# AUDIT COMMITTEES AND ACCURACY OF MANAGEMENT EARNINGS FORECASTS OF MALAYSIAN IPOs

## MOHAMMED ABDULLAH EZZI AMMER

DOCTOR OF PHILOSOPHY UNIVERSITI UTARA MALAYSIA February 2015

### AUDIT COMMITTEES AND ACCURACY OF MANAGEMENT EARNINGS FORECASTS OF MALAYSIAN IPOs

By

## MOHAMMED ABDULLAH EZZI AMMER

Thesis Submitted to Othman Yeop Abdullah Graduate School of Business, Universiti Utara Malaysia, in Fulfillment of the Requirement for the Degree of Doctor of Philosophy

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### ABSTRACT

This study aims to make a meaningful contribution to the IPO literature by examining the impact of audit committee characteristics on the accuracy of earnings forecasts in 190 Malaysian IPO prospectuses during the period of 2002-2012. This study also adds to the body of knowledge by investigating the accuracy of IPO earnings forecasts during the former mandatory earnings forecasts (January 2002 to January 2008) and the current voluntary earnings forecasts (February 2008 to February 2012). Furthermore, it explores the provided explanations in the first published annual reports after IPO, which explain the reasons behind the errors of earnings forecasts. Two proxies were used for accuracy; absolute forecast error and squared forecast error. The models were developed using the frameworks of the agency theory, the signaling theory, and the resource-dependence theory to examine the association of eight characteristics of the audit committee (size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background, and experience) with the accuracy of IPO earnings forecasts. The findings indicate that the earnings forecasts of Malaysian IPO are pessimistic and the percentage of accuracy is unsatisfactory. Further, the results show that Malaysian IPO earnings forecasts have been more pessimistic and less accurate under the voluntary regulation regime than the mandatory regime. The findings of multiple regressions of the audit committee and absolute forecast error show significant relationships with positive impacts among size, experience and accuracy of earnings forecasts. In terms of the findings of multiple regressions of the audit committee and the squared forecast error, the results show significant relationships with positive impacts between size and earnings forecasts accuracy. Finally, the results indicate that the number of provided explanations was greater when the management were more optimistic and the forecasts errors were large. The results of this study can be of interest to investors, policymakers, investment analysts and other market participants.

**Keywords:** audit committee, earnings forecasts accuracy, earnings forecasts regulation, explanations of earnings forecasts errors, Malaysian IPO.

### ABSTRAK

Tujuan kajian ini dilakukan adalah memberi sumbangan kepada literatur IPO dengan mengkaji kesan ciri-ciri jawatankuasa audit ke atas ketepatan ramalan pendapatan 190 prospektus IPO di Malaysia bagi tempoh 2002-2012. Kajian ini juga menyumbang kepada pengetahuan dengan mengkaji ketepatan ramalan pendapatan IPO semasa tempoh ramalan pendapatan mandatori (Januari 2002 hingga Januari 2008) dan ramalan pendapatan secara sukarela (Februari 2008 hingga Februari 2012). Tambahan pula, ia meneliti penjelasan yang diberikan dalam laporan tahunan pertama yang diterbitkan selepas IPO yang menjelaskan sebab-sebab di sebalik kesilapan ramalan pendapatan. Dua orang proksi telah digunakan untuk ketepatan; kesilapan ramalan mutlak dan kesilapan ramalan berkuasa dua. Model-model telah dibangunkan dengan menggunakan rangka kerja teori agensi, teori isyarat dan teori sumber pergantungan untuk mengkaji hubungan lapan ciri jawatankuasa audit (saiz, kebebasan, kepakaran kewangan, kepelbagaian jantina, etnik, pemilikan saham, latar belakang pendidikan dan pengalaman) dengan ketepatan ramalan pendapatan IPO. Dapatan kajian menunjukkan bahawa ramalan pendapatan IPO Malaysia adalah pesimis dan peratus ketepatannya adalah tidak memuaskan. Selanjutnya, hasil kajian menunjukkan bahawa ramalan pendapatan IPO Malaysia adalah lebih pesimis dan kurang tepat di bawah rejim peraturan secara sukarela berbanding rejim secara mandatori. Hasil regresi berganda ke atas jawatankuasa audit dan kesilapan ramalan mutlak menunjukkan hubungan yang signifikan dengan kesan positif antara saiz, pengalaman, dan ketepatan ramalan pendapatan. Manakala dari segi hasil regresi berganda ke atas jawatankuasa audit dan kesilapan ramalan berkuasa dua, keputusan menunjukkan hubungan yang signifikan dengan kesan positif antara saiz dan ketepatan ramalan pendapatan. Akhir sekali, keputusan menunjukkan bahawa bilangan penjelasan yang diberikan adalah lebih banyak apabila pihak pengurusan lebih optimis dan ramalan kesilapan adalah besar. Keputusan kajian ini boleh menarik minat pelabur, penggubal dasar, penganalisis pelaburan dan ahli-ahli pasaran lain.

**Kata kunci:** jawatankuasa audit, ketepatan ramalan pendapatan, peraturan ramalan pendapatan, penjelasan mengenai kesilapan ramalan pendapatan, IPO Malaysia.

### ACKNOWLEDGEMENTS

#### In the name of Allah, the Most Gracious and Most Merciful

Praise and thanks to Allah, first and last, Lord and Cherisher of the world who taught humankind everything they knew not. May his blessing and His Mercy be upon the holy prophet Muhammad S.A.W the Overseer of the creation of God and sent as a mercy to the world.

After praising Allah for the strength and endurance provided to me to complete this thesis, my utmost gratitude to my father Abdullah Ezzi Ammer and my mother Fatimah Al-Nakhli who bless me all the time and work for my best since I was born and have been great and wise teachers in my life, and for their infinite patience, especially during my absence.

I would also like to express my deepest appreciation and gratitude to my supervisor, Assoc. Prof. Dr Nurwati Ashikkin Ahmad Zaluki, for her professional academic guidance, knowledge sharing and advice in writing my thesis step by step. Without her constant supervision to my progress, consideration and untiring advice, this thesis would not have become a reality. I would like to render my thanks to my proposal defense committee members, Assoc. Prof. Dr. Kamarun Nisham Taufil Mohd and Assoc. Prof. Dr. Hasnah Kamardin, for their valuable comments and suggestions.

I would like to extend my gratitude to my beloved wife, Amani Al-Moft, and our two dear children, Ghaida and Abdullah for their encouragement, countless sacrifices and everlasting love in order for me to get my PhD. They have been very patient during my PhD journey. Thanks are also due to my loving brothers, Abdu, Nouman, Nabeel, Ismail and Ibrahim, and my loving sisters, Balqees, Ibtesam and Hind for their support in a variety of ways.

I would also like to express my grateful appreciation to my UUM lecturers who have imparted valuable knowledge during the time of my master's program at UUM. To all academic and administrative staff at OYA Graduate School of Business and School of Economics, Finance and Banking (SEFB), my sincere gratitude goes to you. I would like also to extend my thanks to my friends for their invaluable help and support in completing this thesis.

My heartfelt appreciation to all those involved in making this thesis a reality and those who have contributed towards this profound learning experience.

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## LIST OF ABBREVIATIONS

Abb.	Full List
ACE	Access, Certainty, Efficiency
BMLR	Bursa Malaysia Listing Requirement
BRC	Blue Ribbon Committee
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CMSA	Capital Markets and Services Act
CPA	Certified Public Accountant
FCCG	Finance Committee on Corporate Governance
IPO	Initial Public Offering
KLSEB	Kuala Lumpur Stock Exchange Berhad
MBA	Master of Business Administration
MCCG	Malaysian Code on Corporate Governance
MESDAQ	Malaysian Exchange of Securities Dealing and Automated Quotation
MIA	Malaysian Institute of Accountants
MICG	Malaysian Institute of Corporate Governance
NDP	National Development Policy
NEP	New Economic Policy
OLS	Ordinary Least Squares
PAT	Profit After Tax
RESET	Ramsey Regression Equation Specification Error Test
RM	Ringgit Malaysia
SC	Securities Commission
SEC	Securities Exchange Commission
SES	Stock Exchange of Singapore
SIA	Securities Industry Act
SOX	Sarbanes–Oxley Act
SPAC	Special Purpose Acquisition Companies
UK	United Kingdom
US	United States

### **CHAPTER ONE**

### **INTRODUCTION**

### 1.1 Background of the Study

The magnitude of information that can be explained in the IPO prospectus is enormous. However, one aspect of this information has attracted particular research interest. This is the management earnings forecasts figure and its quality as indicated by its accuracy (Hutton & Stocken, 2010). Issuing IPO earnings forecasts is considered as management promise to shareholders that the IPO company will give a specific future income by the end of IPO year (Hutagaol, Warganegara, & Wibisono, 2012). The accuracy of IPO earnings forecasts has received attention from researchers in several countries due to its importance for the investors' decisions (e.g., Henry, Ahmed, & Riddell, 2002; Hussin, Sulong, & Osman, 2004); IPO company valuation (e.g., Jelic, Saadouni, & Briston, 1998; Chen & Firth, 1999; Keasey & McGuinness, 2008; Jelic, 2011); and security prices (e.g., Gounopoulos, 2011). The present study investigates the issue related to the level of accuracy of management earnings forecasts included in the prospectuses of Malaysian IPOs.

The participants of capital markets depend on a stable stream of information in order to evaluate the risk and judge future prospects to perfectly assess the equity of a company (Foerster, Sapp, & Shi, 2013). However, there is a dire lack of financial information publicly available for an IPO company compared to a listed company. Thus, IPO companies face great information asymmetry between the current shareholders and expected investors (Guo, Lev, & Zhou, 2004; Chong & Ho, 2007; Bédard, Couloumbe, & Courteau, 2008). On the one hand, shareholders have private information regarding the expected future cash flows of their company. On the other hand, potential investors who want to share the company's ownership have hardly any access to or no information at all about the company (Cazavan-Jeny & Jeanjean, 2007). Disclosing accurate earnings forecasts can mitigate these information asymmetries and illustrate the financial position of IPO companies to the potential investors (Gounopoulos, 2011) and level the playground between informed and uninformed investors as well (Chiyachantana & Hong, 2012). Beyer, Cohen, and Walther (2010) indicated that the forecasts of management present more information for investors than any other source.

Besides that, Hughes (1986) and Cazavan-Jeny and Jeanjean (2007) suggested that by communicating privately to investors via direct disclosure of information regarding the company's value using the prospectus, a company can overcome the problems of information asymmetry. Nevertheless, Healy and Palepu (2001) indicated that the level to which disclosure can actually lessen the problems of information asymmetry is based on the level of accuracy of the issued information. This is because companies have incentives to undertake self-serving disclosures. Therefore, it becomes necessary for IPO companies to make their earnings forecasts as accurate as possible. In Malaysia, the specific requirements regarding disclosing earnings forecasts are stated in Para. 9.32 (1) of the Bursa Malaysia Listing Requirement (BMLR). BMLR specifies that in the case of releasing earnings forecasts, it has to be made cautiously, with suitable norms and qualifications, with a reasonable truthful foundation and be stated accurately, to guarantee that it is appropriately understood, and the standards of

accounting and calculations of the earnings forecasts have to be reviewed by the external auditors (Bursa Malaysia Berhad, 2014).

The majority of investors lack adequate information to assess the value of a company's reporting system. Hence, they resort to looking at the quality of factors, like the structure of corporate governance, that contribute towards raising the credibility of the earnings reporting systems (Siagian & Tresnaningsih, 2011). There are studies that suggest that the well-structured mechanisms of corporate governance (i.e., board of directors and audit committee) can be employed to be a credible signal of the related quality of financial information, such as earnings forecasts (e.g., Karamanou & Vafeas, 2005; Ajinkya, Bhojraj, & Sengupta, 2005; Kelton & Yang, 2008; Mnif, 2010; Ahmad-Zaluki & Wan-Hussin, 2010).

Little evidence is available, and several issues still unanswered, concerning the impact of mechanisms of corporate governance (i.e., audit committee) on the accuracy of IPO management earnings forecasts (Cormier, Lapointe-Antunes, & McConomy, 2014). As a result, to fill this gap in the literature, this current study extends previous research on IPO earnings forecasts accuracy by considering audit committee characteristics (size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background and experience) in relation to the accuracy of IPO management earnings forecasts (proxied by absolute forecast error and squared forecast error). Further, this study adds to the prior research by addressing the issue of regulations of management earnings forecasts disclosure as well as the issue of forecasts errors explanations.

### **1.2 Importance of Audit Committee in Enhancing the Accuracy of IPO** Management Earnings Forecasts

Essentially, this study focuses on the audit committee as one imperative part of corporate governance identified in the Malaysian Code on Corporate Governance (MCCG). This is because under the MCCG, audit committee is accountable to review the disclosed and reported financial information, as well as to discuss with the company's auditor any issue related to the audit<sup>1</sup>. Furthermore, the audit committee also has clear authority to have full access to information (Saleh, Iskandar, & Rahmat, 2007). Ahmad-Zaluki and Wan-Hussin (2010) emphasized the essential task of audit committees in improving the practices of IPO management earnings forecasts. In addition, Ajinkya *et al.* (2005) illustrated that one of the major roles and duties of an audit committee of a company has to do with discussing and reviewing any predicted public release of earnings with the management.

IPO companies are mandated to follow closely the Securities Commission (SC) material information that is disclosed to the public, comprising management forecasts. Management forecasts are considered an imperative method of voluntary disclosure on earnings information (Liu & Zhuang, 2011). Nevertheless, management have more discretion concerning the voluntary disclosure pertaining to the form, timing, and the content of the disclosure. This address the question about the role that internal corporate governance mechanisms, primarily audit committees, undertake in preserving the reliability of voluntary disclosure to users of financial information (Liu & Zhuang, 2011). Over the last decade, the role of audit committees has developed to

<sup>&</sup>lt;sup>1</sup> When the Malaysian IPO company provides earnings forecasts in the prospectus, it is a requirement for it to attach the opinions thereon of the auditors and the lead underwriter about these forecasts in their prospectus.

comprise the responsibility of overseeing the voluntary disclosures, including management forecasts (Liu, Tiras, & Zhuang, 2014). This proposes that the audit committee would be expected to confine the management's forecasts through restricting managers' misuse of disclosures.

In the same vein, management of IPOs has the ability to get a greater set of information concerning the future cash flow of the company. Karim, Ahmed, and Hasan (2013) indicated that in the absence of moral hazard, IPO management are supposed to employ the advantage of accessing to information in order to disclose what they perceive as the most expected situation of future IPO earnings. In this case, IPO management earnings forecasts will be considered as efficient forecasting. In contrast, IPO management could utilize this advantage to increase their own self-interest in an opportunistic manner and thus misguiding the investors. In this situation, IPO management earnings forecasts will be opportunistic forecasting. However, when management earnings forecasts is constrained by monitoring systems, earnings forecasts are more reliable and of higher quality. Specifically, audit committees as internal tools of corporate governance, are suggested to carry out an effective monitoring role on the management, aligning the interests of managers and shareholders, and reducing managers' opportunistic behavior (Chung, Ho, & Kim, 2004), therefore enhancing the quality of disclosed IPO earnings forecasts.

Furthermore, the world, lately, has witnessed several corporate or earnings management scandals, like WorldCom and Enron. These scandals have resulted in the audit committees being scrutinized to guarantee the quality of corporate financial reporting (Lin, Li, & Yang, 2006). After the occurrence of these financial scandals,

the question of the responsibility of an audit committee in protecting the shareholders' interests and monitoring opportunistic managerial behavior, has been raised (Ebrahim, 2007). Thus, corporate regulators have started seeking mechanisms, which can help to achieve reliable, high-quality financial reporting; hence a return to reliance on corporate governance (Kang, Kilgore, & Wright, 2011). Therefore, regulators and investors have started to pay more attention to the responsibilities of the audit committee as an important mechanism of corporate governance in maintaining and reinforcing the trust of outside investors in the financial reporting credibility, as well as in restoring the confidence in the capital market (Bédard & Gendron, 2010; Kang *et al.*, 2011; MacGregor, 2012).

Moreover, to effectively carry out their tasks, the board of directors normally empowers a company's financial disclosure monitoring to the audit committee (Liu & Zhuang, 2011). Hence, an audit committee is shown as supporting the board's ability to oversee the process of financial reporting undertaken by management (Lin & Hwang, 2010). Further, the audit committee is directly associated with the providing and disclosing of information that can be employed by shareholders of the company as signals of the value of their company as well as the quality of the information it provides (Bédard *et al.*, 2008).

Finally, audit committees undertake a crucial responsibility in restricting earnings management and increasing earnings quality (Sun, Liu, & Lan, 2011). Further, an audit committee provides understanding and awareness of a company's financial statements as well as other more detailed published financial disclosures (Lin & Hwang, 2010). McMullen (1996) indicated that the presence of the audit committees

is related to additional credibility of financial reporting, specifically fewer errors, less irregularities and less illegal acts. Basically, the argument here is that the failure to issue accurate and valuable information may expose the directors with litigation risk.

As a result, studies, such as Kang, Leung, Morris, and Gray (2013) called for future research to examine issues concerning the quality of the boards' sub-committees, like the audit committee in enhancing the financial reporting quality. In the same vein, Gao and Huang (2014) showed that recognizing the association between the characteristics of audit committees and the quality of company earnings is an imperative issue.

### **1.3 Issues Associated with the Regulations of Management Earnings Forecasts** Disclosure and Forecasts Errors Explanations

Management earnings forecasts disclosure can be voluntary or mandatory, based on the regulations governing the country in which the company intends to go public. For example, in the United States (US), an IPO prospectus does not often disclose forecasting information since the Securities Exchange Commission (SEC) does not mandate it. In addition, this is also to protect the IPO companies from legal action, which can be faced if they have failed to achieve their forecasts (Clarkson, Dontoh, Richardson, & Sefcik, 1992; Jaggi, 1997).

The inclusion of management earnings forecasts disclosures in the prospectuses of Malaysian IPOs was mandatory until February 2008, when the Malaysian SC liberalized the earnings forecasts to be disclosed on a voluntary basis. This switch from a mandatory disclosure regime to a voluntary disclosure regime was a result of the uncertainties about underlying assumptions in living up to financial forecasts. In addition, this is to align with the international practices since the majority of countries require forecasts to be published only on a voluntary basis.

Earnings forecasts disclosure is based on the assumption that the market is imperfect; so the regulation of disclosure is needed to level the field for the good of the public (Pedwell, Warsame, & Neu, 1994). Under the mandatory disclosure, the potential investors can expose low quality IPOs and differentiate them from capable companies. This is because low quality IPO companies have neither the ability nor the incentive to issue accurate earnings forecasts (Gounopoulos & Skinner, 2010). On the contrary, these IPOs can hide their low quality under the voluntary regime. Furthermore, mandatory disclosure encourages some high-quality IPO companies that are still reluctant to disclose their earnings forecasts under the voluntary regime. For the environment of voluntary earnings forecasts, every IPO company should think carefully whether to incorporate earnings forecasts disclosure in their prospectuses. This is due to the fact that if the company decides to disclose forecasts, the first main concern is the spending of a large amount of money so as to ensure that it will issue an accurate and conservative figure (Gounopoulos & Skinner, 2010). On the other hand, if the IPO company decides not to disclose earnings forecasts, this will be considered as a signal by the management to the market that their company is of a low quality (Pedwell et al., 1994). Heflin, Kross, and Suk (2012) showed that the Regulation Fair Disclosure (FD) relating to the management earnings forecasts is

found to increase the accuracy and reduce the bias of earnings forecasts more than the period before the  $FD^2$ .

As a result, these two environments of disclosure are compared in this current study to draw some conclusions concerning the advantages of regulating the disclosure of management earnings forecasts. Further, the comparison may result in additional information for the regulators to be used in policy deliberations.

Another issue is that in Malaysia, if the variance in the earnings forecasts is outside the tolerance level of  $\pm 10\%$ , that would provide a signal to the SC. Based on Para. 9.19 (34) of the BMLR, directors are required to give an explanation for the deviation of  $\pm 10\%$  or more between the earnings forecasts after tax and minority interest announced or disclosed in a public document and actual earnings reported in the subsequent annual report (Bursa Malaysia Berhad, 2014). Thus, the SC requires the companies to publicly explain to the investors in their first published annual report why the forecasts have not been met. Lee, Taylor, Yee, and Yee (1993) and Sweeting (2001) indicated that IPO companies usually tend to provide explanations for their forecasts errors when the errors are both large and optimistic. Thus, the present study explores the provided explanations behind the earnings forecasts errors and whether or not these explanations are because of cases or situations that were outside the control of management and therefore, not the accountability of the IPO management.

 $<sup>^{2}</sup>$  FD is a regulation approved by the U.S. regulators in order to prevent the public companies from undertaking selective disclosure to specific individuals or entities (Heflin *et al.*, 2012). Regulation FD purposes to encourage the fair and full disclosure to all public.

### 1.4 The Distinctive Issues of the Study

This section provides a number of distinguishing issues that have been neglected by existing studies on the accuracy of IPO management earnings forecasts and that are addressed by this study.

### 1.4.1 Additional Characteristics of IPO Audit Committee

While some characteristics of audit committee (i.e., size, independence and financial expertise) have been previously examined in relation to the accuracy of IPO earnings forecasts, the current study provides new significant evidence by further investigating additional important characteristics of the audit committee, namely gender diversity, ethnicity, stock ownership, educational background and experience.

In linking the importance of these additional characteristics to the accuracy of management earnings forecasts, the gender composition of audit committee has become an area of recent research interest. In some countries, including Malaysia, gender composition is now a policy (Ahmad-Zaluki, 2012). The MCCG (2012) states as follows: (1) the boards must undertake steps to guarantee that female candidates are required as part of its employment exercise; and (2) the boards should disclose the strategies of its gender diversity and goals as well as the measures taken to live up to those goals in the annual report. This means the percentage of women directors on the boards of directors has lately become a topic in the reforms of corporate governance worldwide (Liang, Xu, & Jiraporn, 2013).

