> = 145)	All (<i>n</i> = 235)	Main Board (<i>n</i> = 90)	Second Board (<i>n</i> = 145)
<i>Panel A: earnings forecast attributes</i>														
Forecast error (%)	-3.50	-3.51	-3.50	-0.002	-1.86	0.31	-2.33	0.789	-270.47	-162.36	-270.47	451.29	162.17	451.29
AFE (%)	23.76	19.45	26.44	-1.349	9.14	9.83	9.04	0.003	0.13	0.18	0.13	451.29	162.36	451.29
Conservative forecast (%)	49.36	52.22	47.52	0.689	na	na	na	na	na	na	na	na	na	na
Meeting 10 per cent accuracy threshold (%)	56.60	50.00	60.69	-1.600	na	na	na	na	na	na	na	na	na	na
<i>Panel B: boards attributes</i>														
NED (%)	51.92	54.59	50.29	1.975***	50.00	50.00	50.00	1.811*	20.00	22.00	20.00	89.00	89.00	89.00
INED (%)	34.71	34.97	34.56	0.342	33.00	33.00	33.00	0.152	15.00	18.00	15.00	75.00	75.00	67.00
Board size	7.61	7.47	7.70	-0.949	7.00	7.00	8.00	-1.156	4.00	4.00	4.00	16.00	14.00	16.00
<i>Panel C: audit committee attributes</i>														
Audit committee NED (%)	70.32	72.50	68.96	2.330**	66.67	66.67	66.67	1.539	50.00	50.00	60.00	100.00	100.00	100.00
Audit committee INED (%)	67.69	67.78	67.64	0.179	66.67	66.67	66.67	0.926	50.00	50.00	50.00	100.00	100.00	100.00
Audit committee size	3.09	3.06	3.10	-1.289	3.00	3.00	3.00	0.975	3.00	3.00	3.00	5.00	4.00	5.00
Professional memberships (%)	71.45	78.89	76.55	0.415	na	na	na	na	na	na	na	na	na	na

(continued)

Attributes	Mean			Median			z-stat. for diff.			Minimum			Maximum		
	All (n = 235)	Main Board (n = 90)	Second Board (n = 145)	All (n = 235)	Main Board (n = 90)	Second Board (n = 145)	All (n = 235)	Main Board (n = 90)	Second Board (n = 145)	All (n = 235)	Main Board (n = 90)	Second Board (n = 145)	All (n = 235)	Main Board (n = 90)	Second Board (n = 145)
<i>Panel D: company attributes</i>															
Company age (years)	5.57	8.07	4.03	3.966***	2.67	3.84	2.41	2.664***	0.21	0.21	0.51	39.82	39.82	39.82	24.86
Forecast horizon (months)	8.07	8.30	7.93	0.843	7.40	7.80	7.30	0.760	2.97	3.07	2.97	14.93	14.93	14.93	14.90
Leverage (%)	19.46	20.24	18.97	0.581	18.00	18.00	19.00	-0.006	0.00	0.00	0.00	82.00	82.00	82.00	60.00
Retained ownership (%)	74.58	73.78	75.07	-0.859	75.12	75.00	75.83	-0.820	30.91	41.00	30.91	97.54	97.54	96.89	97.54
Total assets (RM million)	270.72	537.81	104.95	3.957***	120.27	213.88	91.43	10.699***	44.68	79.26	44.68	6,445.75	6,445.75	6,445.75	400.66
Turnover (RM million)	142.85	253.65	74.08	4.301***	79.25	151.10	56.39	8.210***	18.26	28.54	18.26	2,798.10	2,798.10	2,798.10	312.79
Auditor - BIG4/5 (%)	60.00	73.33	51.72	3.446***	na	na	na	na	na	na	na	na	na	na	na
Underwriter (%)	53.62	61.11	48.97	1.830*	na	na	na	na	na	na	na	na	na	na	na
Earnings reductions (%)	23.40	30.00	19.31	1.822*	na	na	na	na	na	na	na	na	na	na	na