The gender diversity variable could improve the quality of a board's discussions and increase its ability to provide improved oversight of the company's disclosures and reports (Hillman, Shropshire, & Cannella, 2007; Adams & Ferreira, 2009; Gul, Srinidhi, & Ng, 2011). Along the same lines, some studies have indicated that female directors may improve earnings quality (e.g., Peni & Va'ha'maa, 2010; Srinidhi, Gul, & Tsui, 2011). In effect, the gender diversity can lead to enhancing the earnings forecasts accuracy for the following propositions: (1) gender diversity enhances the capability of the boards to monitor managers due to improved independence (Gul, Srinidhi, & Tsui, 2008) that will result in functioning of the company's internal governance systems; (2) gender diversity encourages better board attendance and ask for more responsibility from managers; and (3) gender diversity develops the decision making of the board owing to the unique new perceptions, improved creativity and better innovative methods (Carter, D'Souza, Simkins, & Simpson, 2010). This investigation is also encouraged by increased regulatory interest in increasing the gender diversity of Malaysian corporate boards.

Furthermore, Ahmad-Zaluki (2012) recommended that IPO companies should begin to undertake steps towards acknowledging and totally optimizing its human capital, including the female gender. Huang, Yan, Fornaro, and Elshahat (2011) and Thiruvadi and Huang (2011) indicated that future studies may examine the influence of gender diversity on audit committee on the earnings quality and future practices of earnings management, respectively. Additionally, Habib and Hossain (2013) called for conducting research that examines whether the management forecasts differ across companies because of the gender differences in management. As a result, this importance of gender diversity is expected to have a positive impact on the IPO earnings forecasts accuracy. However, there is no empirical evidence on the relationship between gender on IPO audit committee and earnings forecasts accuracy. Therefore, this study aims to fill this gap in the literature.

For ethnicity, it is one of the noticeable issues in Malaysia, which is considered a developing country with multi-ethnic communities (Che-Ahmed, Houghton, & Yusof, 2006). In this respect, Haniffa and Cooke (2002) showed that different cultural aspects, like ethnicity, have an impact on the disclosure practices of business and accounting in addition to audit services. In addition, Iskandar and Pourjalali (2000) and Nazri, Smith, and Ismail (2012) claimed that diverse racial groups like to preserve and perform their own ethnic identity principles and religious beliefs. In effect, ethnic diversity could lead to monitoring management effectively through two improvements in board governance: by providing access to the imperative resources available in the external environment and by improving the information delivered by them to the management because of the unique information held by such diverse directors (Carter et al., 2010). Hence, it is supposed that this efficient monitoring might lead to reducing the opportunistic behaviour of IPO managers resulting in publishing high quality earnings forecasts. Further, Haniffa and Cooke (2002) showed that Malays directors are related with high uncertainty avoidance, which can be argued to their robust faith in religion that results in their standards of non-assertiveness in facing the uncertainties. Thus, they may have strong intention toward disclosing conservative and accurate earnings forecasts.

Nazri *et al.* (2012) indicated that it is of significance to consider the effect of ethnicity in multi-ethnic societies, such as Malaysia. Further, Rahmat, Iskandar, and Saleh (2009) concluded that further studies are required to address the issue of audit committee culture that could have an influence on the performance of the audit committee. Therefore, and in view of the prior arguments, it is believed that ethnicity of Malaysian IPO audit committee directors may influence their monitoring role on the accuracy of management earnings forecasts. Nonetheless, so far, the empirical study on the association between ethnicity and accuracy of IPO management earnings forecasts does not exist. Thus, this study fills this gap by investigating this association.

Concerning the audit committee stock ownership, it has been suggested by the agency theory that shareholding of audit committee members may possibly influence their incentives to oversee the quality of financial reporting (Mangena & Tauringana, 2008). Directors with higher shares are more likely to challenge or penalize management if their financial reporting quality is poor, and to enhance the disclosure in the company's financial reports. To be specific, it is believed that audit committee directors with great ownership, are associated with a strong monitoring role, and the IPO management is more expected to be penalized should they fail to live up to the forecasted earnings. Therefore, management of these IPOs are more likely to issue more conservative and accurate future earnings. Stock ownership of the audit committee the performance of the audit committee (DeZoort, Hermanson, Archambeault, & Reed, 2002). They suggested further studies to be carried out on the link between these shares owned by audit committee directors and the financial reporting quality.

To date, there are no studies, which have directly investigated the relationship between the shareholding of IPO audit committee members and accuracy of IPO earnings forecasts. This enhances the justification for this current study to fill this gap by investigating such association.

In addition to the current gaps presented above regarding gender diversity, ethnicity and stock ownership, Ahmad-Zaluki and Wan-Hussin (2010) recommended further investigation for certain characteristics of audit committees in relation to experience and educational background and their impact on the accuracy of disclosed earnings forecasts in IPO prospectuses. Additional research could reveal if these characteristics can avail further insight into determinants, which affect the quality of earnings forecasts. The findings could lead to further improvement in corporate governance, which in turn can lead to improving the earnings forecasts. If the boards comprise individuals with educational background related to accounting and finance, they may prefer to disclose more information so as to: (1) demonstrate accountability; (2) improve the image of the company; and (3) prove reliability of the management team (Haniffa & Cooke, 2002). To this end, a company whose audit committee comprises educated directors or a majority of educated directors can enhance the credibility of earnings forecasts by: (1) better managing the risks they face (Dionne & Triki, 2005); (2) implementing innovative activities and deal with uncertainty (Hambrick & Mason, 1984); (3) being more effective in their monitoring activities (Ararat, Aksu, & Cetin, 2010); and (4) absorbing new ideas and helping in implementing more effective operation strategies (Qi, Lin, Tian, & Liu, 2012).

Kalbers and Fogarty (1993) considered the experience of audit committee members as the prime reason for overall audit committee effectiveness. Experience is vital for the directors of the audit committee for the reason that monitoring decisions are subjective and require obvious correct or incorrect answers (DeZoort, 1998). The characteristic of previous work experience can affect the oversight of audit committee members as well as show the necessity for more studies regarding audit committee tasks (DeZoort, 1998). Audit committee members who lack the required level of experience are likely to make ineffective decisions. This study suggests that audit committees with more working experience are more efficiently in undertaking their monitoring role on the IPO management. Following this line of reasoning, it is argued that better experienced directors may have greater understanding of earnings forecasts strategies relative to less experienced managers. In other words, more experienced directors may better understand that earnings forecasts errors could have bad effect on the value of the company and may expose the company for the litigation risk. However, to the best knowledge of the researcher, the influence of the audit committee members' educational background and years of experience on the accuracy of management earnings forecasts in IPO prospectuses has not been previously tested. Therefore, it is of significance for this study to fill these gaps and answer the call made by Ahmad-Zaluki and Wan-Hussin (2010).

### 1.4.2 Mandatory Earnings Forecasts Disclosure vs. Voluntary Earnings Forecast Disclosure

There are very few studies on the influences of securities regulations on the disclosure of earnings forecasts of IPO companies. Up to date, only Pedwell *et al.* (1994); Sun and Liu (2009); and Gounopoulos and Skinner (2010) compared the quality of

earnings forecasts during the mandatory and voluntary regimes. Therefore, the change in the regulation of earnings forecasts disclosure in Malaysia provides an opportunity to enrich this research topic. In Malaysia, whether the regulatory changes can enhance the credibility of IPO earnings forecasts disclosure is still an open empirical question since no existing study has examined the association between mandatory versus voluntary forecasts disclosure and their associated quality of earnings forecasts included in IPO prospectuses.

As every IPO market is unique owing to its background, it is of highly important to reinvestigate the issue of regulating IPO earnings forecasts in Malaysian IPO market, an emerging market. Specifically, there are some reasons that provide the basis for more research into this issue in Malaysia. First, in Malaysia, regulations applied to IPOs since 1996 have intended to enhance the accuracy of earnings forecast (Ismail & Weetman, 2007). Second, there is a lack of noticeable action from the regulator toward the unfavourable activities by the issuing companies (Ismail & Weetman, 2007). Third, the attributes of management earnings forecasts will be different based on the level of litigation risk, which is considered low in Malaysia compared to other countries. Finally, the evidences obtained for the impact of regulation on management earnings forecasts accuracy are mixed (e.g., Sun & Liu, 2009; Gounopoulos & Skinner, 2010), which can be attributed to the fact that each country has its own different regulatory frameworks and different economic environments. Thus, this study takes advantage of these two regulatory regimes to find out whether or not the quality of earnings forecasts has improved after the introduction of the new regime. Further, this study aims to explore the behavioral change of IPO management and its confidence under the new regime.
#### **1.4.3 Explanations of Forecast Errors Differences**

The issue of explanations provided by directors in the first annual report after IPO has not been extensively investigated in the available literature. Up to date, only Lee *et al.* (1993) and Sweeting (2001) investigated the explanations of forecast errors provided by directors. In addition, the previous studies on Malaysian IPO management earnings forecasts have not addressed or considered this issue. Based on the recommendations of Jelic *et al.* (1998) and Ahmad-Zaluki and Wan-Hussin (2010), the current study strives to explore the explanations of earnings forecast errors of Malaysian IPOs. Further, the large percentage of earnings forecast errors reported in the last Malaysian studies (i.e., 26.35% in Ismail and Weetman (2007); and 23.76% in Ahmad-Zaluki and Wan-Hussin (2010)), also provide motivation to explore this issue. This is to address the reliability of the way differences between actual earnings and forecasted earnings findings are explained to investors.

#### **1.5 Problem Statement**

As a result of the expansion of the Malaysian capital market, there has been a sound growth in the number of IPOs being issued by Malaysian companies. The IPO market is generally surrounded by information asymmetry, which is expected to cause more uncertainty concerning their predictions. This consequently will lead to great cost of capital (Certo, 2003; Flostrand & Strom, 2006; Abad, Rostami, Zaranji, & Jamali, 2013) and mislead the investors as well as financial analysts who are not so familiar with these new IPOs. Therefore, regulatory agencies and market participants in Malaysia are concerned whether or not the earnings forecasts in the IPO prospectuses are accurate since these forecasts can reduce the information asymmetry. Prior

evidences on IPOs in Malaysia have reported low level of accuracy of the earnings forecasts<sup>3</sup>. Further, compared to similar earnings forecasts made in other East Asian countries (i.e., Hong Kong), the Malaysian earnings forecasts are of high inaccuracy<sup>4</sup>. Moreover, according to the requirement for earnings forecast errors to be within a  $\pm 10\%$  threshold, the SC indicated that 32 companies (56.1%) of the 57 companies that went public in 2005 and published audited results by July 2006, had failed to meet their forecasted earnings in their prospectuses. These evidences critically question the credibility of Malaysian IPO earnings forecasts since both Malaysian and international investors may not place reliance on these forecasts issued by the IPO management when considering investments in the Malaysian IPO market.

Under these circumstances, the inaccuracy of earnings forecasts are of utmost concern for regulators of capital markets since it is a poor reflection of the quality of companies that go public (Ahmad-Zaluki & Wan-Hussin, 2010). Thus, to be able to enhance the accuracy of earnings forecasts, Malaysian IPO management as well as regulators need to determine the level of forecasts accuracy besides recognizing the factors that may affect this level of accuracy.

Presently, the influence of an audit committee and its characteristics on the accuracy of IPO earnings forecasts remains an open empirical question that has not been comprehensively examined. A pivotal aim of this study is to address this void in the

<sup>&</sup>lt;sup>3</sup> Mohamad, Nassir, Kuing, and Ariff (1994) reported an absolute forecast error of 28% during the period 1975-1988; Jelic *et al.* (1998) for the period 1984-1995 showed an absolute forecast error of 54.91%; and Ahmad-Zaluki and Wan-Hussin (2010) documented an absolute forecast error of 23.76% for the period of 1999-2006.

<sup>&</sup>lt;sup>4</sup> McGuinness (2005) reported an absolute forecast error of 7.26% for Hong Kong IPOs for the period 2002-2003.

existing literature surrounding earnings forecast accuracy and audit committees. IPO earnings forecast accuracy can be monitored by having effective audit committees (Ahmad-Zaluki & Wan-Hussin, 2010). Hence, Malaysian regulators encourage companies, which want to go public, to follow the best practices and structure of an audit committee. As mentioned earlier, the responsibilities of overseeing the financial discretion of management is delegated by the boards of directors to the audit committee, which is the most reliable guardian of public interests. For the financial disclosure, the audit committee serves as the gatekeeper and for the financial reporting process, it serves as the ultimate monitor (Liu, Tiras, & Zhuang, 2008; Liu et al., 2014). Liu and Zhuang (2011) further showed that audit committees now have a greater responsibility to monitor voluntary disclosure, including management forecasts and financial reporting. Thus, this study strives to employ a comprehensive framework of audit committee characteristics, which includes the commonly examined attributes (size, independence and financial expertise) and new additional attributes (gender diversity, ethnicity, stock ownership, educational background and experience) to provide empirical evidence on the impact of audit committee on the accuracy of IPO management earnings forecasts based on the underlying theories (signaling theory, agency theory and resource-dependence theory).

Furthermore, the regulatory changes may influence the accuracy of IPO earnings forecasts. Thus, this study also aims to shed light on the compression between two different regulatory environments (mandatory versus voluntary) to observe the related accuracy of earnings forecasts included in Malaysian IPO prospectuses under each environment. Finally, this study also strives to explore the comments and explanations provided by IPO directors concerning earnings forecasts errors. These explanations may show how forecasts errors are explained to interested parties. Further, it may illustrate whether the management of an IPO company has to bear responsibility for these errors or it is out of its control.

#### **1.6 Research Questions**

From the preceding discussion, the present study is set to answer four key questions:

- 1- What is the current level of accuracy of management earnings forecasts that are included in Malaysian IPO prospectuses?
- 2- Do mandated management earnings forecasts provide the market with more accurate and conservative information than that provided within an unregulated market (voluntary regime)?
- 3- What is the relationship between audit committee characteristics, namely, size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background and experience and the accuracy of management earnings forecasts that are included in Malaysian IPO prospectuses?
- 4- What explanations have been provided in the first published annual reports by the management when the earnings forecasts made in their IPO prospectuses have deviated from the  $\pm 10\%$  tolerated by the SC?

#### **1.7 Research Objectives**

The overall objective of this research is to achieve valuable insights on the influence of audit committee characteristics on the accuracy of management earnings forecasts contained in Malaysian IPO prospectuses. Further, this study strives to shed some light on the issue of regulatory disclosure of IPO management earnings forecasts and the issue of explanations behind the earnings forecast errors. Specifically, the current study aims to accomplish the following objectives:

- To examine the current level of accuracy of management earnings forecasts included in Malaysian IPO prospectuses.
- 2- To examine whether the mandated management earnings forecasts provide the market with more accurate and conservative information than that provided within an unregulated market (voluntary regime).
- 3- To investigate the relationship between audit committee characteristics, namely, size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background and experience, and the accuracy of management earnings forecasts included in Malaysian IPO prospectuses.
- 4- To determine the explanations that have been provided in the first published annual reports by the management when the earnings forecasts made in their IPO prospectuses have deviated from the ±10% tolerated by the SC.

# 1.8 Scope of Study

The investigation of issues related to IPOs underpricing and long-run underperformance has been broadly examined in the literature. However, there are not many studies related to IPO disclosures. Therefore, this current study focuses on investigating the accuracy of management earnings forecasts that are included in IPO prospectuses. This study focuses mainly on the characteristics of the audit committee as factors that might affect the accuracy of IPO management earnings forecasts. Further, it focuses on the regulation concerning the IPO earnings forecasts and the explanations behind the earnings forecast errors. The present study employs data from the Main Market of the Malaysian IPO market over the period of January 2002 to February 2012. This period has been chosen in order to investigate a later sample period since the last investigated period was 1999-2006 by Ahmad-Zaluki and Wan-Hussin (2010). Another reason is that the period January 2002 to January 2008 represents the period of mandatory disclosure for IPO earnings forecasts, while the period February 2012 is selected as the end of the period under study since the data is accessible to the researcher until that date.

This study basically is a single-country investigation that considers and investigates earnings forecasts of the Malaysian IPO market, which has not been addressed sufficiently in Malaysia. The Malaysian IPO market represents a rare case study since companies seeking listing were mandated to issue earnings forecasts for their next financial year until February 2008, when disclosing earnings forecasts became voluntary. Further, there has been an enormous growth in the IPO market in Malaysia, revealed by growing numbers of listed companies on the Bursa Malaysia, from just 285 companies at the beginning of 1990 to 941 companies at the end of 2011.

#### **1.9 Study Motivation and Significance**

#### **1.9.1 Study Motivation**

There are a number of motivations that encouraged the researcher to carry out this study. First, in spite of the growing recognition of the value relevance of management earnings forecasts that are included in the prospectuses of IPO companies, the number of studies that address this important issue is still limited (Gounopoulos, 2011). Thus, the possibility of shedding further light on such value relevance still exists (Hartnett, 2010).

Second, despite the issues of information asymmetry and agency problem being considered as very high in IPO markets, where monitoring mechanisms have a crucial responsibility in management oversight, the studies that consider the impact of corporate governance mechanisms (i.e., audit committee) on the accuracy of IPO earnings forecasts are scarce and still in infancy stages (e.g., Ahmad-Zaluki & Wan-Hussin, 2010; Cormier *et al.*, 2014). Further, while prior studies have documented empirical evidence and theoretical explanations on the relationship between corporate governance and company-specific characteristics with IPO earnings forecasts accuracy, the results have been conflicting and inconclusive (e.g., Yang & Kao, 2007; Bédard *et al.*, 2008; Mnif, 2010; Ahmad-Zaluki & Wan-Hussin, 2010). Specifically, the previous findings on the audit committee structure are fairly weak to enhance the perception that audit committees bear the major responsibility of overseeing a companies' earnings forecasts. To this end, this study extends and complements previous studies (e.g., Ahmad-Zaluki & Wan-Hussain, 2010; Bédard *et al.*, 2008) by

providing more convincing evidence regarding the influence of audit committees on the management earnings forecasts accuracy.

The third motivation is that this study strives to answer the calls made by previous scholars. For example, Cormier *et al.* (2014) showed that it is significant to better comprehend the association between the forecasts of IPOs and corporate governance. Bédard *et al.* (2008) stated that in the context of IPOs, additional studies are required on the association between the audit committee and the credibility of forward-looking information. Gounopoulos (2011) showed that there should be greater emphasis on research into the explanatory variables of forecasts accuracy found in the prospectuses.

In light of these deficiencies, further empirical investigations are justified and needed to shed more light on the association of audit committee characteristics and the accuracy of IPO earnings forecasts. Yet, to the best of the researcher's knowledge, no comprehensive empirical evidence exists that provides conclusive determinations concerning the influence of audit committee as a vital monitoring mechanism on the accuracy of IPO earnings forecasts. Specifically, conducting this comprehensive empirical evidence may, in turn, result in different underlying correlations and analysis of this issue and contribute one more piece of evidence to the debate.

#### **1.9.2 Study Significance**

The significance of this study stems from a number of accomplishments. This study contributes to the literature and knowledge on IPOs, corporate governance and management earnings forecasts in several ways:

- Examining the audit committee characteristics/IPO earnings forecasts accuracy linkage is important and timely. Such examination contributes to the body of knowledge about audit committee characteristics that are more effective in diminishing the agency costs in an East Asian country, such as Malaysia. In Malaysia, the effectiveness of audit committee is of greater significance since there is insufficient legal protection relative to developed countries (Saleh *et al.*, 2007).
- 2. The effect of corporate governance, particularly audit committees, on the accuracy of IPO earnings forecasts, has not been extensively examined in the literature (Karim *et al.*, 2013). The previous studies that have examined this issue are still very limited. These studies include Yang and Kao (2007); Bédard *et al.* (2008); Mnif (2010); and Ahmad-Zaluki and Wan-Hussin (2010). Among these studies, only Bédard *et al.* (2008) and Ahmad-Zaluki and Wan-Hussin (2010) showed directly the impact of some audit committee characteristics on IPO management earnings forecasts accuracy. Therefore, the current study extends the literature by further investigation of the issue.
- 3. Most previous studies on the factors influencing the management earnings forecasts accuracy concentrated only on some characteristics of audit

committee (i.e., size, independence and financial expertise) and companyspecific characteristics and other variables, such as underwriter reputation and auditor quality (e.g., Cheng & Firth, 2000; Lonkani & Firth, 2005; Chong & Ho, 2007; Gounopoulos, 2011). So far, no study has investigated the effect of audit committee gender diversity, ethnicity, stock ownership, educational background and experience on the accuracy of management earnings forecasts disclosed in the IPO prospectuses. Therefore, the present study fills these gaps by extending the prior researches to investigate the impact of these variables on the accuracy of earnings forecasts in Malaysian IPO companies.

- 4. Studies that have compared the accuracy of mandatory earnings forecasts to voluntary earnings forecasts are still limited. No previous study has examined the accuracy of management earnings forecasts of Malaysian IPO companies during both periods of mandatory and voluntary disclosures. Hence, this study contributes to the knowledge and literature by examining this issue on two different regulatory statuses of Malaysian IPOs.
- 5. Further, few studies are available, and some questions remain unanswered, about the provided comments and explanations regarding errors of earnings forecasts. This current study contributes to the literature of IPOs and management earnings forecasts, as it is the first study in the Malaysian IPO context, which investigates the explanations that have been provided in the IPO companies' first published annual reports.
- 6. The underlying theories relevant to this study are signaling theory, agency theory and resource-dependence theory. The results of this study extend the

understanding of the importance of the above-mentioned theories in explaining the behavior of audit committee practices and earnings forecasts accuracy in the Malaysian IPO business environment.