Notes: This table shows the descriptive statistics for 235 IPOs that went public during the period 1999-2006. Data for the proportion of independent and non-independent non-executive directors are for 232 companies due to unavailable details on corporate directorships for three companies. FP is the difference between actual earnings and the management forecasts deflated by absolute value of management forecasts. "NED" refers to the percentage of non-executive directors out of total directors. Board size is total number of directors on the board. Audit committee NED is computed as the percentage of non-executive directors in audit committee out of the total directors in audit committees. Audit committee size is total number of directors in audit committee. Professional membership is a dummy variable equal to 1 if at least one member of the company's audit committee possesses professional accounting qualification and 0 otherwise. Company age is defined as the number of years between incorporation and the IPO date. Forecast horizon is the number of months from the management forecast date to end of the period for which the forecast is made. Leverage is the level of borrowings divided by total assets at the date of the publication of the prospectus. Retained ownership, α , is calculated as in Downes and Heinkel (1982); $\alpha = (N - N_p - N_a)/N$, where α is the proportionate ownership retained by the insiders (original owners); N is the total number of shares outstanding after the initial offer; N_p is the number of primary shares in the initial offer (public issue); and N_a is the number of secondary shares offered by the insiders for resale (offer for sale). Total assets are at the date of prospectus. Turnover is the average turnover for a period of three years prior to IPO. Auditor - BIG4/5 is a dummy variable equal to 1 for IPO companies audited by one of the Big 4/5 auditors, and 0 otherwise. Underwriter is a dummy variable equal to 1 for IPO companies which used a prestigious underwriter for the IPO, as defined in Jelic *et al.* (2001), and 0 otherwise. Earnings reductions is a dummy variable equal to 1 for IPO companies that experience a reduction in earnings a year prior to the IPO, and 0 otherwise. Results significantly different from zero at the *0.10, **0.05 and ***0.001 levels, respectively, using two-tailed tests. The differences between the mean and median of the Main Board (n = 90) and the Second Board (n = 145) are based on the independent t-test and the Mann-Whitney U-test, respectively

Table II.

Out of 52 per cent of NEDs, 35 per cent of them are independent directors. Some IPO companies in the sample have less than one third independent directors in their boards. For the full sample, board size ranges from 4 to 16 with a mean of eight directors. As for the audit committee composition, the size ranges from three to five, with a mean and median of three. All the audit committees in our sample have majority NEDs. The mean and median proportion of independent NEDs in audit committees is about two-thirds. On average, 71 per cent of the sample companies have at least one member of their audit committees possessing professional memberships either in local or international accounting bodies.

As expected, Main Board companies are more established than their counterparts in the Second Board. This is reflected in the mean and median differences in firm age measured from incorporation to prospectus date, which are significantly higher for Main than Second Boards companies. For the full sample, the forecast horizon (i.e. the number of months between the prospectus date and the end of forecast period) ranges from three to 15 months, with a mean of eight months. The pre-IPO shareholders in the sample, on average, retained 75 per cent of their holdings. On average, IPO companies in the Main Board are five and four times larger than IPO companies in the Second Board in terms of total assets and turnover, respectively.

As for the choice of IPO advisers, Main Board companies are more likely to engage BIG4/5 firms of accountants and prestigious underwriters than are Second Board companies. Finally, almost one-fifth of the companies in the sample reported an earnings decline prior to IPO. The incidence of earnings decline is more prevalent among Main Board IPOs than Second Board IPOs (30 vs 19 per cent).

In order to clearly identify the number of companies in each FE category, we report the distribution of FEs in 10 per cent bands in Table III. It shows that out of 235 IPO companies, 133 sample companies (56.6 per cent) meet the regulatory limit within the ± 10 per cent range required by IPO regulators in Malaysia[4]. On the other hand, 43.4 per cent of the companies in our sample had FEs outside the 10 per cent tolerance level. This percentage is 10 per cent lower than what was observed by Jelic *et al.* (1998) in their study on earnings forecast accuracy on Malaysian Main Board IPOs during the period 1984-1995.

5.3 Analysis of association of corporate governance attributes and earnings forecast accuracy in IPOs

We perform multivariate analysis to consider factors that may influence the financial disclosure quality (i.e. the forecasts accuracy). In particular, we regress the level of AFEs with board and audit committee variables, and several additional control variables identified in Section 3. The number of samples in the regression is less than 235 after removing extreme outliers (21 companies) and companies without detailed information on corporate directorships (three companies).

Our bivariate correlation analysis reported in Table IV shows moderate correlations between board size (BDSIZE) and number of INED, and between audit committee size (ACSIZE) and number of audit committee NEDS (ACNED), with correlations of -0.350 and 0.353 , respectively. However, none of the other independent variables has high correlations, which suggests multicollinearity is not likely to be an issue in our regression models.

Table V presents results of White's (1980) adjusted OLS regressions addressing the link between IPO earnings forecast accuracy and corporate governance characteristics.

Table III.
Distribution of FEs

Forecast error (%)	Number of companies
> 100	4
90 to 100	1
80 to 90	0
70 to 80	2
60 to 70	1
50 to 60	1
40 to 50	0
30 to 40	6
20 to 30	11
10 to 20	16
0 to 10	74
- 1 to - 10	59
- 11 to - 20	12
- 20 to - 30	10
- 30 to - 40	11
- 40 to - 50	12
- 50 to - 60	1
- 60 to - 70	3
- 70 to - 80	3
- 80 to - 90	4
- 90 to - 100	1
< - 100	3
Total number of sample	235

To investigate the existence of multicollinearity in the estimation of the relation between corporate governance and management earnings forecasts, the variance inflation factors (VIFs) for each of the independent variables are computed. Consistent with the previous correlation matrix, VIFs for the governance variables as reported in column 2 of Table V are always below 2.0, suggesting that multicollinearity is not likely to be a major factor driving our results.

We report four regression model results in Table V. The results of the first regression model (Model 1), which consider all boards and audit committees, and other control variables are reported in columns 4 and 5. We find that the AFE significantly declines (at 5 per cent level) with a higher percentage of NEDs in audit committee. Our results suggest that the higher the percentage of NEDs in the audit committee, the more accurate are the earnings forecasts in the IPO prospectuses. We also find that the AFE has a negative relationship with size of audit committees, suggesting that audit committees with more members make more accurate forecasts. Our results are consistent with those of Karamanou and Vafeas (2005) that suggest good corporate governance is associated with greater financial disclosure quality. Results on control variables suggest that management forecasts are more accurate only after controlling for company size. We find that the larger the IPO company, the greater the FEs and the lower the financial disclosure quality. Our results are consistent with Firth and Smith (1992), suggesting that larger companies raise more capital than their smaller counterparts making it more difficult to forecast future earnings accurately.

To gain further insight on which characteristics (either of boards or audit committees) have greater influence on earnings forecasts accuracy, we perform

Table IV.
Correlation matrix for
variables in the
determinants of earnings
forecasts accuracy
regressions

	AFE	INED	BDSIZE	ACNED	ACSIZE	PFMSHIP	AUDITOR	COSIZE	EARNRED	FHORIZON
INED	0.060									
BDSIZE	0.019	-0.350 **								
ACNED	0.015	0.139 *	0.204 **							
ACSIZE	-0.010	0.172 *	0.103	0.353 **						
PFMSHIP	-0.029	0.062	0.056	0.082	0.161 *					
AUDITOR	-0.059	-0.104	-0.009	0.069	0.017	0.001				
COSIZE	0.078	-0.042	0.028	0.178 *	0.034	0.052	0.162 *			
EARNRED	-0.066	-0.025	0.002	-0.033	0.034	-0.009	0.073	0.086		
FHORIZON	0.056	0.009	-0.093	0.006	-0.039	-0.144	-0.030	0.067	-0.053	
AGE	-0.027	-0.114	0.088	-0.092	0.063	-0.030	0.056	0.101	0.116	0.011