- This study measures the accuracy of management earnings forecasts by both absolute forecast error as well as squared forecast error. Prior studies (Yang & Kao, 2007; Bédard *et al.*, 2008; Mnif, 2010; Ahmad-Zaluki & Wan-Hussin, 2010) that examined corporate governance and accuracy of earnings forecasts employed only absolute forecast error.
- 8. This study extends the work of Ahmad-Zaluki and Wan-Hussin (2010) by using a later sample period, which allows the study to include Malaysian IPO companies that have not been examined as well as the companies that went public after the new regulation of liberalizing the earnings forecasts disclosure. This study also uses comprehensive data by involving the more recent sample of IPO companies listed on the Main Market of Bursa Malaysia from 2002 to 2012.
- 9. Practically, the expected results of this study are supposed to have useful and practical implications for at least four parties: authorities, investors, issuers and financial analysts. The said authorities include policy makers and regulatory agencies related to IPOs, prospectuses and financial reporting and corporate governance. For example, results from this study could be valuable input for the authorities (SC, Bursa Malaysia and the Malaysian Institute of Corporate Governance (MICG), or other regulatory bodies) to plan and design policies most suited for Malaysian IPOs. The findings will provide greater

understanding on the impact of audit committee mechanism on the accuracy of earnings forecasts of IPOs. This will allow the authorities to revise the effectiveness of IPO audit committee and take the requisite measures to improve this effectiveness, thus leading to developing the financial disclosure process.

#### **1.10 The Structure of the Thesis**

In general, this thesis consists of eight chapters. Figure 1.1 shows a summary of the thesis structure. Chapter 1 presents the main idea of this study consisting of background, research issue and other associated issues, why audit committee and earnings forecasts accuracy are important, statement of problem, research questions, research objectives, scope of the study and motivations and significance of the study. Chapter 2 presents background about the Malaysian IPO market and corporate governance. Chapter 3 reviews and discusses the concept and importance of earnings forecasts and presents the related theories of this study, followed by a review of the empirical studies on IPO earnings forecasts in general. Chapter 4 reviews the literature related to the empirical studies on audit committee characteristics and the accuracy of earnings forecasts and related issues. Research methods are presented in Chapter 5. It includes the theoretical framework, variables and hypotheses development of the study based on the understanding gained in Chapters 3 and 4. Further, it includes the measurements of variables, the models used in this study, sample selection and data collection.

Details of analyses, results and discussion are presented in Chapter 6. Two types of analysis are conducted. The first one is multivariate analysis, which examines the relationship between audit committee characteristics and the accuracy of IPO management earnings forecasts. The second analysis is the content analysis, which explores the explanations provided in the first published annual report. Chapter 7 presents the sensitivity analysis and further empirical tests. Chapter 8 starts by presenting a recapitulation of the study. Further, it presents some recommendations, the limitations and suggestions for future research.



# Figure 1.1

The Structure of the Thesis

#### **1.11 Summary and Conclusion**

This chapter highlights the general idea for this study. It presents a background of the issue of earnings forecasts accuracy in general and more specifically in Malaysia. This chapter also justifies the importance of audit committee characteristics for the accuracy of earnings forecasts. Specifically, the first three sections explain the background, research issue, and other associated issues. This is followed by the sections on how this study is different from prior studies, problem statement, research questions and objectives. Then, scope, motivation and significance of the study are further explained in the last sections. Finally, in order to ease the understanding of this study arrangement, the thesis structure section explains the study outlines.

The following chapter provides the background of the Malaysian IPO market and corporate governance.

#### **CHAPTER TWO**

# BACKGROUND TO THE MALAYSIAN IPOS AND CORPORATE GOVERNANCE

# **2.1 Introduction**

As every IPO market is unique owing to its background, it is important to present an overview of the Malaysian IPO market prior to proceeding with the current study. Thus, the present chapter explains the background concerning Malaysian IPOs along with their corporate governance. This chapter begins with Section 2.2, which is dedicated to the Malaysian capital market. Then, Section 2.3 presents the background of the Malaysian IPO market, encompassing regulatory structure, reporting framework, the reasons behind the listing in Bursa Malaysia, the features of Malaysian IPOs and listing process. In the Section 2.4, the background of Malaysian corporate governance is presented, followed by a summary of the present chapter in the final Section 2.5.

#### 2.2 Overview of the Malaysian Capital Market

The Malaysian stock market was first introduced as the Malaysian Stock Exchange in 1960. It was then called the Stock Exchange of Malaysia and Singapore until the Kuala Lumpur Stock Exchange Berhad (KLSEB) and Singapore Stock Exchange (SES) were established in 1973. Following its establishment as KLSEB in 1973, it had 262 listed counters, and by 2011, this number had increased to 941. Following a demutualization exercise in 2004, KLSEB became known as Bursa Malaysia. The objective behind the name change was to improve its competitive level in order to

counter the exchange and trade sector globally and to enhance its products and services and its business efficiency.

Based on the Capital Markets and Services Act (CMSA), 2007, Bursa Malaysia is an exchange holding company offering many services, including settlement, trading, clearing and deposits. In short, it is an entirely integrated exchange offering a veritable array of products and services, such as offshore, equities, derivatives as well as Islamic products. It also has a varying choice of investment offers. Bursa Malaysia incudes more than 900 listed companies, which make it one of the biggest bourses in Asia.

The Malaysian stock market serves as the driver of economic growth comprising trading in stocks and related securities of exchange. It also provides investors with liquidity through the unification of enterprises to increase funds by issuing new securities to individuals and organizations desirous of investing their savings or surplus funds.

# 2.3 Background of Malaysian IPOs

#### 2.3.1 The Regulatory Structure and Reporting Framework

#### 2.3.1.1 Regulatory Structure

Both the SC and Bursa Malaysia are responsible for security regulation, especially those related to new equity issues.

#### **Securities Commission (SC)**

The SC's establishment dates back to March 1993. It was established as a statutory body under the purview of the SC Act, 1993. It seeks to enhance and preserve fair, efficient, safe and transparent securities to drive innovative and competitive improvement of the capital market. Therefore, the SC's responsibilities include the provision of the regulations, advising the Minister of Finance on issues concerning future industries and securities and making recommendations for the legal reformation related to securities and future contracts. In sum, the SC is considered as the central supervisory power and it acts as the market regulator of the entire fund-raising activities.

# Bursa Malaysia Berhad

Bursa Malaysia Berhad or the KLSE is the official stock exchange in Malaysia, established under the Securities Industry Act (SIA) in 1973. It is a self-regulatory organization having its own Memorandum and Articles of Association. It regulates the exchange of traded securities and derivatives. Its main responsibilities include the regulation of the members' conduct and their securities dealing, and the administration of the Malaysian share market. It also oversees the market and ensures the enhancing of its requirements regarding listing that contains the criteria for listing, disclosures and standards to be upheld by the companies listed in it. A company desirous of making an IPO in Malaysia looks for a listing on the Main Market or on the ACE Market.

#### 2.3.1.2 Reporting Framework and IPO Regulations

An IPO offers the public new issues that are under the purview of the prospectus provisions of the SC Act, 1993. It is mandatory for IPO companies to reveal timely, accurate and material information concerning their corporate performance to their current and potential investors for the maximization of transparency. It has been obligatory for the Malaysian IPO companies to reveal the forecasted earnings for the end of next financial year in their own prospectus; and from February 2008, the mandate is similar to that in the United Kingdom (UK), Australia, Canada and Hong Kong, when it comes to voluntary earnings forecasts disclosure. In addition, a company is mandated to provide explanations for any deviation of  $\pm 10\%$  or greater between the reported earnings after tax, and minority interests in the audited reports and any forecasts in the prospectus (Bursa Malaysia Berhad, 2014). Moreover, companies also have to report share issues and the identity, compensation, equity ownership and background of directors and senior managers in their prospectuses.

Companies that apply for IPO should provide a detailed prospectus to the SC and Bursa Malaysia. As such, prospectuses are considered prolonged documents. The offerings are supposed to be underwritten by recognized investment banks as well as auditing firms. Normally, the prospectus contains information regarding future anticipations of market growth and profits, strategic trends and aims and management and board composition, among others.

Moreover, an additional regulation was introduced through the SC Prospectus Guidelines (SC, 1995a) with effect from 1 January 1996 to IPOs, in particular industries, namely trading/services, specialized and construction industries. The guidelines mandate the main shareholders and promoters of any Main Board candidate company included in the previous mentioned industries, to select either a moratorium to be employed on disposal of their shares in the applicant company form or to offer a profit guarantee of 90% of the forecasts earnings (SC, 1995b).

The guarantee is to be secured through a bank guarantee in favor of the IPO company or through the deposit of securities that belong to guarantors, to an independent stakeholder accountable for conducting daily checking of the share price movements on the basis of daily closing transacted market price of shares. In case the actual profit prior taxation is less than 90% of the guaranteed profit for the specific financial year, the guarantors should pay compensation to the group for the deficit for every financial year. If the promoters made good of the deficit, then the contribution is reported in the income statement for the year as 'profit contribution' or 'proceeds from profit guarantee', credited to the group's and the company's unappropriated profit. Furthermore, all Second Board companies have been mandated to offer a profit guarantee (SC, 1997) in contrast to a moratorium, with effect from 1 July 1997.

The moratorium calls for major shareholders promoting the IPOs to maintain their owned shares for a period of a year from the time of board admission. Based on the regulatory modifications with effect from 30 April 1999, the guarantee condition was changed to a moratorium on all promoters of regulated IPOs, although it contained no conditions on forecast accuracy (SC, 1999). The main shareholders of the regulated companies were mandated to retain 45% of their shares for a year after listing. Every year, they are permitted to dispose 15% of the shares based on the moratorium. Therefore, expectations are not guaranteed as to whether profit guarantee companies manage earnings to a greater or a lesser level compared to moratorium companies.

In 2009, the SC changed the regulations regarding the moratorium for both the Main Market and ACE Market. For listing under the market capitalization test or profit test, the promoters of Main Market and ACE Market are not permitted to transfer, sell or assign all their shareholdings for six months from the date of admission. Likewise, for listing under the infrastructure project corporation test, the promoters are not permitted to transfer, sell or assign all their shareholdings for six months, subsequent selling down is allowed depending on specific conditions.

For the Main Market, moratorium will be ended instantly at the end of the six months if the infrastructure project has produced one complete financial year of audited operating revenue. For infrastructure project corporation, which has yet to produce one complete financial year of audited operating revenue, the promoters have to maintain their shareholdings amounting to 45% of the issued capital. Upon accomplishing one full financial year of audited operating revenue, the moratorium on the 45% shareholding will be ended. For the ACE Market, after the six months, at least 45% has to be maintained for another six months and beyond. The further selling down in ACE market is permitted on a staggered basis over a period of three years.

# 2.3.2 Reasons for Companies Listing on Bursa Malaysia, Features of Malaysian IPOs, and Listing Process

#### 2.3.2.1 Reasons for Companies Listing on Bursa Malaysia

While companies may have various reasons for obtaining a listing on Bursa Malaysia, the general reason is to raise capital for business operations expansion as an alternative to borrowing from banks (Ahmad-Zaluki, 2005). Another reason for going public in Malaysia is for diversification of ownership. Other reasons include the achievement of a higher profit by leveraging on publicity produced by stock-broking companies, which consequently assists in the stimulation of the company's growth and in attracting new business. Moreover, investors are inclined to have higher confidence in public listed companies as they have to meet strict listing requirements prior to being listed on Bursa Malaysia. Additionally, the listed company is enabled to raise more funds from current shareholders through rights issues and loan stocks for business expansion, new projects or reduction of debts. Listed companies are also in a superior position to expand their businesses globally owing to their increased publicity of activities (Ahmad-Zaluki, 2005).

## 2.3.2.2 Features of Malaysian IPOs

The Malaysian IPO market is distinct from other markets in many ways, the most important of which is that IPOs in Malaysia serve as instruments of official government policy for the redistribution of national wealth among various ethnic groups (Ahmad-Zaluki, 2005). As such, IPOs are characterized by stringent regulations and monitoring by the government, which entail a long process prior to granting of approval of the official listing on Bursa Malaysia. In addition, companies making IPOs are mandated by law to reserve 30% of shares to the public for Bumiputera applicants. The requirement aims to maximize Bumiputera ownership in the corporate sector. Nevertheless, companies controlled by Bumiputeras are not mandated to fulfil this requirement. Besides the allocation of shares to the public and Bumiputera applicants, companies are allowed to allocate some shares to directors, employees and other individuals who contribute to the success of the company; for instance, their suppliers, distributors, dealers or even customers.

In Malaysia, there are two main categories of IPOs. The new issue of shares known as the 'public offer' is the first one; while the second one is the 'offer for sale' of existing shares, which have not previously been traded by a shareholder or more (Yong, 2011). Companies also combine public offers and offers for sale of existing shares in what is considered as a mixed/combination offering. Under this offering, the sale of shares is in part from the company issuing the shares and in part from the existing shareholders. The existing shareholders' absolute holdings are not influenced by the public offer as new shares are offered. This will, however, minimize the company's percentage holdings. On the contrary, in an 'offer for sale', the absolute holdings as well as the proportion holdings of the existing shareholders in the company are impacted and minimized. Moreover, the gross proceeds raised from public offers providing new investment capital will revert to the company while the gross proceeds raised from offers for sale go to the share owners. In the context of combination offerings, the proceeds will partially go to the issuing company and partially to the selling shareholders.

#### 2.3.2.3 Listing Process of Malaysian IPOs

In the Malaysian context, the listings are contained in Bursa Malaysia and it provides two selections for the listing; on the Main Market or on the ACE Market (effective from 3 August 2009)<sup>5</sup>. The former market has been established to offer companies with a high-quality platform to raise investments; while the latter market provides an improved platform for companies in various sectors. Malaysian listed companies need to adhere to the listing requirements as mandated by Bursa Malaysia. The requirements are both quantitative and qualitative. They include requirements of primary listing of local and foreign companies in both the Main and ACE Markets, secondary listing of foreign companies and listing of special purpose acquisition companies that are required to be met by the companies prior to being listed on Bursa Malaysia (Bursa Malaysia Berhad, 2014). The listing requirements for local as well as foreign companies are shown in the following Figure 2.1.



*Source:* <u>http://www.bursamalaysia.com/market/listed-companies/listing-on-bursa-malaysia/listing-criteria/</u> (as at 3 December 2012)

Figure 2.1 Summary of Listing Criteria

<sup>&</sup>lt;sup>5</sup> The Main and the Second Boards were merged in August, 2009. Their new name is the Main Market, and the name of MESDAQ board was changed to the ACE Market, which stands for, "Access, Certainty, Efficiency". The most important goal of the ACE Market is to offer higher efficiency and certainty concerning the listing process and to help issuers tap into the capital market. Companies from every sector and of all sizes can apply for this market, which is a sponsor-driven market. The sponsors, mostly investment bankers, basically evaluate the applicants' suitability, perform the due diligence process for the companies' documents and contact regularly with the companies for at least three years subsequent to the listing.

#### Primary Listing of Local and Foreign Companies in the Main and ACE Markets

#### **Quantitative Criteria**

For the Main Market, both local and foreign companies have three listing choices, the first being the profit test (Bursa Malaysia Berhad, 2014). In order to become listed on the Main Market, both categories of companies are required to possess three to five financial years of continuous profit after tax (PAT) with the least total of RM20 million. They have to also possess no less than RM6 million PAT for their recent or the most current financial year. The next substitute way is the market capitalization test where it is required that there is aggregate market capitalization of no less than RM500 million upon listing. The third substitute is the infrastructure project corporation test. In this category, the companies can construct and control an infrastructure project, external or internal to the country, with the cost of the project exceeding RM500 million. The companies must also hold at least 15 years remaining license period if it is granted by the state agency or the government. Contrary to the quantitative conditions of Main Market listings, under the ACE Market listings, there is no obligation of operating track record of companies or earning obligation that should be considered in the listing.

For the Main Market, it is also required for the public spread obligation that 50% has to be distributed to Bumiputera shareholders based on best effort. For the ACE Market, no necessity exists upon initial listing concerning Bumiputera equity requirement; only that 12.5% of the companies' paid-up share capital offered should be distributed to Bumiputera shareholders based on best effort, within one year after achieving Main Market profit track record or five years following the ACE Market listing.

#### **Qualitative Criteria**

Both local and foreign companies making the list in the Main Market and ACE Market have six aspects to fulfill (Bursa Malaysia Berhad, 2014). The first aspect is sponsorship. While sponsorship is not applicable for the Main Market, for the ACE Market, a sponsor is required to be engaged by the companies to assess their suitability at least for three years before listing. The second aspect is core business, which should not be the investment holding of other listed companies for both the Main and ACE Markets. The third aspect is that, the management should be characterized by continuity of substantiality. Prior to application submission, for both the Main and ACE Markets, the management must provide continuity of a considerable period of three full financial years. For the ACE Market, if the companies do not exceed three years, then the same management should be managing the company from its incorporation.

For the fourth aspect related to financial position and liquidity, the companies of the Main Market are only suitable to be listed on the Main Market if their working capitals are at a satisfactory level for a period of not less than one year; their cash flows should be in positive condition and they should provide a recent audited balance sheet of no accumulated losses on the submission date. For the ACE Market, the companies' financial conditions should be such that the liquidity is in a good state of working capital for at least a year.

The fifth aspect is a moratorium on shares. For the Main Market, the shareholdings of the promoters should be reported for a period of six months prior to the admission date. For the ACE Market, the promoters' entire shareholdings should be six months from the date of admission. The following selling down has to be subject to a number of conditions as highlighted earlier. The final aspect is transaction with related parties. Listing on the Main and ACE Markets requires report concerning the related parties' transaction with favorable terms and conditions. Before the companies are listed, interested individuals or their subsidiaries must settle both trade and non-trade debts.

#### Secondary Listing of Foreign Companies in the Main Market

This condition applies to the foreign companies only in the country, which is confined to the Main Market. The foreign companies that are applying must have been listed in one of the World Federation of Exchanges members' stock exchange. As such, they must also adhere to their countries' exchange regulations of listing, where the regulations of disclosure are similar to that of Bursa Malaysia standards. If they do not have the same level of standards, then the companies have to modify their constituent documents (Bursa Malaysia Berhad, 2014).

#### Listing of Special Purpose Acquisition Companies (SPAC) in the Main Market

This listing is only allowed in the Main Market (Bursa Malaysia Berhad, 2014). The incorporation of companies must comply with the Companies Act, 1965. The SC may also permit SPAC incorporated outside Malaysia through jurisdiction if companies meet all the additional conditions for foreign companies' listing. The companies must at least have a raised fund of RM150 million and should have skilled, qualified and knowledgeable management teams. Additionally, 10% of the shares of SPAC should be allocated to the management team upon listing. Management team's entire interest starts from the listing date until the completion of the qualifying acquisition. A 90%

portion of the trust account's gross proceeds must be retained and it may only be released when the trust account's custodian releases it. The companies should complete the qualifying acquisition within 36 months from the listing date.

## 2.4 Background of Malaysian Corporate Governance

After the advent of the Asian financial crisis (1997-98), the importance of good corporate governance practices was highlighted for the restoration of investors' trust in the markets of East Asian countries. The financial crisis, along with the financial scandals in the US, stressed the crucial necessity for the companies in developed as well as developing countries to come up with enhanced corporate governance practices in order to regain investors' confidence (Hashim & Devi, 2009). The deteriorating aspects of financial reporting quality have led to increased issues concerning the implementation of the many facets of corporate governance practices. As a result, many countries in Asia have raised a proactive approach to improving and reinforcing corporate governance systems (Hashim & Devi, 2009). The crisis and scandals urged the Malaysian government to reinforce its corporate governance system and served as a wake-up call for the concerned authorities to come up with more effective corporate governance coupled with transparency in Malaysian companies.

#### 2.4.1 Malaysian Corporate Governance Development

Malaysian corporate governance can be traced back to 1998, which was initiated by the creation of the High Level Finance Committee on Corporate Governance (FCCG). According to the FCCG, corporate governance can be defined as the process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability, with the ultimate objective of realizing long-term shareholders' value, whilst taking into account the interests of other stakeholders (Report on Corporate Governance, 1999).

In the year following its establishment, the FCCG published its report in 1999 containing three main matters: (1) the proposed Code; (2) the reform of laws and regulations regarding duties of directors and officers, improvement of disclosures, enhancement of the shareholders' rights and the company meetings' effectiveness; and (3) directors' training and education.

#### The Malaysian Code on Corporate Governance (MCCG, 2000)

The SC published the FCCG report as the Report on Corporate Governance (1999) and was later acknowledged as the Malaysian Code on Corporate Governance (2000).

The code encompasses four areas, namely boards of directors, directors' remuneration, shareholders and accountability. It is however mainly concerned with maximizing efficiency and accountability of the boards of directors (Abdul-Wahab, How, & Verhoven, 2008). Compliance to the code was initially voluntary, but in 2001, Bursa Malaysia made it mandatory for listed companies to report the level of their compliance or provide an explanation for non-compliance. To ensure the compliance of companies, listed companies with a financial year ending after 30 June 2001, were mandated to incorporate their corporate governance statements, internal control statements, boards' composition, audit committee composition along with any further statements of the board in their annual reports.

The main areas behind the Malaysian corporate governance improvement is the reinforcement of the minority shareholders' rights, the enhancement of the directors' transparency and accountability, the reinforcement of regulations and the promotion of training and education at corporate levels. The Malaysian Corporate Governance Regulatory Framework is depicted in Figure 2.2.



governance/malaysian-cg-regulatory-framework.html (as at3 December 2012)

# Figure 2.2

#### Malaysian Corporate Governance Regulatory Framework

Owing to the historical link between Malaysia and the UK, the Malaysian Code was primarily modeled subsequent to the latter's Combined Code of UK Corporate Governance (Ow-Yong & Guan, 2000; Abdul-Wahab *et al.*, 2008).

The Code suggests that companies develop a well-balanced and effective board to establish the highest practices in corporate governance. This well-structured board is described as a board with balanced non-executive and executive directors, together with independent members, in order to make sure that the board makes effective decisions without undue coercion from individuals. The Code also mandates that non-executive directors possess the essential abilities and knowledge and are characterized as individuals of caliber and reliability to achieve independent decisions. The board of directors should form an audit committee comprising no less than three directors, the majority being independent, for the implementation and reinforcement of the overseeing function of the boards of directors (MCCG, 2000).

#### **Revised MCCG (2007)**

The initially established MCCG 2000 was revised to provide further support for the functions and tasks of the boards of directors and audit committees through the publishing of the revised MCCG (Revised, MCCG, 2007). This revised version enhances the responsibility of the nomination committee through the suggestion that recommended applicants for directorships should have the essential expertise, knowledge, skills, integrity, as well as experience to guarantee that the board conducts its functions in an effective way.

Additionally, the Revised Code also mandates that the audit committee should be composed of no less than three directors who are non-executive directors, and most of them must be independent. It recommends that all the members of the audit committee should be financially literate with at least one of them being a member of an accounting association. The Code aims to reinforce the task of audit committees regarding the process of financial reporting and to help them in conducting their responsibilities in an efficient way.

## **The MCCG (2012)**

It was revised after considering changing market dynamics, global trends, as well as the need to reform and support the effectiveness in the framework of corporate governance. The MCCG 2012, which replaces the MCCG 2007, stipulates broad principles as well as certain recommendations in terms of structures and processes, which companies should follow so that high-quality corporate governance becomes an integral element of the business trades and culture. MCCG 2012 aims to clarify the task of the boards of directors in offering leadership, supporting its effectiveness by reinforcing its structure and enhancing its independence. Companies are also encouraged to emplace the policies of disclosure based on standards of high-quality disclosure. Companies must also publicly make known their obligation to maintaining the rights of shareholders.

The MCCG 2012 advocates that companies should adopt very high standards. Although it is not compulsory for listed companies to observe the MCCG 2012, these companies must however clarify how they have applied the recommendations in their annual reports, besides justifying the causes for non-adherence of any of the recommendations.

## 2.4.2 Audit Committee in Malaysian Corporate Governance

The widespread employment of the audit committee as a crucial mechanism of a corporate governance indicates its significance in the framework of corporate accountability, where audit committees are expected to safeguard investors' interests

(Zanni & Terrell, 2002). The SC introduced the establishment of audit committees back in 1993. Since 1994, the BMLR have included that a listed company should appoint an audit committee that satisfies several requirements, including: the composition of not less than three members, with most of them being independent directors, with a minimum of one member with a membership of the Malaysian Institute of Accountants (MIA), or who has considerable experience in accounting and qualifications such that he/she can be considered by the Stock Exchange as 'financially literate'. Similarly, the 2007 enhancements to the MCCG (2000) mandate that the directors of the audit committee have to be non-executives, financially literate and as a minimum, one of these members must be associated with an accounting association.

The Bursa Malaysia Corporate Governance Guide (2009) defines the financial literacy of audit committee directors as the capability to read and understand financial statements, the capability to analyze financial statements and ask significant questions about the company's operations against internal controls and risk factors, and capability to recognize and understand the using of accepted standards of accounting. The MCGG (2009) further adds that the audit committee is also responsible to assess the suitability of the choice of management concerning accounting principles and corporate disclosures in adherence to the accepted accounting standards, revising the important or ambiguous operations and accounting assessments, analyzing whether the financial report truly projects a correct assessment of the financial position and performance of companies and finally guaranteeing the submission of financial statements by management in identified time, besides being in accordance with the regulatory requirements.

# **2.5 Summary and Conclusion**

This chapter discusses the background of Malaysian IPOs and corporate governance. The second section shows the overview of the Malaysian capital market. The third section discusses the IPO background, including regulatory structure, reporting framework, the reasons behind the listing in Bursa Malaysia, the features of Malaysian IPOs and listing process. Finally, Malaysian corporate governance is reviewed in the fourth section.

The following chapter provides a review of empirical studies on the accuracy of disclosed management earnings forecasts in IPO companies.

#### **CHAPTER THREE**

# REVIEW OF EMPIRICAL STUDIES ON THE ACCURACY OF MANAGEMENT EARNINGS FORECASTS IN IPOs

### **3.1 Introduction**

This chapter discusses and summarizes the previous studies on accuracy of earnings forecasts, included in the prospectuses of IPO companies. The review is divided into five sections. Section 3.2 presents the concept of earnings forecasts, and the reasons why making earnings forecasts should be accurate, and are important. Section 3.3 presents the related theories on the impact of audit committee on the management earnings forecasts in the context of IPOs. These theories include signaling theory, agency theory, and resource-dependence theory. Section 3.4 reviews the empirical studies on the accuracy of earnings forecasts. This section is divided into two parts. The first part reviews the literature available in non-East Asian countries, while the other part reviews the studies in East Asian countries. Section 3.5 presents a summary for the chapter.

#### **3.2 Earnings Forecasts**

#### **3.2.1 Earnings Forecasts Concept**

Management earnings forecasts characterize main voluntary disclosure methods by which management contributes to structuring or changing the expectations of market about the company earnings (Karim *et al.*, 2013). A forecast is generally defined by Sweeting (2001) as the representation of management's expectations concerning

events of the future that may or may not arise, and expected actions by management to these likely future events. Tanlu (2009) stated that financial forecasts are generally projections or estimates of future financial outcomes, including sales, earnings and expenses, which are aggregated and communicated either in the form of a budget or in prospectuses if a company wants to go public. An earnings forecast is defined by Aggarwal, Leal, and Hernandez (1993) as a cash flow, which incorporates an anticipation concerning the future earnings that should be earned. Ismail, Azis, and Mohamed (2005) also indicated that earnings forecasts are an estimate of future earnings made prior to the end of the accounting period. They further said that managers can use earnings forecasts as a tool to reveal private information. In other words, earnings forecasts are the process of using specific data to predict the future earnings of an IPO company.

#### **3.2.2 Why IPOs Make Earnings Forecasts?**

This section discusses the reasons for conducting earnings forecasts to be incorporated in the prospectuses of IPO and its tendency to help the prospective investors for IPO companies. The perceived importance and usefulness of IPO earnings forecasts in addition to the magnitude of the accuracy of these forecasts, provide further incentive for concentrating on forecast errors in the current study.

In order to ensure investors are treated fairly and obtain the same information, earnings forecasts must be disclosed to all potential users to make sure they all get equal access to the same prospective information (Clarkson *et al.*, 1992; Lee *et al.*, 1993; Sweeting, 2001; Chiyachantana & Hong, 2012). Additionally, historical

earnings disclosed in the prospectuses are not as valuable as the forecasts of management of subsequent year's earnings, thus resulting in a lack of information on IPOs (Firth, 1998; Cheng & Firth, 2000). Specifically therefore, earnings forecasts for an IPO company are most likely more significant compared to earnings forecasts made by a listed company that has a history of disclosures. Such disclosures may help the potential investors in terms of reducing the information asymmetry concerning the IPO company (Chiyachantana & Hong, 2012), decrease the litigation risk of companies as well as affect their reputation for reliable financial reporting (Sun & Xu, 2012).

Earnings forecasts are crucial for investment decisions. Studies, such as Firth (1998); Jaggi, Chin, Lin, and Lee (2006); and Karim *et al.* (2013) found that information regarding future forecasts of the company assists in making high-quality decisions. This is because IPO earnings forecasts have the power to impact investors as IPO companies are normally at early phases of corporate life cycles where they cannot attract as many analysts' following as already listed companies (Karim *et al.*, 2013). Given the above, investors frequently depend greatly on the prospectuses of IPO companies to obtain a sense concerning the quality of the offerings.

Firth, Li, and Wang (2008) posited that future earnings forecasts are vital to determine the price of a security. As for IPO valuation, Firth *et al.* (2008) said that financial information improves pricing accuracy of an IPO. The anticipated market value of an IPO company has been shown by Lam and Chang (1994) and Foerster *et al.* (2013) to be improved by the disclosure of earnings forecasts. Sweeting (2001) mentioned that IPO issuers can be assured of higher returns by providing optimistic earnings
forecasts, thus leading the IPO companies to become more attractive to investors and increasing share issue prices.

It is vital that earnings forecasts are accurate. Sweeting (2001) said that if there is too much reliance by investors on optimistic forecasts disclosed by the directors, it could result in the possibility of legal action being taken against the directors if the forecasts are not met. In Malaysia, if there is a deviation of  $\pm 10\%$  or more between the actual earnings reported in the first published annual report and disclosed earnings forecasts, justification for this deviation should be given, as well as the reconciliation made. Such deviations may also result in directors facing a loss of reputation (Clarkson *et al.,* 1992). Besides loss of reputation, a well-organized managerial labor market may penalize the manager's compensation if he/she is found to be associated with unfavorable forecast errors (Sweeting, 2001).

Another point to be noted is that companies with large forecast error between forecasted and actual earnings may face difficulties if they want to obtain additional finance from the market in the future (Clarkson *et al.*, 1992). Finally, Foerster *et al.* (2013) proposed that issuing more accurate management earnings forecasts is related to important benefits for the capital market. This indicates that the quality of information is a crucial determinant of both diversifiable risk and non-diversifiable systematic risk.

#### **3.3 Theoretical Background**

The main aim of this study is to examine the effect of audit committees on the earnings forecasts accuracy included in Malaysian IPO prospectus. Consequently, the question arises in this context is under what theories IPO companies do benefit from audit committees in enhancing the quality of disclosed earnings forecasts. In developing the theoretical framework for this study, the agency theory was employed as the underpinning theory to explain the relationships indicated in the framework. The studies of corporate governance were mostly conducted based on the perception of agency theory whereby companies utilized governance mechanisms to control the agency conflict in the companies (Fama & Jensen, 1983). Audit committee is an important tool of internal governance that established to meet this purpose.

Due to the nature of the variables included in the framework of this study, another two theories (signaling theory and resource-dependence theory) can be suitable to theoretically underlie the framework and support the agency theory. Based on the signaling theory, audit committee is considered as a credible signal that could be employed in the signaling strategy of the company in order to provide support for the monitoring role of the audit committee directors, as proposed by the agency theory (Bédard *et al.*, 2008). Furthermore, based on the resource-dependence theory, the directors on the audit committee are representing a signal of existing important and critical resources to this committee (Pfeffer & Salancik, 1978), which may support the audit committee to undertake its monitoring and aligning responsibility as suggested by the agency theory. A brief explanation of these theories employed in this study and how it can be utilized to interpret the relationships between the variables is presented below.

### 3.3.1 Agency Theory

Scholars have used the agency theory in many academic areas, such as accounting, economics, finance, marketing, political science and sociology (Clarke, 2004), to describe the relationships within organizations. The main basis for this theory is that directors who are classified as a non-executive on the boards of directors are required to oversee and manage the activities of executive directors as a result of their opportunistic behavior (Jensen & Mcckling, 1976; Fama & Jensen, 1983). This opportunistic behavior, whereby managers may act in their own interests to maximize their personal wealth because they have personal goals that compete with those of shareholders (Davidson, Goodwin-Stewart, & Kent, 2005), can cause problems of information asymmetry, leading to agency problems: moral hazard and adverse selection (Firth, Gounopoulos, & Pulm, 2012).

The agency theory is considered a comparatively new expansion in earnings forecasts disclosure research. Agency theory can clarify the issuance of voluntary disclosures in IPO prospectuses (Gazavan-Jeny & Jeanjean, 2007). Ruland, Tung, and George (1990) investigated the utilizing of earnings forecasts to mitigate agency costs. They argued that the issues of adverse selection and moral hazard can be alleviated by public disclosures of earnings forecasts, which in turn can assist the offerings of new capital. They showed that companies issue high earnings forecasts when they increase their new capital through few retained shares by pre-IPO shareholders. In countries where the risk of legal action is low, the incentive to release earnings forecasts should be high (La Porta, Silanes, & Shleifer, 1999), thus leading to a higher level of disclosure. Agency theory posits that the forming of an audit committee is a mechanism to alleviate the issues of information asymmetry, and managerial

opportunism, and to develop the quality of financial disclosure (Chung *et al.*, 2004). It also states that audit committees that monitor their boards more can mitigate agency costs (Chung *et al.*, 2004).

#### **3.3.2 Signaling Theory**

Signaling theory means that companies will employ observable signals in order to increase their reputation and status (Miller & Triana, 2009). When the management of a company has made the decision to raise capital externally by using IPO to finance an investment project, it is likely that they will have exclusive access over information concerning the expected future returns of that project, compared to other potential investors (Chan, Sit, Tong, Wong, & Chan, 1996). Signaling theory suggests that companies utilize reliable signals to construct their prestige in the market with information asymmetry. For instance, when a market experiences severe information asymmetry, companies possibly will voluntarily employ reputable auditors, retain share ownership (in an IPO setting), and accounting strategies (Habib & Hossain, 2013). Verrecchia (1983) assumed that earnings forecasts include signaling power because by disclosing the forecasts, directors will reveal private information to investors who are less informed. This attempt to lessen information asymmetry problems that exist between the potential investors and company directors will be viewed positively by those investors and can be explained as a positive signal of the value of the company (Gounopoulos, 2003). Firth (1998) suggested that earnings forecasts can be regarded as a very vital signal of value of a company.

Trueman (1986) indicated that, signaling theory can give an explanation for the reasons behind issuing the earnings forecasts. This theory proposes that companies that have 'good news' are expected to issue their forecasts concerning future earnings so as to distinguish themselves from companies that have 'bad news'. Hughes (1986) indicated that companies should provide investors by reliable disclosure since it is supposed that the companies will be punished if the disclosure included in their noticeable cash flow was fraudulent. Both studies indicate that due to information asymmetry, management has motivation to signal the value of the company, using forecasts of future earnings, in order to distinguish their IPO from the IPOs of companies of lower quality. In addition, the companies can minimize agency and signaling costs by including earnings forecasts in their prospectuses (Gazavan-Jeny & Jeanjean, 2007).

Management that is accountable for IPO offering is able to decide on combining signaling mechanisms, which can maximize the anticipated offer proceeds (i.e., net of offering as well as signaling costs). The boards of directors and audit committee are also signals, which could be utilized by the existing management to deliver information concerning the value of the company. Bédard *et al.* (2008) mentioned that the prevailing theoretical point of views on the responsibility of the boards of directors propose several approaches by which board attributes may comprise reliable signals.

#### **3.3.3 Resource-Dependence Theory**

The resource-dependence theory states that the main responsibility of the directors is to help the management of the company to make high-quality strategic and good decisions. In addition, the directors assist in securing critical resources needed by the company, since they have connections or links to the external environment (Pfeffer & Salancik, 1978; Hillman, Canella, & Paetzold, 2000; Bédard et al., 2008; Abdullah & Valentine, 2009). Pfeffer and Salancik (1978) suggested four crucial advantages for the external linkages: (1) providing the resources, such as information as well as knowledge; (2) establishment of means of contact with elements which are important to the company; (3) commitment of support from key organizations or groups available in the external environment; and (4) establishment of legitimacy for the company in the external environment. Pearce and Zahra (1992) indicated that the directors on the audit committee is considered a signal of existing resource to this committee. From the resource-based aspect, bigger boards and non-executive directors avail the company with a bigger group of resources, which are in turn related to greater levels of company performance (e.g., Alexander, Fennell, & Halpern, 1993; Goodstein, Gautam, & Boeker, 1994). Hillman et al. (2000) indicated that information, skills, reaching to main elements such as buyers, social groups, public policy makers, suppliers and legitimacy can be brought in by the directors to the company.

From the aspect of an IPO, the resource-dependence theory proposes that nonexecutive directors can give a company an additional negotiating ability in its association with the underwriters and potential investors, hence allowing shareholders of companies to get a greater value when determining the opening price (Certo, Daily, & Dalton, 2001; Filatotchev & Bishop, 2002). Investors may recognize the advantages of the wide group of resources; thus, when the board is large, they require a lesser level of underpricing (Certo *et al.*, 2001).

#### 3.4 Empirical Studies on the Accuracy of IPO Management Earnings Forecasts

Although there are significant effects of earnings forecasts made by management on the investors' decisions, the empirical literature on this issue in IPO prospectuses is considered as very limited. This is partly due to the strict laws and rules in some countries, such as the US, that render disclosure of management earnings forecasts in prospectuses rare (Jaggi, 1997). In addition, Jelic *et al.* (1998) indicated that in some countries, the management may entail costly risks, including legal costs as a result of inaccurate forecasts and 'reputation' costs if management is viewed as unreliable. Further, management earnings forecasts are not mandatory in the UK, Australia, Canada and Hong Kong, and no longer mandatory in China, Greece and Malaysia. Most previous studies on IPO earnings forecasts quality employ data from countries, such as the UK, Hong Kong, Australia, Malaysia, Singapore, New Zealand and China, all of which are Commonwealth countries (Jelic *et al.*, 1998; Ismail *et al.*, 2005; Karim *et al.*, 2013).

This section is divided into two parts. The first part presents the prior studies carried out in non-East Asian countries on the disclosure accuracy of earnings forecasts, while the second part reviews the prior studies done in East Asian countries. The distinction between non-East Asian and East Asian countries is based on the following reasons. First, the period encompassed in some reviewed studies in East Asian countries includes the East Asian financial crisis, a period of substantial economic stress that decreased confidence in the capital markets. Second, the information asymmetry between IPO management and expected investors are main uncertainties facing investors when deciding to invest in IPOs. These uncertainties are especially noticeable in transitional economies (e.g. Hong Kong, Malaysia, China, and Singapore) (Chen & Firth, 1999). Third, companies in East Asian countries are often controlled by a single shareholder and her or his family (Lonkani & Firth, 2005). Finally, this basis of distinction make the comparison of results more useful.

# 3.4.1 Empirical Studies on the Accuracy of IPO Management Earnings Forecasts in non-East Asian Countries

The accuracy of IPO earnings forecasts has been investigated in Australia (e.g., Lee *et al.*, 1993; Hartnett & Römcke, 2000; Henry *et al.*, 2002; Chapple, Clarkson, & Peters, 2005; Gallery, Gallery, & Linus, 2011; Firth *et al.*, 2012; Rugdee, Singh, & Heaney, 2014), Canada (e.g., Pedwell *et al.*, 1994; McConomy, 1998; Clarkson, 2000), France (e.g., Mnif, 2010), New Zealand (e.g., Firth & Smith, 1992; Hsu, Hay, & Weil, 2000), Jordan (e.g., El-Rajabi & Gunasekaran, 2006), Bangladesh (Karim *et al.*, 2013), and the UK (Keasey & McGuiness, 1991).

In Australia, Lee *et al.* (1993) found that the mean absolute forecast error is 1138.3%, which is considered very high. Their results indicate that earnings forecasts of Australian IPOs are highly inaccurate and the average forecast error seems to be impacted by the negative forecast errors that include excessive figures. In addition, they reported average forecast error of 994.4%, which means that the earnings forecasts are excessively optimistic. They argued that although the above results are

inconclusive, it could be that earnings forecast errors were higher throughout the time of growing IPO activity (1985 to 1987). Their findings also show the influence of rising competition for funds in the capital market, leading to issuers having greater motivations to offer biased and/or less reliable earnings forecasts. In the same context, Hartnett and Römcke (2000) showed that revenue forecasts are found to be related to higher accuracy than earnings forecasts. They also found that 60% of these revenue forecasts and 40% of earnings forecasts are within 10% of the actual findings. They argued that it is rational since revenue is only one constituent of earnings forecasts. The mean earnings forecast errors for the sample selected is -30.35%, while the mean of absolute earnings forecasts compared to Lee *et al.* (1993).

Henry *et al.* (2002) found that the mean forecast errors are around -13.20%. They also showed that there are large deviations of forecast errors as reported by the standard deviation of 71.35%. In general, this means that management earnings forecasts are overstated relative to realized performance. They concluded that the trend for IPOs to over-forecast earnings included in prospectuses is in accordance with the majority of other studies concerning the earnings forecasts accuracy (e.g., Lee *et al.*, 1993).

In Australia also, How and Yeo (2001) reported that 19.49% of the total 158 samples go above their earnings and dividend forecasts, while 11.86% fail to live up to both forecasts. Their findings indicate that the average forecast error and absolute earnings (dividend) forecast errors are -1.19% (-0.39%) and 5.95% (1.21%), respectively. Regardless of how forecast errors are computed, the results show that dividend forecasts are found to be related to higher accuracy and less bias than earnings forecasts. This reflects in part the conservatism of corporate dividend policy and the substantially greater discretion that management undertakes over the total of dividends, which should be distributed to shareholders (Brown, Clarke, How, & Lim, 2000).

For the overall 310 Australian samples, Chapple *et al.* (2005) showed that earnings forecasts are disclosed in 69.03% of the prospectuses (214 IPO companies). Regarding the 214 forecasters, their findings show that the average absolute forecast errors is 406.2%, and the average forecast error is 373.7%. Thus, compared to prior Australian studies (e.g., How & Yeo, 2001; Henry *et al.*, 2002), their overall sample presents a significant over-optimistic bias. Gallery *et al.* (2011) examined the impacts of improvements to the regulations of Australian corporate fund-raising and promulgation of the listing regulations on the disclosures of the earnings forecasts in Australian IPO companies. They found that the average prospectus forecast error and absolute forecast error are 15.6% and 37.5%, respectively. These results are considered to be better than 267.9% for forecast error and 296.7% for absolute forecast error for the whole sample before applying the new regulation. Their results indicate that the forecast accuracy improved significantly after regulatory changes.