Notes: This table shows the bivariate Pearson correlation between dependent and independent variables. The number of sample is less than 235 after removing extreme outliers (21 companies) and three companies whose details on corporate directorships were unavailable. AFE is the level of absolute forecast errors, measured by the absolute difference between actual earnings and the forecasts deflated by absolute earnings forecasts, INED is percentage of independent non-executive directors out of total directors, BDSIZE is total number of directors on the board, ACNED is percentage of non-executive directors out of total audit committee members, ACSIZE is the number of audit committee members, PFMSHIP is a dummy variable equal to 1 if at least one member of the company's audit committees possesses professional accounting qualification and 0 otherwise, AUDITOR is a dummy variable equal to 1 for IPO companies audited by one of the BIG4/5 auditors, and 0 otherwise, COSIZE is company size measured by ln total assets at the date of prospectus, EARNRED is dummy variable equal to 1 if company had experienced a reduction in earnings a year prior to the IPO and 0 otherwise, FHORIZON is forecast horizon, measured by the number of months from the management forecast date to end of the period for which the forecast is made, and AGE is company age, measured by ln (1 + number of years between incorporation and the IPO date). Results significantly different from zero at the *0.05 and **0.01 levels, respectively, using two-tailed tests

	VIF	Expected sign	Model 1 All boards and audit committees characteristics		Model 2 Only boards characteristics		Model 3 Only audit committees characteristics		Model 4 Selected variables	
			Coefficient	<i>t</i> -stat.	Coefficient	<i>t</i> -stat.	Coefficient	<i>t</i> -stat.	Coefficient	<i>t</i> -stat.
INED	1.28	-	13.263	1.17	6.861	0.63				
BDSIZE	1.29	-	0.576	1.01	0.266	0.53				
ACNED	1.33	-	-0.174	-2.16**						
ACSIZE	1.08	-	-3.490	-1.73*						
PFMSHIP	1.05	-	0.136	0.06						
AUDITOR	1.08	-	-3.110	-1.55	-3.499	-1.74*	-3.502	-1.76*	-3.788	-1.91*
COSIZE	1.28	?	3.287	3.03***	2.469	2.43**	3.285	3.01***	3.326	2.97***
EARNRED	1.02	+	-2.723	-1.40	-2.771	-1.46	-2.760	-1.43		
FHORIZON	1.06	+	0.334	1.17	0.339	1.22	0.290	1.03		
AGE	1.05	-	-0.695	-0.63	-0.550	-0.51	-0.637	-0.59		
Constant			-10.570	-0.74	-19.195	-1.41	-5.819	-0.43	-4.645	-0.35
<i>n</i>			211		211		211		211	
<i>F</i> -value			1.95**		1.89*		2.17**		3.00**	
<i>R</i> ² (%)			7.62		5.71		6.85		5.64	
Adj. <i>R</i> ² (%)			3.00		2.46		3.16		3.50	

Notes: This table reports the results of OLS regressions for all board and audit committee characteristics (Model 1), only board characteristics (Model 2), only audit committee characteristics (Model 3) and the selected variables (Model 4). The number of samples in the regression is less than 235 after removing extreme outliers (21 companies) and three companies without details on corporate directorships. The *t*-statistics reported in the table were adjusted for heteroscedasticity (White's correction). The dependent variable is the level of AFEs, measured by the absolute difference between actual earnings and the forecasts deflated by absolute earnings forecasts, INED is percentage of independent non-executive directors out of total directors, BDSIZE is total number of directors on the board, ACNED is percentage of non-executive directors out of total audit committee members, ACSIZE is the number of audit committee members, PFMSHIP is a dummy variable equal to 1 if at least one member of the company's audit committee possesses professional accounting qualification and 0 otherwise, AUDITOR is a dummy variable equal to 1 for IPO companies audited by one of the BIG4/5 auditors, and 0 otherwise, COSIZE is company size measured by ln total assets, at the date of prospectus, EARNRED is dummy variable equal to 1 if company had experienced a reduction in earnings a year prior to the IPO and 0 otherwise, FHORIZON is forecast horizon, measured by the number of months from the management forecast date to end of the period for which the forecast is made, and AGE is company age, measured by ln(1 + number of years between incorporation and the IPO date). Results significantly different from zero at the *0.10, **0.05 and ***0.01 levels, respectively, using two-tailed tests

Table V.
Determinants of earnings
forecast accuracy

additional regressions. Our second model (Model 2) only includes board characteristics and control variables, while our third model (Model 3) only includes audit committee characteristics and control variables. Focusing first on the results of Model 2, our results confirm that none of our board characteristics has a significant influence on the accuracy of earnings forecasts in IPO companies. Interestingly, BIG4/5 auditor has a significant negative relationship (at 10 per cent level) with AFEs. Our results suggest that higher quality auditors do play a role in increasing the accuracy of earnings forecasts. Company size continues to be influential but the level of significance has reduced to 5 per cent.