Firth *et al.* (2012) revealed that the mean forecast error is 1.11%. This is an indication that managers are under-forecasting actual earnings. The mean earnings forecast error is substantially lower than the figure reported by Lee *et al.* (1993), Hartnett and Römcke (2000), Chapple *et al.* (2005) and Gallery *et al.* (2011). This indicates a general reduction in the forecast bias of Australian IPOs over time. Their results on the accuracy of earnings forecasts show a mean absolute forecast error of 34.49%,

which is also lower than previously indicated by Lee *et al.* (1993) and Gallery *et al.* (2011). The authors attributed this improvement to market pressures and the threat of penalties from the Australian Regulatory Authorities for making inaccurate forecasts. Finally, in a more recent study, by employing 192 Australian IPOs, Rugdee *et al.* (2014) reported that the average absolute forecast error for the whole sample is 15%.

In New Zealand, the study of Firth and Smith (1992) indicated that the mean forecast error is about -92%. This suggests that these disclosed forecasts are considered excessively optimistic. They also found the mean absolute forecast error of these forecasts is around 328%, representing that the forecast errors are also very high. They argued that the poor earnings forecast accuracy of prospectuses may be because New Zealand companies are being obliged to make forecasts even though many would rather abstain from forecasting. Moreover, Firth (1997) showed that the mean forecast errors are -91%, where the negative sign reveals that actual earnings are less than forecasts. The mean absolute forecast error is at 11.10%. His results are comparable to those indicated by Firth and Smith (1992). The study of Hsu *et al.* (2000) showed that accuracy has developed in New Zealand with average absolute forecast error of 76%. Their result of absolute forecast error is smaller than the forecast error reported by Firth and Smith (1992). They attributed increased accuracy and reduced bias to changes in the environment, particularly to the more buoyant economy during the period of their study.

In an earlier study in the UK, Keasey and McGuiness (1991) showed that the disclosure of earnings forecasts depends on the competitive situation of companies compared to other players. From the whole sample, positive errors have been found

with 109 forecasts relative to only 12 forecasters with negative errors. They reported that the mean forecast error and absolute forecast error are only 5% and 11%, respectively. This suggests that the earnings forecasts issued in their sample prospectus can be considered as relatively accurate.

In Bangladesh, Karim *et al.* (2013) examined the accuracy and bias of 75 IPOs over the period 1990 to 2006. Their findings revealed that the mean forecast bias and accuracy of the sample are -48% and 56%, respectively. In Canada, Clarkson *et al.* (1992) revealed that when the Canadian IPO companies think that the earnings forecasts would help the developing of market expectations, they include those forecasts in their prospectuses. Pedwell *et al.* (1994) examined 112 Canadian IPOs during the period 1983 to 1987. Their results show that IPO forecasts, typically, surpass the actual earnings with the average absolute error of 88%, and mean forecast errors of -77.7%. They concluded that the findings are more narrowly dispersed, and are inclined to be much more optimistic, since 76% of the companies over-forecast their earnings. Moreover, in the Canadian context, McConomy (1998) reported optimistic bias in the forecasts, with the mean earnings forecasts being around 6% higher than the actual earnings. McConomy's findings suggest that the introduction of a new audit requirement in 1989 during the period of study (1983-1994) successfully curbed the overly optimistic forecasting behavior of management.

Clarkson (2000) investigated the association between accuracy of forecast and quality of auditor for the audit-level and review-level systems<sup>6</sup>. The review-level sample

<sup>&</sup>lt;sup>6</sup> For the review-level assurance system, accountants' comments are associated with the forecasts disclosed in the issued prospectus. For the audit-level assurance system, auditors' reports are associated with those financial forecasts.

reported average forecast error of 68.5% compared to only 9.9% for the audit-level assurance sample. Their result also indicated that the review-level sample shows mean absolute forecast error of 89.3% relative to only 23.1% for the audit-level assurance sample. This means there has been an improvement in forecast accuracy and a reduction in forecast bias related to the modification in rules from review-level to audit-level assurance. Clarkson's results confirm the results of McConomy (1998).

Gounopoulos (2003) investigated a sample consisting of 208 IPOs from the Athens Stock Exchange over the years 1994 to 2001. His findings show that the average forecast error for the sample is 8.04%, while absolute forecast error is 42.82%. His result is in line with previous evidence (e.g., Lee *et al.*, 1993; Pedwell *et al.*, 1994), which show that when making forecasts with IPO companies, managers are in general over-optimistic and usually fail to realize the goals of earnings forecasts in their first year of operation. He claimed that the reason for such finding is that managers attempt to maintain the companies' reputation from any damage as a consequence of the disappointment of the investors after realizing the actual earnings.

In the Danish IPO market where it is voluntary for management to issue earnings forecasts, Gramlich and Sorensen (2004) investigated a sample of 58 IPOs over the years 1984 to 1996. Their results report a forecast error by -3.7%. Their results show that the earnings forecasts are optimistically biased indicating that Danish companies over-forecast their earnings. Further, their results are in line with the optimistic findings of Pedwell *et al.* (1994) in Canada; Firth (1997) in New Zealand; and Henry *et al.* (2002) in Australia.

In Jordan, El-Rajabi and Gunasekaran (2006) studied 41 IPOs issuing earnings forecasts in their prospectuses from 1992 to 1996. They show that the mean error of earnings forecasts is -147.2%, and the mean absolute error of earnings forecast accuracy is 163.4%. Their results show that inaccurate and optimistic bias earnings forecasts are disclosed in the prospectuses of IPOs in Jordan. This is to get the attention of investors to purchase shares. The errors in their result are higher than those reported by Hartnett and Römcke (2000); and Henry *et al.* (2002), but they are comparable to what was documented by Firth and Smith (1992).

For the French IPO market, Mnif (2010) examined the effect of some tools of corporate governance on the quality of financial disclosure in the prospectuses of IPO companies. His study utilized a sample of 117 French IPOs. He reported that the average of forecast error is -13.85%. His result shows that French IPO companies slightly report optimistic earnings. Furthermore, Mnif showed that the earnings forecast errors for 80 forecasters are negative and are therefore considered optimistic forecasts; and 37 are positive and thus are considered pessimistic forecasts. Consequently, the optimistic management is found to be significantly more than pessimistic management. Finally, Mnif's finding also show that the absolute forecast error is equal to 27.34%, i.e., the accuracy of French IPO earnings forecasts is higher than what has been reported in Jordan (El-Rajabi & Gunasekaran, 2006); in Greece (Gounopoulos, 2003); and in New Zealand (Firth & Smith, 1992).

In Iran, Garkaz (2010) examined 135 selected companies as a sample from the Tehran equity market from 2002 to 2006. Garkaz's results show that the mean absolute earnings forecasts is 30.4%, i.e., the Iranian earnings forecast accuracy is less accurate

than French IPOs (Mnif, 2010) but higher than the accuracy of Jordanian IPOs (El-Rajabi & Gunasekaran, 2006). In their study on 506 IPOs of South Africa, Mbuthia and Ward (2003) found that mean percentage forecast error is statistically significant at around 14.3%. They revealed that on average, earnings forecasts for listing on the Johannesburg Securities Exchange are under-forecasted by 14.3%.

Finally, Jaggi *et al.* (2006) indicated that the US IPO companies commonly do not disclose information about earnings forecasts, but it has been found that after the IPO period and based on voluntary disclosure, some of these companies issue earnings forecasts. There are some studies that have been carried out to investigate the issue of earnings forecast quality in the US IPO companies. Kasznik (1999) reported that the forecasts issuing companies commonly practice earnings manipulation to decrease the forecast errors. Further, Jaggi and Sannella (1995) found that the management would select the best accounting approach that leads to decreasing the forecast errors. The results of studies (e.g., Skinner, 1994; Teoh, Welch, & Wong, 1998; Baginski, Hassell, & Kimbrough, 2002; Frankel, Johnson, & Nelson, 2002) conducted on the US market show that the incentive for mitigating the forecast error is usually to be safe from costs related to likely legislation risk by investors, if the reported earnings do not live up to the forecasted earnings.

In conclusion, the review of previous literature shows that the disclosing of earnings forecasts in prospectuses, particularly by the UK, Canadian, Australian and French IPO companies on a voluntary basis are found to be inaccurate and optimistically biased, i.e., most managers over-forecast their future earnings performance. The evidence of the accuracy of management earnings reveals absolute forecast errors from as low as 5.95% for Australia by How and Yeo (2001) to a massive 1,138% indicated by Lee *et al.* (1993) for Australia as well. The low accurate forecasts of management are attributed in part to: (1) lack of the essential knowledge and experience to predict the influence of going public on the company's performance; and (2) a motivation to report optimistic forecasts in order to increase the attractiveness of the offerings (Brown *et al.*, 2000). A summary of related prior studies on the accuracy of earnings forecasts disclosed in IPO prospectuses is shown in Table 3.1.

# 3.4.2 Empirical Studies on the Accuracy of IPO Management Earnings Forecasts in East Asian Countries

In East Asian countries, the accuracy of IPO earnings forecasts has been studied in Hong Kong (e.g., Chan *et al.*, 1996; Jaggi, 1997; Cheng & Firth, 2000; Chen, Firth, & Krishnan, 2001; McGuinness, 2005; Wang, 2010), China (e.g., Chen & Firth, 1999; Sun & Liu, 2009), Singapore (e.g., Chong & Ho, 2007), Thailand (e.g., Lonkani & Firth, 2005), and Malaysia (e.g., Mohammad *et al.*, 1994; Jelic *et al.*, 1998; Yau & Chun, 1999; Hussin *et al.*, 2004; Ismail & Weetman, 2007; Ahmad-Zaluki & Wan-Hussin, 2010).

Hong Kong has received the attention of researchers to study the accuracy of its IPOs earnings forecasts. While in Hong Kong, it is not mandatory for IPO companies to issue earnings forecasts in the prospectuses, a great percentage of these IPO companies publish their earnings forecasts information (Chen *et al.*, 2001).

Study	Country	Period	Sample Size of IPOs	Forecast Error (%)	Absolute Forecast Error (%)
Lee et al. (1993)	Australia	1976-1989	98	994.40	1138.30
Henry et al. (2002)	Australia	1994-1998	70	-13.20	-
How and Yeo (2001)	Australia	1991-1997	158	-1.19	5.95
Chapple et al. (2005)	Australia	1998-2002	310	373.70	406.20
Gallery et al. (2011)	Australia	1998-2003	285	15.60	37.50
Firth et al. (2012)	Australia	2001-2009	221	1.11	34.49
Rugdee et al. (2014)	Australia	2003-2011	192	-	15%
Firth and Smith (1992)	New	1983-1986	89	-92.00	328.00
	Zealand				
Firth (1997)	New	1979-1987	143	-91.00	11.10
	Zealand				
Hsu et al. (2000)	New	1987-1994	67	-37.10	76.00
	Zealand				
Keasey and McGuiness	UK	1984-1986	121	5.00	11.00
(1991)					
Karim et al. (2013)	Bangladesh	1990-2006	75	-48	56
Pedwell et al. (1994)	Canada	1983-1987	112	-77.70	88.00
McConomy (1998)	Canada	1983-1994	192	6.00	-
Clarkson (2000)	Canada	1992-1995	81	9.90	23.10
Gounopoulos (2003)	Greece	1994-2001	208	8.04	42.82
Gramlich and Sorensen	Denmark	1984-1996	58	-3.70	-
(2004)					
El-Rajabi and	Jordan	1992-1996	41	-147.20	163.40
Gunasekaran (2006)					
Mnif (2010)	France	2000-2004	117	-13.85	27.34
Garkaz (2010)	Iran	2002-2006	135	-	30.40
Mbuthia and Ward	South Africa	1980-1998	506	14.30	-
(2003)					

Table 3.1A Summary of Selected Prior Studies from non-East Asian Countries on the Accuracyof Management Earnings Forecasts of IPO Prospectuses

Chan *et al.* (1996) examined the earnings forecasts accuracy of 110 IPO companies over the period 1990-1992. They found that the sample displayed high forecast accuracy with a mean absolute forecast error of 18%; and 60% of this sample has forecast errors within a deviation of  $\pm 8\%$ . Their findings are similar to the results of Keasay and McGuinness (1991). They reported some potential explanations for their results. First, the accountant motivation of preserving the reputation through forecasted earnings. Second, accurate earnings forecasts will attract the investors to continue investing in the company.

Further, Jaggi (1997) revealed that unlike IPO earnings forecasts issued in many other countries, the Hong Kong IPOs managements do not over-forecast their earnings, which means they have been conservative in issuing forecasts information by forecast error of 6.5%. Jaggi's results indicate more accurate earnings forecasts with absolute earnings error of 12.79% compared to 18% reported by Chan et al. (1996). Moreover, the results show that the IPOs in Hong Kong issue more accurate forecasts compared to Australian and New Zealand earnings forecasts. However, it is considered slightly lower than the accuracy of forecasts of IPOs of UK companies. Accordingly, Jaggi indicated that the Stock Exchange of Hong Kong should motivate IPO companies to release earnings forecasts in their prospectuses. In the same institutional context, Cheng and Firth (2000) reported that both earnings forecasts error and absolute forecast error are about 9.89%. Their results show higher accurate earnings forecasts than the examined forecasts in the UK, New Zealand and Hong Kong IPO studies. The study of Chen et al. (2001) showed that the level of accuracy is low relative to previous studies on the IPO market of Hong Kong as the absolute value of the forecast error is equal to 21.96%, while it equals 12.79% and 9.89% in the studies of Jaggi (1997) and Cheng and Firth (2000), respectively. Regarding the average of forecast error, it is found to be 9.94%, which means that IPO managers under-forecast their earnings.

In addition, McGuinness (2005) found that the mean absolute earnings forecast error is about 7.26% for IPOs earnings forecasts during 2002–2003. McGuinness' results appear at a lower level of errors than what has been reported in previous studies related to IPO prospectus forecasts of Hong Kong (Chan *et al.*, 1996; Jaggi, 1997; Cheng & Firth, 2000; Chen *et al.*, 2001). McGuinness indicated that one of the potential explanations for this finding is the improvements in the environmental regulation concerning the IPOs in Hong Kong in the early 1990s. Finally, Wang (2010) revealed that out of 256 samples, only 172 IPOs forecasted their earnings in the prospectus and 84 IPOs did not. Wang also found that the mean forecast error is about 5.4%, indicating that the forecasted earnings are slightly lower than the actual earnings, on average. The absolute forecast error is about 10%, which is relatively close to the preceding results of Cheng and Firth (2000).

Focusing on studies conducted in China, the association between earnings forecasts and Chinese IPOs valuation was done by Chen and Firth (1999). Their study utilized 447 IPOs over the years 1991-1996. The results show that the average forecast error is 23.24%, while the average absolute forecast error is 43.09%. Their results indicate that earnings forecasts are fairly accurate. The average absolute forecast errors are significant and greater than those indicated in Hong Kong (e.g., Chan *et al.*, 1996; Jaggi, 1997). On the other hand, absolute forecast errors are lower than or comparable to those indicated in Australia, New Zealand and Canada. Besides that, Sun and Liu (2009) reported that while an average forecast error is 0.45%, absolute forecast error is 15.28%. Their findings show improvement in Chinese IPO forecasts compared to the study by Chen and Firth (1999). Further, their results proposed that relative to forecast errors in other countries, forecasts errors of Chinese IPOs are considered moderate. For example, the mean absolute forecast error is 163.4% for Jordanian forecasts (El-Rajabi & Gunasekaran, 2006); 328% for New Zealand forecasts (Firth & Smith, 1992); 88% for Canadian forecasts (Pedwell et al., 1994); 406.2% for Australian forecasts (Chapple et al., 2005); 11% for British forecasts (Keasey & McGiness, 1991); and 18% for Hong Kong forecasts (Chan et al., 1996). Also, Sun and Liu (2009) examined the changes in the credibility of Chinese IPO earnings forecasts after publishing the regulation No. 12-1996<sup>7</sup>. They showed that the average forecast error is 1.60%, after the end of 1996, compared to -1.55% before the end of 1996. In addition, they reported that the mean absolute forecast error is about 16.72% before the end of 1996 compared to 14.46% after the end of 1996. This means that after the new regulation, earnings forecasts have become more accurate and less optimistic.

In Singapore, Chong and Ho (2007) revealed that earnings forecasts disclosed by Singapore IPO companies are commonly, moderately conservative with mean forecast errors of -6.1%. They said that IPO companies, on the whole, do not exaggerate earnings forecasts because the lockup agreement removes personal incentives towards the issuance of aggressive forecasts. In addition, managers and companies may be

<sup>&</sup>lt;sup>7</sup> This new regulation imposes penalties on companies, which significantly over-forecast their IPO earnings included in their prospectuses and mandates that IPO companies and their auditors must clarify and make an apology to the public in a Chinese Securities Regulatory Commission selected newspaper if earnings are over-forecasted by 10–20% relative to actual reported earnings.

more worried about their reputations. In Singapore, litigation against companies will be brought about if it is found that the earnings forecasts have been exposed as fraudulent. In the event of a legal suit, bad publicity is created for the companies which could influence their capability in the future to raise capital.

For Thailand, Lonkani and Firth (2005) found that the mean earnings error is about -6.86%, i.e., the earnings forecasts of Thai IPOs are optimistic, where the actual reported earnings are less than forecasted earnings. Contrary to this result, mean forecast errors in Hong Kong (Cheng & Firth, 2000) and China (Chen & Firth, 1999) are positive and therefore are characteristic of pessimistic forecasts. The mean absolute forecast error is 35.76%. Obviously, this percentage of accuracy is similar to those revealed in other East Asian countries.

Regarding IPO studies in Taiwan, Jaggi *et al.* (2006) showed that after the new regulations of disclosure were imposed, Taiwan IPO companies disclosed high optimistic forecasts compared to conservative forecasts<sup>8</sup>. They showed that after reforming the regulation, it took an eight-year period to boost the forecasts error threshold to 20%. Although these results illustrate that more optimistic forecasts have been issued by the management after the regulation modification, the reported earnings have been exposed to manipulation in order to live up to the forecasts error threshold. In turn, this will decrease the quality of earnings information. Based on their result, it is proposed that the reforms of regulation have not accomplished the

<sup>&</sup>lt;sup>8</sup> The Taiwan Securities, in 1991, imposed a regulation, which requires the IPO companies to issue annual earnings forecasts in their prospectuses as well as publish forecasts for two years following IPOs.

purpose of supporting the value of reported and disclosed earnings for making decisions concerning the investment due to the fraudulent reported earnings.

Reviewing the Malaysian studies, a number of 65 Malaysian IPOs were investigated by Mohamad et al. (1994) over the years 1975 to 1988. Their findings show that the average forecast error is about 9.34%. Their results propose that Malaysian IPO managers under-forecast their future earnings. Furthermore, Jelic et al. (1998) reported that earnings forecasts are under-forecasted on average by 33.37% and the mean absolute forecast error is 54.91%. The study of Jelic et al. (1998) is consistent with Mohamad et al. (1994) but proposes smaller credibility. They proposed that Malaysian IPO managers are typically unbiased and careful forecasters. They attributed this to the strict regulation of IPOs in Malaysia, as well as to the fact that actual reported earnings may not necessarily be independent of forecasted earnings, in that the managers can impact these reported earnings through the decisions of investment and accounting procedures. The findings of Yau and Chun (1999) indicate that the mean absolute forecast error is about 21.56%, while the mean forecast error is 1.74%. Further, they reported that around 59.5% of the 111 IPOs include earnings forecast errors within the acceptable tolerance level of  $\pm 10\%$  error ranges. They argued that the tendency of management to be conservative in their earnings forecasts can be attributed to the perceived asymmetric costs related to over- and underforecasts.

Hussin *et al.* (2004) found that the mean forecast error is 2.1%, i.e., the actual documented earnings are greater than forecasted. Also, they showed that out of the total sample of 119 Malaysian IPOs, there are 49 IPO companies, where their

forecasts deviations lay within the tolerance level of  $\pm 10\%$ . Generally, the results reveal that there is a tendency for new IPOs to under-forecast their earnings in the prospectus, which is in accordance with the previous results of studies conducted in Malaysia (e.g., Mohammed *et al.*, 1994; Jelic *et al.*, 1998; Yau & Chun, 1999). However, the findings of their study contradict studies conducted in New Zealand (Firth & Smith, 1992); Australia (Hartnett & Römcke, 2000); and Canada (Pedwell *et al.*, 1994), where the management tends to over-forecast the earnings, leading to negative forecast error.

Ismail and Weetman (2007) investigated the influence of change in regulation and economic conditions on the accuracy of earnings forecasts<sup>9</sup>. They found that 59 IPOs out of the total sample of 166 IPOs reported earnings above their forecasts in the prospectuses, whereas 107 companies reported earnings less than forecasted. They indicated that while the economic condition is shown to be significantly related to the accuracy of forecasts, the regulation has insignificant effect. Further, they found absolute forecast error during recovery period to be moderately comparable to that during the period of crisis. They explained that there is continued unpredicted instability in the economy throughout the period of recovery, caused mainly by the failures of high technology companies. They concluded that for the regulation to be an effective strategy in improving the accuracy of earnings forecasts, the economic conditions have to be considered.

<sup>&</sup>lt;sup>9</sup> As highlighted earlier, starting on 1 January 1996, new regulation has been implemented on Malaysian IPOs in construction, services and specialized industries. The IPO companies under this regulation were mandated to choose either a moratorium to be forced on disposal of their shares in the candidate company or to offer an earnings guarantee of 90% of the forecast earnings as declared in the prospectus. In mid-1997, Malaysia faced economic crisis due to the Asian crisis caused by the fall of the Thai baht in July 1997. This affected Bursa Malaysia in terms of market capitalization. It decreased by 25.2 % from 725.38bn ringgit in July 1997 to 542.73bn ringgit in August 1997 (Ismail & Weetman, 2007).

Ahmad-Zaluki and Wan-Hussin (2010) examined a sample of 235 IPO companies that were issued over the years 1999 to 2006. Their findings indicate that the mean forecast error is -3.50% and the mean absolute forecast error is 23.76%. They attributed this result of over-forecast in earnings to the economic conditions of their utilized sample period (1999-2006), which was the time of recovery of the economic crisis experienced in 1997 and 1998. This result is inconsistent with the results of earlier research (e.g., Mohamad et al., 1994; Jelic et al., 1998) which reported the average forecast errors of positive 9.34% and 33.37%, respectively. Additionally, absolute forecast error indicated in their investigation is considered to be lesser than the absolute forecast error indicated in Jelic et al. (1998) and Mohamad et al. (1994), meaning that there is some improvement in the accuracy of earnings forecasts during the period 1999 to 2006. Earnings forecasts accuracy of prospectuses in Ahmad-Zaluki and Wan-Hussin (2010) compares favorably with the findings documented in similar studies for Thailand (Lonkani & Firth, 2005); Hong Kong (Chen et al., 2001); Canada (Clarkson, 2000); and France (Mnif, 2010). Of particular interest is the comparison of their results with China (Chen & Firth, 1999) with absolute forecast errors of 43.09%, where providing earnings forecasts in their prospectuses is an obligatory requirement. Finally, the most recent study in Malaysia was conducted by Ibrahim and Ismail (2012) who found a negative mean forecast error of 7.29%.

In summary, studies on East Asian IPO markets have indicated comparatively small forecast errors and have reported inconclusive results regarding the accuracy and reliability of IPO forecasts. Chan *et al.* (1996) and Jaggi (1997) documented average absolute forecast error for Hong Kong IPOs market to be 18% and 12.79%, respectively, indicating high forecast accuracy. In addition, in China, Sun and Liu

(2009) found moderately high accurate earnings forecasts. Mixed results are reported in the Malaysian IPO market. While Mohamad *et al.* (1994), Yau and Chun (1999), and Ahmad-Zaluki and Wan-Hussin (2010) reported low to moderate forecast errors, the study of Jelic *et al.* (1998) reported to some extent higher errors. A summary of related prior studies on the earnings forecasts accuracy disclosed in East Asian IPO prospectuses is shown in Table 3.2.

Table 3.2

A Summary of Selected Prior Studies from East Asian Countries on the Accuracy of Management Earnings Forecasts of IPO Prospectuses

Study	Country	Period	Sample	Forecast	Absolute
			Size of	Error	Forecast
			IPOs	(%)	Error (%)
Chan et al. (1996)	Hong Kong	1990-1992	110	-	18.00
Jaggi (1997)	Hong Kong	1990-1994	160	6.50	12.79
Cheng and Firth (2000)	Hong Kong	1992-1995	154	9.89	9.89
Chen et al. (2001)	Hong Kong	1993-1996	162	9.94	21.96
McGuinness (2005)	Hong Kong	2002-2003	82	-	7.26
Wang (2010)	Hong Kong	2000-2006	256	5.40	10.00
Chen and Firth (1999)	China	1991-1996	447	23.24	43.09
Sun and Liu (2009)	China	1991-2005	858	0.45	15.28
Chong and Ho (2007)	Singapore	1990-2000	114	-6.10	-
Lonkani and Firth (2005)	Thailand	1991-1996	175	-6.86	35.76
Mohamad et al. (1994)	Malaysia	1975-1988	65	9.34	28.00
Jelic et al. (1998)	Malaysia	1984-1995	122	33.37	54.91
Yau and Chun (1999)	Malaysia	1985-1992	111	1.74	21.56
Hussin et al. (2004)	Malaysia	1999-2002	119	2.10	-
Ahmad-Zaluki and Wan-	Malaysia	1999-2006	235	-3.50	23.76
Hussin (2010)					
Ibrahim and Ismail	Malaysia	2004-2008	94	-7.29	-
(2012)					

#### **3.5 Summary and Conclusion**

This chapter reviews the theories and literature on the accuracy of earnings forecasts disclosed in IPO prospectuses. The review begins with a discussion on the concept of earnings forecasts and arguments for undertaking earnings forecasts, which tend to favor the users of such information, like investors and analysts. The theories related to this study are reviewed. These theories include agency theory, signaling theory and resource-dependence theory.

Literature about accuracy of earnings forecasts in non-East Asian countries and East Asian countries are further reviewed in this chapter. After reviewing this literature, several notes are highlighted. More specifically, previous studies on earnings forecasts in IPO prospectuses are limited and have been concentrated in Commonwealth countries, such as the UK, Hong Kong, New Zealand, Singapore and Malaysia. Moreover, there are no recent studies about this issue and very rarely, in the US IPO market.

After discussing empirical studies related to accuracy of earnings forecasts disclosed in IPOs prospectuses, the next chapter reviews the literature on the impact of audit committee characteristics on the disclosure accuracy of IPO earnings forecasts.

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#### **CHAPTER FOUR**

# A REVIEW OF THE LITERATURE ON THE AUDIT COMMITTEE CHARACTERISTICS

## **4.1 Introduction**

The previous chapter discussed and defined the concept of earnings forecasts, highlighted the most suitable theories for this research and reviewed the previous literature on the accuracy of IPO earnings forecasts. This chapter discusses the previous literature on the relationship between audit committee characteristics and the accuracy of management earnings forecasts and related issues. The review consists of four sections. Section 4.2 presents the concepts of an audit committee. Section 4.3 reviews the prior studies on audit committee's characteristics. In Section 4.4, the control variables for the models of this study are highlighted. This chapter concludes with Section 4.5 with an overall summary of the literature review.

#### 4.2 Defining the Concept of Audit Committee

The board of directors set up many committees for the company. One of these committees is the audit committee, whose main duties have to do with the quality of financial reporting. Generally, there is a consensus regarding the definition of the audit committee since its definition is usually not recognized on the argument that the structure and composition of the audit committee could differ from company to company.

Parker (1992) showed an audit committee as a sub-committee of the company's board of directors, which provides a proper connection among the board members, the system of internal controlling and monitoring, and the external auditor. Further, an effective audit committee is defined by DeZoort *et al.* (2002) as the committee that includes members with high qualifications, power and resources to guarantee that the interests of stakeholders are protected. This protection can be achieved by guaranteeing the financial reporting quality, internal controls and managing risks during its monitoring efforts.

Besides that, the Sarbanes-Oxley (SOX) Act (2002) defines an audit committee as a committee that has been set up by the issuing company's board with the purpose of monitoring the process of accounting and financial reporting as well as monitoring the auditing process of issuing company's financial statements.

## 4.3 Prior Studies on Audit Committee Characteristics

Existing evidence on the association between the accuracy of earnings forecasts and audit committee characteristics is very scarce. For this reason and to understand and assess the role of this governance mechanism on the accuracy of IPO earnings forecasts, the characteristics of this mechanism are also reviewed according to other proxies of financial reporting quality, which commonly are available in the literature. For example, the present study reviews the related literature on the audit committee and financial fraud (that can be presented as excessive situations of poor financial reporting quality), earnings management, earnings quality and informativeness, which have been extensively utilized as a measurement of earnings accuracy and quality. The current study examines the characteristics of the audit committee that have been identified by regulators as important characteristics in improving the effectiveness of a company's audit committee, including audit committee size, audit committee independence and audit committee expertise. In addition, this study examines vital characteristics of effective audit committees, namely, audit committee gender diversity, audit committee ethnicity, audit committee stock ownership, audit committee educational background and audit committee experience.

#### 4.3.1 Audit Committee Size

Audit committee size can be defined as the total number of members forming and working on the audit committee. The resource-dependence theory posits that the existence of large number of directors on a board enables companies to get varied and essential resources onto the board, that in turn allow the boards, directly or indirectly, to make effective decisions to meet challenges in the globalized business environment (Pfeffer, 1972; Pfeffer & Salancik, 1978). Pearce and Zahra (1992) indicated that the number of members on the audit committee is considered as a signal of existing resources to this committee. The argument is that with many members on the audit committee, more diverse abilities, skills and knowledge are in use by this audit committee in order to strengthen the monitoring and controlling roles (Saleh *et al.,* 2007). Therefore, since larger boards can make better collective decisions, it is expected to be better and more effective than smaller boards (Abeysekera, 2010).

Size has been investigated in relation to earnings forecasts, earnings management and earnings quality in several studies, as one of the audit committee characteristics.

Examples of these studies are Felo, Krishnamurthy, and Solieri (2003); Xie, Davidson, and DaDalt (2003); Abbott, Parker, and Peters (2004); Bédard, Chtourou, and Courteau (2004); Yang and Krishnan (2005); Karamanou and Vafeas (2005); Lin *et al.* (2006); Abdul Rahman and Ali (2006); Bédard *et al.* (2008); Huang and Thiruvadi (2010); Ahmad-Zaluki and Wan-Hussin (2010); Greco (2012); Hamdan, Mushtaha, and Al-Sartawi (2013); Baccouche, Hadriche, and Omri (2013); Amar (2014); and Salleh and Haat (2014).

Focusing on studies on earnings forecasts, Ahmad-Zaluki and Wan-Hussin (2010) showed that the number of directors on audit committee have a negative association with absolute forecast error, proposing that audit committees with more directors have the ability to make more accurate forecasts. Their result can be attributed to audit committee which has many directors being more resourceful since it is expected to consist of directors with various skills and knowledge to achieve enhanced overseeing of financial reporting. A sample of 275 US Fortune 500 companies was examined by Karamanou and Vafeas (2005) during the period 1995-2000. Although they found the increase in absolute forecast error for the good news subsamples is related to audit committee size, their general results indicate an increase in the accuracy of forecasts with well-structured corporate governance. They said that a well-governed company is more cautious of its commitment not to mislead shareholders. When the company performs worse than expected, there is greater danger of misleading shareholders.

Reviewing the studies on earnings management, Amar (2104) found that more audit committee members in French companies lead to reducing earnings management. Yang & Krishnan (2005) showed that size of audit committee is negatively related to the level of manipulated earnings. As a result, the quality of reported earnings might be related to a definite minimum number of audit committee directors. Similarly, Lin *et al.* (2006) and Greco (2012) found that audit committee size is negatively related to earnings restatement. Their results are in accordance with the proposition that many directors on audit committee may enable better monitoring and controlling on the process of financial reporting. Such monitoring appears to enhance the quality of reported earnings by mitigating the likelihood of restating financial statements.

In contrast, Baccouche *et al.* (2013) and Salleh and Haat (2014) found that more directors on audit committee result in more earnings management. This can be explained by larger audit committees facing problems regarding the communication and the complexities of allocating the responsibilities. These issues may confine the capability of the audit committee members to monitor the practices of earnings management that can provide more liberation for company managers to easily manage earnings. Xie *et al.* (2003) and Bédard *et al.* (2004) found insignificant association between the number of directors on the audit committee and earnings management. Finally, Lin, Hutchinson, and Percy (2009) indicated that the size of the audit committee is associated with the increased levels of earnings management and committee when the size of the audit committee is increased. It is also consistent with the perspective that larger boards could be unproductive in their monitoring functions compared to smaller boards.

For the financial reporting quality studies, Hamdan et al. (2013) reported that the size of the audit committee has negative impact on earnings quality. They indicated that it is better for the size of the committee to be within a range that makes it more efficient. On the other hand, Felo et al. (2003) reported a positive association between the number of directors on audit committee and the quality of financial reporting. The justification for this result is that the directors of the audit committee, who have more skills and experience, may improve the company's reporting quality. Mangena and Pike (2005) who looked at interim reports, found insignificant relationship between audit committee size and the level of disclosure. They felt that it does not necessarily mean that a larger audit committee would contribute more significantly to the quality of financial reporting, relative to a smaller audit committee. Wan-Hussin and Haji-Abdullah (2009) reported that it is more likely for companies with good financial reporting to have a larger audit committees compared to companies with poor financial reporting. This is because larger audit committees can devote more time and effort to make sure the financial statements disclosure is accurate and timely, thus increasing financial reporting quality. On the other hand, by utilizing a sample of Australian listed companies in 2001, Baxter and Cotter (2009) indicated that there is an insignificant association between audit committee size and quality of earnings. Their findings are based on the fact that a large committee may weaken the efficiency of audit committees in overseeing the financial reporting quality process.

For the studies on financial fraud, Huang and Thiruvadi (2010) explored a sample of 218 US companies for the financial year 2003. They showed that the number of directors on audit committee has an insignificant influence on fraud prevention.

Similarly, Abbott *et al.* (2004) indicated that the size of the audit committee has an insignificant influence on financial restatement.

To sum up, the findings of prior studies on the effect of the size of audit committees on the earnings forecasts accuracy and other proxies of financial reporting quality, are mixed and inconclusive. Studies such as Xie *et al.* (2003); Abbott *et al.* (2004); Bédard *et al.* (2004); Huang and Thiruvadi (2010); and Hamdan *et al.* (2013) found insignificant or inverse association between audit committee size and quality of financial reporting. Further, Baccouche *et al.* (2013) found positive and significant association between audit committee size and earnings management. Nonetheless, there are studies that have found a negative association (e.g., Yang & Krishnan, 2005; Lin *et al.*, 2006; Amar, 2014). A positive relationship also between the size of audit committee and earnings forecasts accuracy has been found in other studies (e.g., Ahmad-Zaluki & Wan-Hussin, 2010).

Up to now, there is only one study that has investigated the relationship between the size of the audit committee and the accuracy of IPO earnings forecasts, i.e., the study of Ahmad-Zaluki and Wan-Hussin (2010) in Malaysia. Therefore, the current study expands the literature by re-investigating the association between audit committee size and the disclosure accuracy of management earnings forecasts in Malaysian IPOs.

#### 4.3.2 Audit Committee Independence

The question regarding the independence level of audit committee is considered an important part of its composition (Joshi & Wakil, 2004). The independence of audit committee members is a crucial characteristic that influences the efficiency of the committee in overseeing the process of financial reporting. Beasley (1996), Xie *et al.* (2003) and Bédard *et al.* (2004) defined an independent non-executive director as a member who does not have a relationship with the company except being on its board. According to Klein (2002), there are three different definitions of independence. The first and most prevalent definition utilized in the academic literature considers independence as the percentage of non-executive directors working on the audit committee. A second definition states that an audit committee is considered independent as long as every one of its members is a non-executive director. Thirdly, an audit committee is defined as independent when most of its directors are independent of management.

The concentration on directors' independence is grounded in the agency theory (Fama & Jensen I983), which identifies the monitoring or controlling role of the directors as the most significant of directors' responsibilities, i.e., to put the effective monitoring tasks in place; and directors who are non-executive and independent of management being included on the committee board. Based on the MCCG (Revised Code, 2007), the audit committee has to be structured fully by non-executive directors, with most of them being independent directors <sup>10</sup>. This recommendation is in line with the advantage of having non-executive directors, who could find solutions for the

<sup>&</sup>lt;sup>10</sup> The present study uses the term outside directors and non-executive directors inter-changeably.

problems of inconsistency among internal managers and mitigate the conflict between internal managers and shareholders (Fama & Jensen, 1983).

Generally, the independence level of the audit committee has been extensively studied in several previous studies. While there are very limited studies investigating audit committee independence with earnings forecasts, there are a number of studies that have examined the relationship between audit committee independence and earnings management practices, earnings quality and financial reporting quality. Examples of these studies include Klein (2002); Xie *et al.* (2003); Bédard *et al.* (2004); Abbott *et al.* (2004), Davidson *et al.* (2005); Yang and Krishnan (2005); Karamanou and Vafeas (2005); Abdul Rahman and Ali (2006); Bédard *et al.* (2008); Ahmad-Zaluki and Wan-Hussin (2010); Siagian and Tresnaningsih (2011); Hamdan *et al.* (2013); Baccouche *et al.* (2013); Amar (2014); and Salleh and Haat (2014). These previous studies are directly associated with the key focus of the current study and are reviewed in the following sections.

The study that has directly examined the relationship between audit committee independence and earnings forecasts accuracy was undertaken by Ahmad-Zaluki and Wan-Hussin (2010). They indicated that audit committee, with independent nonexecutive directors, has a significant negative relationship with absolute forecast error. Their findings can be explained in that the majority of all audit committees examined in their sample included non-executive directors. They showed that the mean proportion of directors who are independent non-executive directors included in the audit committees is about two-thirds. Their findings show that the higher the proportion of outside directors on the audit committee, the greater the accuracy of the forecasts made by the management of Malaysian IPO companies.

Bédard *et al.* (2008) utilized a sample of 246 IPO companies issued in Canada. They indicated that there is an insignificant relationship between independence of audit committee and the forecast errors of disclosed earnings forecasts in the IPO prospectuses. They further argued that not many companies issue a forecast in their prospectuses, which leads to reduced sample size. The accuracy of forecasted earnings is also influenced by other factors, for which the audit committee has no control. They said that in the context of IPOs, the shareholders' incentive is to transfer part of the company's shares to the public, and not so much to have a reputation for issuing accurate forecasts.

Focusing on the literature of the relationship between the audit committee independence and earnings management, Amar (2014) and Salleh and Haat (2014) showed that the majority of independent audit committee members is found to have significant and negative impact on earnings management. Klein (2002) indicated that the independence of audit committee is negatively associated with earnings management. Klein (2002) argued that independent directors sitting on the audit committee are in the best position to be effective monitors for the process of financial reporting quality; since they can resist the stress of management to undertake earnings manipulation. However, an entirely independent audit committee has been found to be insignificantly related to earnings management. Therefore, Klein (2002) concluded that having an audit committee that is structured totally of independent directors, is not necessary. Similarly, Bédard *et al.* (2004) showed that when 100% of the
members are independent, there is a significant decrease in the possibility of aggressive earnings management. However, they showed that independence of audit committee contributes insignificantly to effective control of aggressive earnings management for a committee composed of 50-99% independent members. The results of Bédard *et al.* (2004) are in contrast to the findings of Klein (2002), which suggests insignificant relationship between the requirement of a totally independent audit committee and the level of earnings management.

In the Australian institutional context, Davidson *et al.* (2005) indicated that the reduced earnings management is significantly related to the majority of non-executive directors sitting on the audit committee as well as on the board. The findings of Davidson *et al.* (2005) are in line with Klein (2002) who illustrated that less manipulated earnings are related to the majority of independent directors included on the audit committee. Likewise, in Malaysia, the evidence in the study of Saleh *et al.* (2007) indicates that the practices of earnings management are reduced in the existence of an entirely independent audit committee. Their findings are similar to the results of Bédard *et al.* (2004). Since they investigated the listed companies during 2001, their results can be attributed to the launching and implementation of the MCCG (2001). This is because under the MCCG, the audit committee has the function of evaluating the year-end and quarterly financial statements, and having discussions with the auditor on any issue, as a consequence of the audit. The audit committee also has full access to information.

In contrast, in the context of Malaysian IPOs, Saleh and Ismail (2009) found that audit committee independence has insignificant association with IPO earnings management. They attributed the reason behind that to the dominance of management over the matters of board in addition to the lack of understanding among the directors concerning the company's daily affairs. Baccouche *et al.* (2013) found that the independence of the audit committee leads to more earnings management. They indicated that although audit committee performs a vital job in overseeing the financial statements quality, it appears to conduct a consultative responsibility to the board of directors. This advisory responsibility can discourage independent members to effectively oversee the process of financial reporting that might provide more chances for managers in French companies to raise their premises of earnings management. Further, Yang and Krishnan (2005) showed that there is an insignificant association between independence of audit committee and quarterly earnings management. They argued their results based on the desire of these directors to protect their reputation and proficiency in handling financial reporting concerns as well as to their independence.

Likewise, Xie *et al.* (2003) and Lin *et al.* (2006) found no evidence that the audit committee independence has any influence on the incidence of earnings management or restatement. Furthermore, Abdul Rahman and Ali (2006) showed that there is an insignificant association between independent audit committees and the occurrence of earnings management. They argued that although these companies fulfil the requirements of MCCG and the BMLR, the structure of applied corporate governance may not serve its ultimate goals in the case of management dominance over board matters, which can happen when the boards of directors do not acquire the needed experience, skills and knowledge.

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Regarding literature of audit committee independence and earnings quality, Bradbury, Mak, and Tan (2006) reported that an independent audit committee is associated with greater earnings quality. Their results explain that the efficacy of audit committees will be increased when they comprise independent directors, which is consistent with regulators' calls for more independent audit committees. Further, the study of Siagian and Tresnaningsih (2011) found that the quality of earnings reporting can be developed by independent board of directors and independent audit committees. They claimed that those independent directors from management on both boards and audit committees, significantly enhance the boards' monitoring function and prevent poor financial reports. Their results are consistent with Bradbury *et al.* (2006). However, Hamdan *et al.* (2013) found no relationship between audit committee independence and earnings quality.

For financial restatement, Abbott *et al.* (2004) showed a significant and negative relationship between the independence of the audit committee and the incidence of financial restatements. Their results concur with the contentions of the Blue Ribbon Committee (BRC) that independent directors have the best ability to independently assess the propriety of management's accounting, reporting practices as well as internal control. Regarding financial fraud as a proxy of the quality of financial reporting, Owens-Jackson, Robinson, and Shelton (2009) indicated that fraudulent financial reporting cannot be eliminated by entirely independent audit committees. Specifically, they reported that the possibility of fraudulent financial reporting is negatively associated with the independence level of audit committee. They concluded that the SOX Act and/or the BRC may not be adequate to restrict the behavior of managers regarding financial fraud. In such cases, auditors, boards of

directors, audit committees and outside regulators must focus on situations where there is low managerial ownership, with managers having access to insider information and less motivation to protect shareholders' interests.

In sum, ranges of audit committee characteristics have been tested in previous studies for their relationship to earnings management, earnings quality and earnings fraud. One of the most commonly tested characteristics is audit committee independence. The independence of audit committee has been shown to be significantly related to the proxies of financial reporting quality in many previous studies (e.g., Klein 2002; Abbott et al., 2004; Bédard et al., 2004; Davidson et al., 2005; Bradbury et al., 2006, Ahmad-Zaluki & Wan-Hussin, 2010; Amar, 2014). On the other hand, within these researches, there are some contradictions in the findings. For instance, Klein (2002) and Amar (2014) indicated that there is no support for the existence of a significant relationship between fully independent audit committee and earnings management. Furthermore, Yang and Krishnan (2005), Lin et al. (2006), Abdul Rahman and Ali (2006), and Hamdan et al. (2013) did not find any significant association between audit committee independence and earnings management measures. Overall, the literature on audit committee independence reveals inconsistent conclusions. These inconsistencies can be partly attributed to the various proxies that have been adopted in the previous studies as a measurement for financial reporting quality. The current study expands the literature by re-investigating the association between audit committee independence and the accuracy of management earnings forecasts in Malaysian IPOs.