Similar to the results observed in Model 1, when we include only audit committee characteristics and other control variables in our Model 3, we find that only the audit committee non-executive director variable (ACNED) has a significant negative relationship (at 10 per cent level) with AFEs. Audit committee size is no longer a major determinant of earnings forecasts accuracy but still in the expected sign (i.e. negative). Similar to the results of Model 2, auditor reputation has a significant influence on earnings forecasts accuracy. Company size continues to be significant at the 1 per cent level. Other control variables in our model do not show any significant association with earnings forecasts accuracy.

Owing to the fact that board characteristics and the rest of control variables are not the main factors influencing the accuracy of earnings forecasts in our Models 1-3, we then perform additional regression by excluding them in our Model 4. The results are reported in the last two columns of Table V. We find that all of the variables identified in Model 4 with the exception of audit committee size variable are found to influence the earnings forecasts accuracy.

As a whole, our results suggest that smaller companies with properly structured audit committees and more reputable auditors have lower FEs, which indicate greater financial disclosure quality.

6. Conclusion

This paper examines the association between the board of directors, the audit committee and the accuracy of management earnings forecasts. We find that effective audit committees with a larger membership and a higher proportion of NEDs are related to greater forecast accuracy. This finding is similar to the work undertaken by Karamanou and Vafeas (2005), suggesting that effective governance is associated with high-quality information flowing from management to investors. However, no evidence is found linking audit committee financial expertise and independence of the full board with the accuracy of management earnings forecasts in IPOs.

In sum, the results of this paper demonstrate the vital responsibility of audit committees and external auditors in improving financial disclosure practices. These results are also consistent with decisions made by Malaysian regulators such as the SC to enhance the quality of financial disclosure by revising the Malaysian Code on Corporate Governance to encourage public companies to implement good governance practices.

Owing to the fact that professional membership of the audit committee does not play a significant role in monitoring the quality of the information contained in the IPO prospectus, we suggest that future research should investigate further the specific characteristics of the audit committee in terms of their academic qualifications and working experience in accounting or other related fields. These characteristics might

provide further insight into factors affecting the quality of financial disclosure and could have direct implications for further improvement in corporate governance.

It would also be interesting to investigate what explanations have been provided in their first published annual reports by the management of Malaysian IPO companies when the earnings forecasts made in their IPO prospectuses have deviated outside the ± 10 per cent limit imposed in Para. 9.19 (33) of the Bursa Malaysia Listing Requirements.

Notes

1. Forecast error and forecast accuracy will be used interchangeably throughout this paper. A lower forecast error indicates greater accuracy.
2. There are two companies with negative forecast earnings in our sample. We use the absolute value of forecast earnings as the denominator to avoid miscalculation of forecasts errors due to negative value of the denominator.
3. In Malaysia, it is common for a new unlisted public company to be established prior to IPO, whereby the new unlisted public company acquired several private companies in order to meet the minimum listing requirements. In our study, the incorporation date used is based on the date when the new unlisted public company is incorporated.
4. Para. 9.19 (33) of the Bursa Malaysia Listing Requirement stipulates that in the case of any deviation of 10 per cent or more between (1) the profit after tax and minority interest stated in a profit estimate, forecast or projection previously announced or disclosed in a public document and (2) the announced unaudited accounts, an explanation of the deviation and reconciliation thereof should be disclosed in the annual reports. However, in this study, we compare forecast earnings with audited earnings, not the unaudited earnings in the preliminary announcement.

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Further reading

Best Practices in Corporate Disclosure (2004), available at: www.sc.com.my/eng/html/cg/Legal.html

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