## **4.3.3** Audit Committee Financial Expertise

In addition to audit committee independence and size, expertise is generally regarded as a critical characteristic for an audit committee's effective operation (Baxter & Cotter, 2009). The MCCG indicates that all directors of the audit committee must be financially literate and a minimum of one director should be associated with an accounting association or body (Revised Code, 2007). Additionally, Bursa Malaysia implements a similar condition, but it has particularly stated that, at least one director must be a member of the Malaysian Institute of Accountants (MIA) or have a working experience of three years in finance and accounting. Therefore, the adopted definition of financial experts utilized in Malaysia strictly applies to directors who have qualifications and experience in finance and accounting.

It is vital for the directors to possess essential skills, experience and expertise to effectively perform their functions. This notion is grounded in the resourcedependence theory, which posits that the directors' responsibility as a basis of advice and guidance for the Chief Executive Officer (CEO) is significant in providing appreciated resources to the companies (Pfeffer & Salancik, 1978; Zahra & Pearce, 1989; Hillman & Dalziel, 2003; Daily, Dalton, & Cannella, 2003). Bédard *et al.* (2004) indicated that resources, such as financial, governance and company-specific resources should be provided by both the inside and outside directors in order to effectively support the financial reporting quality. The audit committee needs these resources to deal with complex accounting and financial issues. Audit committee expertise has been investigated in several prior studies whether on forecasts accuracy or related issues (e.g., Xie, *et al.*, 2003; Abbott *et al.*, 2004; Bédard *et al.*, 2004; Dhaliwal, Naiker, & Navissi, 2006; Carcello, Hollingsworth, Klein & Neal, 2006; Zhang, Zhou, & Zhou, 2007; Bédard *et al.*, 2008; Baxter & Cotter, 2009; Huang & Thiruvadi, 2010; Ahmad-Zaluki & Wan-Hussin, 2010; Truong & Dunstan, 2011; Abernathy, Herrmann, Kang, & Krishnan, 2013; Hamdan *et al.*, 2013; Liu *et al.*, 2104; Salleh & Haat, 2014). A number of different measures of expertise and financial reporting quality have been used in these studies.

For accuracy of IPO earnings forecasts, Ahmad-Zaluki and Wan-Hussin (2010) reported that there is no evidence linking the financial expertise of the audit committee to the accuracy of management earnings forecasts in IPOs. Similarly, a Canadian study by Bédard *et al.* (2008) indicates that there is an insignificant association between audit committee financial expertise and forecast accuracy. In contrast, Truong and Dunstan (2011) showed that companies in which the boards and audit committees have more directors with accounting expertise are more expected to release earnings forecasts related to longer horizon and less forecast error. Further, Abernathy *et al.* (2013) found that the accounting financial expert who is sitting on the audit committee is related to greater analyst forecast accuracy. When there is an accounting expert sitting on the audit committee, management is less expected to be involved in expectations management in order to keep away from the surprises of negative earnings (Liu *et al.*, 2104).

Reviewing the studies on audit committee financial expertise and its relationship with earnings management, Xie *et al.* (2003) reported a negative association between other

non-accounting financial experts (e.g., corporate or investment banking backgrounds) and practices of earnings management, but did not report any association between earnings management and senior business executives of other companies. Likewise, Bédard *et al.* (2004) showed that an audit committee comprising a minimum of one director with financial and governance expertise, is effective in reducing the earnings management practices. Their results enhance the affirmation of SOX Act that financial expertise is a significant characteristic of an audit committee to undertake its responsibility in monitoring the activity of financial reporting and auditing process. Further, their result largely supports the BRC (1999) for audit committees that members with financial expertise, will perform an active role. In Malaysia, Salleh and Haat (2014) reported a negative but insignificant association between audit committee expertise and earnings management. They attributed this result to the existence of audit committee directors with accounting expertise after the revised MCCG that led to lessening the earnings management although the result is not significant.

Furthermore, Dhaliwal *et al.* (2006) found an audit committee with accounting expertise to have a significant positive association with earnings quality. However, for the finance and supervisory expertise in audit committees, there is an insignificant association between their presence and earnings quality. They show that these results lend support to the opinion that the existing definition of financial expertise is overly wide and encourages any improvements in the future to the definition of financial expertise. In addition, Carcello *et al.* (2006) found that for companies with weak overall corporate governance, an audit committee with accounting and non-accounting financial expertise, is associated with a lower level of earnings management. In contrast, for

companies with good overall corporate governance, it is indicated that the manipulated earnings is not mitigated by the existence of financial expertise on the audit committee. This means an audit committee's financial expertise and company's overall governance structures are substitutes for one another. They indicated that the advantages of good oversight by an audit committee's accounting/financial expertise may directly increase the improvement of financial reporting quality. This is similar to prior results of Xie *et al.* (2003), Bédard *et al.* (2004), Carcello *et al.* (2006); and Dhaliwal *et al.* (2006). Baxter and Cotter (2009) found that higher quality of reported earnings is related to audit committees that comprise accounting experts.

In contrast, Hamdan *et al.* (2013) did not report any role to be played by financial expertise in enhancing earnings quality. Abdul Rahman and Ali (2006) found insufficient evidence to support the claim that the existence of financial experts on audit committees mitigates the level of earnings management. They attributed their finding to the fact that the forming of an audit committee in Malaysian listed companies has yet to accomplish success in its controlling and overseeing responsibility. Further, their sample may be very small (97 companies), relative to other studies.

For financial fraud, Abbott *et al.* (2004) and Huang and Thiruvadi (2010) found that an audit committee that comprises a minimum of one member with financial expertise is significantly and negatively associated with the occurrence of financial reporting restatements. Their findings explain that financial experts have the capability to read and understand fundamental financial statements, understand the issues related to auditing and risks and the proposed ways to detect these problems and risks. On the other hand, for earnings restatement, Lin *et al.* (2006) showed that there is no relationship between audit committee expertise and earnings restatements. One possible reason for their result is that they adopted a sample for the year 2000, which was before the occurrence of SOX Act that improved and supported the duty of audit committees. In addition, their study utilized small sample size (106 companies) for only one year.

As far as internal reporting quality is concerned, Zhang *et al.* (2007) reported that if the audit committee of a company has fewer financial experts, such a company is likely to be identified as having internal control weaknesses. They believed financially knowledgeable members can address and detect material misstatements, and understand auditor judgments more than members who do not have financial expertise. Mangena and Pike (2005) provided support of a significant positive relationship between interim disclosure and the financial expertise of an audit committee. These authors suggested that if an audit committee comprises directors having accounting and/or financial expertise, the committee would be likely to encourage its management to release more information in interim reports.

In conclusion, the results of the previous studies are inconsistent and mixed. This can be attributed to some of these previously mentioned studies using different samples, different definitions for financial expertise, different periods of studies, different countries, and different financial reporting quality proxies. However, they are unanimous in their findings that financial expertise on audit committees contributes to greater quality of earnings reporting (e.g., Xie, *et al.*, 2003; Abbott *et al.*, 2004; Bédard *et al.*, 2004; Dhaliwal *et al.*, 2006). On the other hand, studies have found insufficient evidence to support the claim that the existence of financial expertise on audit committee mitigates earnings management (e.g., Abdul Rahman & Ali, 2006; Lin *et al.*, 2006) or increases forecast accuracy (e.g., Bédard *et al.*, 2008; Ahmad-Zaluki & Wan-Hussin, 2010). The current study extends the study of Ahmad-Zaluki and Wan-Hussin (2010) by re-examining the association of financial expertise on the audit committee and the accuracy of management earnings forecasts disclosed in Malaysian IPO prospectuses.

#### **4.3.4 Audit Committee Gender Diversity**

After the last corporate scandals and financial crises, an imperative question has been asked: if more female directors were directing the companies in the US and worldwide, would things have been different (Adams & Funk, 2012)? The lack of female representation on boards of directors is turning out to be much discussed issue lately that need to be addressed because of the benefits obtained from gender diversity in the boardrooms (Julizaerma, & Sori, 2012).

Gender diversity is defined as the existence of women on the company's board of directors (Dutta & Bose, 2007). In June 2011, the government of Malaysia passed a ruling that a minimum of 30% of those in the positions of decision-making in the corporate sector must be women, as a step to achieve the equality of gender diversity in the workplace (Ahmad-Zaluki, 2012). The MCCG (2012) states that the Board should: (1) have a policy in place to ensure boardroom diversity; (2) ensure women candidates are recruited; and (3) reveal clearly in the annual report its policies on gender diversity, objectives and the taken measures to achieve those objectives. For

the 228 IPOs that were issued over the period of 1999-2006, Ahmad-Zaluki (2012) showed that there is only eight percent female representation on the boards of directors in Malaysian companies before the IPOs, and almost similar for the following four years with only slight increases and decreases. The author further showed that when the company is considered as a top 500-company listed on the Bursa Malaysia, the percentage of women directors before the IPO year is just 6.39%, which increased to 8.87% five to 12 years after the IPOs.

Gender diversity of directors has been explained by several theories, such as agency theory, resource-dependence theory and signaling theory. Carter, Simkins, and Simpson (2003) explored the association between gender diversity and the value of the company in the framework of agency theory, as illustrated by Fama and Jensen (1983). They indicated that more diversity may lead to the raising of boards' independence, since females are more likely to raise questions that would not be raised by male directors. From the perspective of resource-dependence theory, Hillman et al. (2000) indicated that since boards provide associating tasks between a company and the external environment, the more diverse the board (including a greater proportion of female directors), the more choices of network and linkage opportunities for a company. For signaling theory, it hypothesizes that companies utilize observable signals to get reputation and status (Miller & Triana 2009). External users use such signals in their judgments on the companies; thus, by these signals, companies affect how financial analysts, investors and other stakeholders judge the company (Bhat, Hope, & Kang, 2006). Accordingly, as cited in Gul, Hutchinson, and Lai (2011), the commitment of the company for gender diversity is expected to be utilized as an informational signal that influences the external environment, such as the media and financial analysts (Bilimoria, 2000). Since women sitting on the board enhance the company's performance by assisting in making sound decisions by the board, their existence signals to outside stakeholders such as financial analysts, investors and the general public that the company is delivering accurate financial information (Habib & Hossain, 2013).

The gender diversity on boards and audit committees has been reviewed in literature in terms of gender and earnings reporting quality (e.g., Krishnan & Parsons, 2008; Peni & Va¨ha¨maa, 2010; Ye, Zhang, & Rezaee, 2010; Gul *et al.*, 2011; Srinidhi *et al.*, 2011); earnings management (e.g., Gul, Srinidhi, & Tsui, 2007; Bermig & Frick, 2010; Wei & Xie, 2010; Thiruvadi & Huang, 2011; Gavious, Segev, & Yosef, 2012; Buniamin, Johari, Abd Rahman, & Abdul Rauf, 2012; Qi & Tian, 2012); fraud (Kim, Roden, & Cox, 2013); financial performance (e.g., Erhardt, Werbel, & Shrader, 2003; Farrell & Hersch, 2005; Rose, 2007; Campbell & Minguez-Vera, 2008; Dunstan, Keeper, Truong, & Zijl, 2011; Ahmad-Zaluki, 2012; Garba & Abubakar, 2014) and other related issues such as auditing quality (Ittonen, Miettinen, & Va¨ha¨maa, 2010; Chapple, Kent, & Routledge, 2012).

This section reviews the related literature on the association between gender and the quality of reported earnings. Krishnan and Parsons (2008) provided evidence that gender diversity in senior management is positively related to earnings reporting quality. They also showed that companies with more females in senior management positions have reported higher profitability and greater stock returns after IPOs, compared to other companies with less percentage of females in senior management positions. Their findings argue that earnings of companies with higher gender

diversity are more sensitive to bad news than the earnings of companies with low gender diversity. Similarly, Peni and Va"ha"maa (2010) showed that a woman working as Chief Financial Officer (CFO) has a highly significant positive effect on earnings quality. They said that female CFOs follow great conservative strategies about financial reporting compared to their male counterparts. Another explanation is that considering the glass ceiling phenomenon, the earnings quality might be increased by having female CFOs because women possess greater requirements to be appointed in the company, i.e., the women directors who have worked as CFOs are most probably highly experienced and active, and hence may perform better than male CFOs<sup>11</sup>.

Moreover, Gul *et al.* (2011) reported that the stock prices of companies that practice gender diversity on their boards, reveal greater information, i.e., earnings quality is related to greater stock price informativeness. They found this association to be stronger and clearer for companies that have weak corporate governance, which proposes that gender diversity may perform as an alternative method for weak corporate governance. Similar results are also found in the study of Srinidhi *et al.* (2011). They argued that including women directors on the board or/and the audit committee, are credible methods of developing the quality of companies' reporting and raising the confidence of investors in financial statements.

On the other hand, Ye *et al.* (2010) found insignificant differences in earnings reporting for companies with female and male top executives. They concluded their

<sup>&</sup>lt;sup>11</sup> Glass ceiling is a metaphor to illustrate the invisibility of female improvement obstacle in the corporations (Zainal, 2009).

study by stating that stimulating companies to appoint more women managers does not support raising earnings quality for Chinese companies. They indicated that China may have to look for other strategies, such as increasing the heterogeneity of the board of directors by age, functional background, educational background and tenure. Their findings are inconsistent with previous results reported in developed markets (e.g., Krishnan & Parsons, 2008; Gul *et al.*, 2011; Srinidhi *et al.*, 2011).

The influence of gender is also prevalent in earnings management research. Buniamin et al. (2012) found that more female directors on board might lead to increasing the activities of earnings management. On the other hand, Kim et al. (2013) reported that the probability of fraud increases significantly when there are fewer women represented on the board. They argued that the existence of women directors could have a significant effect on adjusting the board's manners and enhancing its monitoring task. However, Gul et al. (2007) reported that companies that have at least one woman on their boards or audit committees are shown to be related to less earnings management. They explained their results in that since the directors provide the females with higher access to time and great voluntary information in an environment of less doubt, those women appear to be more effective transformational leaders. Such access to more voluntary information reduces the information asymmetry between the women directors and the managers of companies and leads to less manipulated earnings. Additionally, women show higher risk aversion in financial decision-making and are less over-confident than men, particularly in functions where the feedback is uncertain. Further, Qi and Tian (2012) found that women on audit committees are more conservative than their male counterparts, as proposed by the negative associations between the percentage of female directors on

the audit committee and the level of earnings management. Bermig and Frick (2010) reported that companies that include women directors on their boards are found to have less earnings management. They claimed that these women are more diligent monitors. Additionally, Wei and Xie (2010) asserted that women CFOs are related to a lower level of earnings management than men CFOs. Taken as a whole, their evidence supports the proposition that female CFOs are more risk-averse in making financial reporting and operational decisions than male CFOs.

Furthermore, Thiruvadi and Huang (2011) indicated that the existence of a woman director on the audit committee leads to improving the governance of the audit committee in terms of external function, thus leading to constraining earnings management. They argued that existence of women results in increasing the meeting frequency of the audit committee and, thereby its activity. Likewise, Gavious *et al.* (2012) found a negative association between the existence of women directors and the level of earnings management. In addition, they showed that accounting aggressiveness is impacted by the proportion of women on the audit committees and boards of directors. Additionally, their study found that when either the CEO or the CFO is a woman, the level of earnings management is lower. Their findings can be explained by the fact that women do not involve themselves in risks inherent in earnings management because they do not like and fear negative consequences for reporting manipulated earnings as well as due to moral considerations. Their evidence about the effect of CFO's gender on earnings quality is consistent with the results of Peni and Va¨ha¨maa (2010) and Wei and Xie (2010).

Ahmad-Zaluki (2012) conducted a more recent study on Malaysian IPOs and analyzed the case of women on boards. Her study found that a higher proportion of women directors results in poor long-run underperformance in the period of post-IPO. However, there is not much significant difference in underperformance between companies having no women directors and companies that do. She argued that companies in Malaysia have still not acknowledged the effect that females have on the performance of a company because of the feminine characteristics they bring into the top management levels. Focusing on studies of gender and financial performance (e.g., Erhardt et al., 2003; Farrell & Hersch, 2005; Liu, Wei, and Xie, 2013; Garba & Abubakar, 2014), and gender and company's value (e.g., Carter et al., 2003; Dunstan et al., 2011), it has been found that there is a positive association between the proportion of women on boards of directors and the financial performance and value of the company. Prior studies have argued that gender diversity could result in a broader knowledge base that can lead to a competitive advantage relative to companies with no gender diversity boards, which is associated with more enhanced shareholder value. Further, women directors on the boards improve the independence of boards as they largely tend to raise questions that would not be raised by male directors, and thereby, shareholders' interests are more likely to be protected. However, if the women on the boards are marginalized, it may not lead to greater effective monitoring. In contrast, some studies indicate that gender diversity does not necessarily increase company performance (e.g., Rose, 2007) or company value (e.g., Campbell & Minguez-Vera, 2008).

In the auditing area, the study of Chapple *et al.* (2012) reports that the existence of women on the audit committees is related to a higher probability of emphasis on

matters of going concern audit opinion. They attributed their results to the fact that having women as directors on the committee will strengthen the overseeing function of the audit committee and develop the reliability and quality of financial reporting. This will also prevent the boards of directors from making self-serving decisions not to report going concern matters and increase reporting transparency. Ittonen *et al.* (2010) reported that women on audit committees is negatively and significantly related to audit fees. They said that women on audit committees acts as an alternative for external auditors, and thus decreases the requirement for external audit or services, i.e., women's presence mitigates the threats of misstatements and the gender diversity of the audit committee can cause the audit fees to be lower.

For the association between gender and conservatism, Francis, Hasan, Park, and Wu (2009) found that female CFOs are related to significant enhancement in the level of accounting conservatism in financial reporting, relative to males. Further, they reported that women CFOs are related to lower risk financing and investment decisions as compared to male CFOs. Finally, market response to the appointment of women as members of the audit committee was investigated by Huang *et al.* (2011). They found a higher positive abnormal market return was incurred as a response to the assigning of women on the audit committees. They argued that gender diversity improves the confidence of investors in a company's audit committee and its capacity to conduct efficient monitoring over the financial reporting process, in addition to the external audit.

In brief, the previous reviewed studies determined the impacts that women executives and directors could likely have on earnings reporting quality, earnings management and the company's financial performance. Some studies have found gender diversity on the boards and audit committees to be related to improved earnings quality (e.g., Krishnan & Parsons, 2008; Peni & Va"ha"maa, 2010; Gul *et al.*, 2011; Srinidhi *et al.*, 2011) except the study of Ye *et al.* (2010), where the findings do not display significant differences for companies with female and male top executives. In addition, there are studies that have found that gender diversity on the boards and audit committees is related to less earnings management (e.g., Bermig & Frick, 2000; Gul *et al.*, 2007; Gavious *et al.*, 2012). While there are some studies that have found the effect of gender diversity on company's financial performance and value (e.g., Farrell & Hersch, 2005; Dunstan *et al.*, 2011; Garba & Abubakar, 2014), some other studies, nonetheless, indicate that gender diversity does not essentially enhance the performance of the company (Rose, 2007; Campbell & Minguez-Vera, 2008).

Nonetheless, more research needs to be undertaken on the contribution that women make in the boardroom, and their influence on board decisions and processes (Nielsen & Huse, 2010). Up to now, there is no study that examines the relationship between audit committee gender diversity and accuracy of management earnings forecasts in the environment of IPO companies. Therefore, this study fills this gap in the literature by examining such an association.

# 4.3.5 Audit Committee Ethnicity

The Malays (also known as Bumiputeras), Chinese and Indians are considered the main ethnic groups in Malaysia, with the existence of a variety of ethnic groups in the state of Sabah and Sarawak, in addition to a few other groups, such as the Thais, Pakistanis and Europeans (Che-Ahmed *et al.*, 2006). However, Malays and Chinese

are the two major groups who play a role in most of the Malaysian socio-economic and political environment (Che-Ahmed *et al.*, 2006). It is noticeable that the Malays control the political environment in the country, while the Chinese heavily dominate the economic environment.

The resource-dependence theory posits that boards of companies have the ability to help the management in getting access to important resources, which might otherwise be outside their reach (Pfeffer & Salancik, 1978). Under this theory, the diversity of the boards of directors is an important element since it can lead to broader corporate networks (Siciliano, 1996). If a board comprises diverse gender or members of different ethnicities, it may be in a position to better avoid the practices of earnings smoothing and management, which will in turn, provide shareholders with more reliable figures for corporate performance (Gallego-Álvarez, García-Sánchez, & Rodríguez-Dominguez, 2010).

The effect of ethnicity on the earnings quality or related issues, such as earnings management, financial performance and auditing fees and choice, have drawn the interest of a number of studies (e.g., Haniffa & Cooke, 2002; Salleh, Stewart, & Manson, 2006; Abdul Rahman & Ali, 2006; Marimuthu, 2008; Carter *et al.*, 2010; Marimuthu & Kolandaisamy, 2009; Mohammad, Salleh, & Abdul Rahman, 2011; Hamzah, Saleh, & Mohamed, 2012; Nazri *et al.*, 2012; Yunos, Ismail, & Smith, 2012; Ahmad-Zaluki, 2012; Garba & Abubakar, 2014).

Hofstede (1983) acknowledged four dimensions of cultural value, namely power distance, masculinity, individualism and uncertainty avoidance. In a later study, Gray

(1988) suggested that there is a relationship between the cultural values suggested by Hofstede and a group of four accounting values, namely secrecy versus transparency; professionalism versus statutory control; conservatism versus optimism; and uniformity versus flexibility. Hofstede (1991) showed that the individualism of Chinese ranks low; nevertheless Gray (1988) proposed that a greater ranking of professionalism is more probable as there are greater rankings of individualism and lower rankings of uncertainty avoidance and power distance. Gray (1988) claimed that the Chinese, are to some extent, more professional in relation to the Malays. Compared to the Malays, Haniffa and Cooke (2002) proposed that the Chinese are comparatively individualistic. On the other side, Hofstede (1991) reported a higher ranking for Malay individualism, power distance, and masculinity, except for uncertainty avoidance.

According to the model developed by Salleh *et al.* (2006) in Table 4.1, the Malays rank with a high uncertainty avoidance and low individualism, meaning that it is easy for the Malays to interact and perform within the Malay society since they are known to share and have similar values, desires and behavior, as well as good realization and understanding of their own ethnic group. On the other hand, Salleh *et al.* (2006) indicated that the Chinese have low uncertainty avoidance but high individualism. This finding can be attributed to the fact that it is easy for the Chinese to interact amongst themselves and other ethnic groups, as they realize the separation between the business and their personal feelings (Nazri *et al.*, 2012). Thus, this notion is used to examine whether the ethnicity of IPO audit committee members influences their monitoring for high accuracy of earnings forecasts.

Hofstede's Societal Value	Ethnic Groups	Accounting Value	Accounting Practice
	Malay		
Power distance	High	Low professional	Low compliance with legal requirements
Masculinity	Low	Low secrecy	High disclosures
Uncertainty	High	High uniformity	Less flexibility
Avoidance			
Individualism	Low	High conservatism	Less optimism
	Chinese		
Power distance	High	High professional	High compliance with legal requirements
Masculinity	Low	High secrecy	Low disclosures
Uncertainty	Low	Low uniformity	High flexibility
Avoidance	TT 1	T	<b>TT</b> 1
Individualism	Hıgh	Low conservatism	High optimism

Table 4.1The Interrelationship between Societal Values and Accounting Practices

Source: Adapted from Salleh et al. (2006).

Focusing on studies related to ethnicity and disclosure, Haniffa and Cooke (2002) investigated 139 Malaysian listed companies over the period 1996 and 2002. As a proxy for the culture affect, the ethnicity (percentage of Malays directors on boards) was reported to be significantly related to the level of voluntary disclosure. They explained that companies managed by Malay directors are premised on Islamic business ethics that support transparency in business. Likewise, in Malaysia, Hamzah *et al.* (2012) reported a positive and significant association between ethnic diversity and the disclosure of intellectual capital. Specifically, they showed that Malay and Indian directors performing on audit committees, have a significant impact on the level of intellectual capital disclosure.

Regarding the studies on ethnicity and earnings management, Abdul Rahman and Ali (2006) documented that ethnicity (percentage of Malay members on boards) has no impact on reducing the practices of earnings management. They attributed this to the more individualistic behavior of the Bumiputera directors. They showed that the more individualistic behavior of Malays, as compared to Chinese, is explained by the modernization of Malaysia, the need for survival in a competitive environment, and the increase in Bumiputera ownership of national wealth as the announcing of the national economic and development policies in 1971 and 1991. Interestingly, Mohammad *et al.* (2011) reported a positive association between Malay directors and earnings management. They argued that the existence of Malay directors on the boards of directors is just to execute the listing requirements of Bursa Malaysia, which states that Bumiputeras should own 30% of the shares. In the Malaysian context as well, Abdul-Rauf, Johari, Buniamin, and Abd Rahman (2012) did not show any relationship between the ethnicity on the boards and the practices of earnings management.

For the effect of ethnicity in the Malaysian auditing area, Che-Ahmad *et al.* (2006) indicated that Bumiputera and Chinese-managed companies have auditors who belong to their ethnic backgrounds. On the other hand, foreign-managed companies have quality-differentiated auditors. They suggested that these findings are in line with the finding that a racial composition of company ownership is one of the determinants in the auditor choice decision. Similarly, Nazri *et al.* (2012) showed that ethnicity is an essential variable, affecting the choice of auditor only for auditor exchanges between Big 4 and non-Big 4 firms. In addition, while Salleh *et al.* (2006) reported no evidence that audit fees are influenced by ethnicity, Yatim, Kent, and Clarkson (2006)

indicated a negative association between the Bumiputera-controlled companies and external auditing fees. They claimed that Bumiputera companies are more related with desirable corporate governance practices compared to other non-Bumiputera companies.

Ahmad-Zaluki (2012) examined 94 IPOs. She intended to study the impact of distinctive culture of Malaysian (Malays, Chinese and foreign female ethnic groups) on IPO underperformance. She found similar results for all the female ethnic groups, whereby the level of underperformance is lower compared to companies whose Malay, Chinese and foreign female directors is less than 50%. However, the difference in the level underperformance between each ethnic group is not statistically significant, meaning that the ethnic variable has no effect on IPOs' underperformance. With respect to the relationship of ethnicity to financial performance, Marimuthu (2008) found that the greater the ethnic diversity on Malaysian companies' boards, the greater the financial performance of companies. Marimuthu (2008) considered ethnic diversity as a valuable variable that should be compulsory for boards of directors in order to get higher performance. Likewise, Marimuthu and Kolandaisamy (2009) reported that financial performance has a positive significant association with ethnic diversity. However, Garba and Abubakar (2014) found that ethnic diversity does not have any significant impact on the performance of companies. Lastly, Carter et al. (2003) found that the existence of minorities on the board has significantly positive associations to company value. In contrast, Carter et al. (2010) found insignificant association, neither positive nor negative, between ethnicity on the boards or the audit committees and financial performance.

Finally, Yunos *et al.* (2012) investigated whether accounting conservatism is related to ethnic diversity (Bumiputera and Chinese) on the boards of directors and the audit committees. They found mixed evidence, whereas the diversity of Bumiputera and Chinese members on the board is related to greater conservatism, Bumiputera and Chinese members on the audit committee is related to lower conservatism. They claimed that there are elements other than ethnicity, which explain the directors' behavior. Further, their mixed findings suggest that the relationship between ethnicity and conservatism is not justified by the individualism concept, political incentives and compensation incentives.

In summary, directors' ethnicity has been examined in several previous studies. With regards to earnings management studies, such as Abdul Rahman and Ali (2006), Mohammad *et al.*, (2011) and Abdul-Rauf *et al.*, (2012), it has been found that board ethnicity does not influence the practice of earnings management. In case of disclosure, prior researches (e.g., Haniffa & Cooke, 2002; Hamzah *et al.*, 2012) found that ethnicity has a significant influence on the disclosure. While some studies have found that ethnicity impacts financial performance (e.g., Marimuthu, 2008; Marimuthu & Kolandaisamy, 2009), other studies have not (e.g., Carter *et al.*, 2010; Garba & Abubakar, 2014). In the area of auditing, ethnicity has been shown to be an important determinant affecting auditor choice (e.g., Che-Ahmad *et al.*, 2006; Nazri *et al.*, 2012) and found to be negatively associated with audit fees (e.g., Yatim *et al.*, 2006).

Since in all the previous reviewed literature, the disclosure accuracy of earnings forecasts in IPO companies has not yet received any attention in terms of the variable

of audit committee ethnicity, therefore, the current study expands the literature by investigating the influence of ethnicity on the accuracy of management earnings forecasts among Malaysian IPO companies.

#### 4.3.6 Audit Committee Stock Ownership

Based on the agency theory, shareholding of audit committee members may possibly influence their motivation to oversee the quality of financial reporting process (Mangena & Tauringana, 2008). Jensen (1989) proposed that outside directors with a large stock ownership are expected to have a higher motivation to oversee managers than directors without such stock ownership. On the other hand, high stock ownership by audit committee members might lead to a negative effect on efficient monitoring of the financial reporting process (Mangena & Tauringana, 2008). The requirements of stock ownership for directors is in order to have "skin in the game," therefore aligning their individual interests with those interests of shareholders of the company (Rose, Mazza, Norman, & Rose., 2013). When audit committee members have higher percentage of stock ownership, they may support the management in order to protect their own interests (Carcello & Neal, 2003). In such a situation, higher shareholding by audit committee members may affect their independence and abilities, leading them to act in their own interest at the expense of other shareholders (Mangena & Pike, 2005).

Audit committee stock ownership has been investigated in relation to earnings management (Bédard *et al.*, 2004; Yang & Krishnan, 2005; Ghosh, Marra, & Moon, 2010; Rose *et al.*, 2013); earnings restatement (Lin *et al.*, 2006); earnings quality

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(Hamdan *et al.*, 2013); internal reporting (Mangena & Tauringana, 2008); and as a mechanism for improving corporate governance (Bolton, 2012).

Focusing on studies related to earnings management practices, Rose *et al.* (2013) showed that directors who owned shares are more expected to resist the efforts of management to manage earnings. However, Bédard *et al.* (2004) and Yang and Krishnan (2005) reported a positive relationship between independent audit committee stock ownership and the likelihood of earnings management practices. The explanation for their finding is that share option schemes for audit committee directors lead to decreasing their independence. On the other hand, Lin *et al.* (2006) and Ghosh *et al.* (2010) found insignificant association between the shares owned by the members of audit committee and the incidence of earnings management.

With regards to studies on interim reports, Mangena and Pike (2005) studied UK listed companies and found a significant negative association between audit committee stock ownership and interim disclosures. They found that the audit committee members' effectiveness in enforcing financial reporting quality may be negatively affected if the directors on the audit committee own large shares in the company. Similarly, the study of Mangena and Tauringana (2008) found a negative and significant association between audit committee stock ownership and external auditor involvement. Finally, Li, Mangena, and Pike (2012) examined the role of audit committee characteristics in monitoring the reporting of non-financial information, including intellectual capital information. They found the intellectual capital disclosure to be negatively related to the shares owned by directors on the

audit committees. Their findings are in line with prior studies (e.g., Yang & Krishnan, 2005; Mangena & Pike, 2005; Mangena & Tauringana, 2008).

Hamdan *et al.* (2013) found that stock ownership by directors of the committee result in decreasing their independence and restrict their capability to improve earnings quality. This finding is not in line with the fact that when directors own shares in the company, they will pay more attention to the governance practices of their company, in order to restrain the management from conducting poor financial reporting, and to support greater disclosure quality in the company's financial reports. As a result, earnings quality could be increased if audit committees comprise members who have a greater stock ownership in the company.

Finally, for evidence on the audit committee ownership and financial performance, Bolton (2012) revealed that companies with higher audit committee stock ownership have superior performance. Bolton (2012) showed that greater stock ownership can provide very effective corporate governance if the interests of principals and agents are aligned well.

In sum, by reviewing the prior literature, audit committee stock ownership has been examined with other issues or proxies of financial reporting quality. For example, it has been reported to be positively related to earnings management in studies by Bédard *et al.* (2004) and Yang & Krishnan (2005). Some studies have found no evidence that audit committee stock ownership has any influence on earnings management (e.g., Lin *et al.*, 2006; Ghosh *et al.*, 2010).

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Up to now, there is no direct study that has investigated the effect of audit committee stock ownership on the accuracy of earnings forecasts as a single independent variable. It has been included in the previous studies with insider ownership but not related to corporate governance. Therefore, the present study adds to the body of literature by investigating the association between the shares owned by the members of audit committee and the accuracy of management earnings forecasts included in Malaysian IPO prospectuses.

#### 4.3.7 Audit Committee Educational Background

Gray (1988) acknowledged education as an institutionally important factor that can influence accounting values and practices. The resource-dependence theory proposes that directors bring many resources to the boards, such as expertise, different perspectives, ties to other companies and legitimacy (Pfeffer & Salancik, 1978). Hillman, Cannella, and Harris (2002) investigated how directors are different in terms of race and gender by exploring differences in occupation and educational level. They showed that the resource-dependence theory postulates that not many white male directors have the education, skills and resources; hence by choosing a more highly educated female, the skills' portfolio of the board can be maximized.

Focusing on earnings management and education, Qi *et al.* (2012) indicated that managers with higher educational levels are more expected to be involved in earnings management compared to managers with lower educational levels. In another study, Qi and Tian (2012) failed to report significant association between audit committee directors' level of education and earnings management. However, Berger, Kick, and

Schaeck (2013) found that the existence of executive directors with Ph.D. certificates is related with a decline in the risk of portfolio. For the studies related to company performance and education, Simons and Pelled (1999) showed that both educational level and cognitive diversity (knowledge, values and perception) are positively related to company performance. Bhagat, Bolton, and Subramanian (2010) showed that there is no systematic association between the level of CEO's education and company performance. While CEOs with a Master's of Business Administration (MBA) degree might support the short-term performance of their companies, there is no association between CEOs' educational backgrounds and their companies' long-run performance. Moreover, Ararat *et al.* (2010) reported that the good overseeing task of boards and company performance are positively associated with board diversity represented by education and other variables. They concluded their study by stating that the diversity of the boards leads to improved overseeing, reduced agency conflict and improved company performance.

In contrast, Gottesman and Morey (2006) did not find support that companies with CEOs from high reputable schools perform better than those from low reputable schools. Additionally, they reported that companies directed by CEOs with an MBA or a law degree do not outperform those companies with CEOs who do not possess a post-graduate degree. In addition, Rose (2007) found no association between the educational background of the boards of directors and company performance. Finally, Jalbert, Furumo, and Jalbert (2011) showed that possessing an undergraduate degree is insignificant in interpreting a return on assets or return on investment, but is positively significant in interpreting return on equity.

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Bantel (1993) examined the relationship of top management education with strategic clarity. Bentel showed that good strategic decision-making is associated with higher levels of education and functional background diversity among top management teams. Further, the study of Dionne and Triki (2005) examined whether the independence and financial knowledge of the board and audit committee are associated with company activities of risk management (investment opportunities and leverage). Their results showed that companies with fully financially educated audit committee members and a majority of financially educated directors have the ability to deal with more risks. Moreover, they found that educational level of the members serving on the board, but not serving on the audit committee, is a significant factor in the hedging level. Finally, Dionne and Triki (2005) reported that the performance of audit committee members is influenced by their educational background.

Relying on the previous literature related to directors' educational background, it is worthy to extend this literature by examining the effect of educational background of directors sitting on the audit committee of IPO companies on the accuracy of management earnings forecasts. Over and above this, Ahmad-Zaluki and Wan-Hussin (2010) suggested that future studies related to audit committee's educational background and earnings forecasts are needed.

## 4.3.8 Audit Committee Experience

It has been claimed that the experience that audit committee members possess, is considered a significant aspect of the effectiveness of audit committee (DeZoort, 1998). This experience is defined as the total time that has been spent serving in positions related to assigned companies' monitoring and oversight tasks (DeZoort, 1998). DeZoort (1997) and Lee and Stone (1997) indicated that to undertake their identified tasks and duties regarding effective monitoring, audit committee members need to possess adequate and relevant level of experience. Ferreira (2010) argued that the resource-dependence perspective is valuable when utilizing attributes, such as functional background, experience and social and political connections.

Focusing on earnings management and experience, surprisingly, Qi et al. (2012) indicated that managers with financial working experience do more earnings management compared to managers without such working experience. Their results can be attributed to the fact that earnings management behavior is very common in Chinese listed companies (Chen, Lee, & Li, 2008); therefore, top executives with financial working experience are more expected to practice the earnings management. There is some previous literature that draws attention to the importance of members of the audit committee having the needed experience as part of the whole committee's effectiveness. For instance, McMullen and Raghunandan (1996) showed that companies with audit committee members who have a Certified Public Accountant (CPA) qualification (for which having experience is one of its requirements), have been found to have no financial reporting problems. DeZoort (1998) investigated the influence of audit committee members' experience on their monitoring decisions. His findings show that both general domain and task specific experience make a considerable differentiation in audit committee members' internal control evaluation. One essential point that DeZoort found is audit committee members who have experience can undertake the judgment and decisions of internal control more like auditors than members of audit committee without such experience can. Furthermore,

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the findings indicate that experienced members of audit committees can undertake more consistent and reliable judgments, have greater self-insight and greater harmony, compared to audit committee members without such experience.

Qi and Tian (2012) showed that audit committees with directors who have financial working background can oversee the practicing of earnings management better than audit committee members without this working experience background. Matsunaga and Yeung (2008) examined the differences in companies' financial reporting and policies of disclosure related to having a CEO who has prior work experience as a CFO (an ex-CFO). Their results show that companies that are managed by ex-CFOs are inclined to contain higher accuracy of analysts' forecasts that are less dispersed and less unstable. Furthermore, companies that are controlled by ex-CFOs disclose less good news regarding earnings forecasts, but the good news forecasts they disclose are considered to be very accurate. Generally, their results propose that the accuracy of companies' financial disclosures results from the CEO's financial experience.

For experience and IPO underpricing, Van der Zahn, Singh, and Singh (2008) found that the underpricing of IPO companies, which include a minimum of one member on the audit committee who are independent and have previous IPO launching experience, is significantly lower than IPO companies that do not include such experienced independent audit committee members. They argued that about 59.33% of their sample is found to have at least one member on the audit committee who is independent with previous experience regarding launching of IPOs. This greater percentage provides higher credibility to the IPO companies as well as additional knowledge and understanding of the procedures related to launching of new IPOs.

From the previous studies, it is obvious that there is scarcity of literature related to audit committee experience. Ahmad-Zaluki and Wan-Hussin (2010) mentioned that the professional membership of the audit committee does not lead to the important task of overseeing the accuracy of the disclosed information in the IPO prospectus; thus they proposed that additional characteristics of the audit committee related to their working experience should be investigated. Motivated by the recommendation of Ahmad-Zaluki and Wan-Hussin (2010) and by acknowledging the fact that experience is vital for audit committee members, the present study contributes and adds to the literature by investigating the impact of audit committee experience on the accuracy of earnings forecasts included in Malaysian IPO prospectuses.

# **4.4 Control Variables**

In addition to the experimental variables, the current study draws upon prior researches to identify controls for other factors that are expected to be associated to the accuracy of management earnings forecasts of IPO prospectuses. These control variables include board's characteristics (size, independence, CEO duality, family ownership and management ownership); signaling variables (underwriter's reputation and auditor's quality); and IPO company-specific characteristics (size, age, forecast horizon and leverage). In the empirical tests, this study includes these control variables and estimates whether audit committee characteristics affect the accuracy of

IPO management earnings forecasts. This section discusses the argument behind using these variables as control variables.

It has been found by Certo *et al.* (2001) and Filatotchev and Bishop (2002) that there is an important task for some board attributes in IPOs. Since the boards of directors have the authority to control the membership of audit committees, it undertakes an essential role in determining the extent of expertise and independence of the audit committee (Baxter, 2007). Therefore, the effectiveness of audit committee could be affected by the board's governance that simultaneously operates in the company (Bédard & Gendron, 2010). Hence, this study includes board attributes as control variables in the analysis model. Furthermore, as the board agrees on the charter of the audit committee, the board can influence the rate of meetings of audit committee and the duties of the committee. Therefore, the more the board of directors' meetings, the more the meetings of the audit committee in order to discuss the issues of financial reporting and other issues indicated by the board (Baxter, 2007). When the board of directors officially approves the financial statements that are prepared by the management, it would be possible for the audit committee to influence the financial reporting quality. Further, previous studies have reported that the ownership structure is associated with the quality of earnings in East Asia (Fan & Wong, 2002; Ibrahim & Ismail, 2012). The concentrated ownership structures in East Asia produce agency conflicts between the outside investors and controlling shareholders. Companies in Malaysia are mainly family-controlled (Faccio & Lang, 2002; Lins, 2003). The agency theory proposes that agency costs are a function of ownership of management (Jensen & Meckling, 1976). For an IPO company, where expected investors come upon potential wealth transfers to parties directly related to the company, agency costs

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are expected to be reliant on owned shares by these parties (Mak, 1996). As can be seen from prior arguments, the board of directors may have an influence on the relationship between the audit committee and accuracy of disclosed earnings forecasts. Therefore, and based as well on prior research (Beasley & Salterio, 2001; Klein, 2002; Peasnell, Pope, & Young, 2005; Zhang *et al.*, 2007; Bédard *et al.*, 2008; Mnif, 2010; Ahmad Zaluki & Wan-Hussin, 2010), the following board's characteristics are included as control variables: the total number of directors on the board, the percentage of independent directors serving on the board, CEO duality, family ownership and management ownership.

Based on the previous literature (e.g., Keasey & McGuinness, 1991; Chen *et al.*, 2001; Jog & McConomy, 2003; Mnif, 2010; Ahmad-Zaluki & Wan-Hussin, 2010; Firth *et al.*, 2012), the present study includes underwriter's reputation and auditor's quality as control variables. Aharony, Lin, and Loeb (1993) claimed that reputable auditors and underwriters have higher incentives for providing more quality and accurate information about IPOs in order to stay away from litigation risks and losing of prestige. Consequently, the practice of earnings management is more likely to be reported and found out by auditors and underwriters who are of greater quality (Ahmad-Zaluki, Campbell, & Goodacre, 2011). In addition, Ahmad-Zaluki *et al.* (2011) argued that directors of IPO companies are likely to make agreements with high-quality auditors and underwriters when the signaling benefits surpass the expected IPO short-run losing of wealth resulting from mitigated earnings management. The audit committee has an essential responsibility in improving the communication between the board and those auditors, as well as in preserving and enhancing the independence of external auditors.

Auditors can also perform a main task in identifying the characteristics of the audit committee and quality of financial reporting. Baxter (2007) suggested that higher quality auditors have greater motivations to support their clients' boards of directors in developing the expertise and independence of audit committee members. Baxter claimed that these attributes of audit committee are expected to impact the quality of financial reporting. Overall, the high-quality underwriter and auditor would not like to lose their reputation; so preparing IPO prospectuses with accurate information will help in maintaining their reputation. Therefore, the underwriter's reputation and auditor's quality are included as control variables in the current study.

Finally, a number of company-specific characteristics are included as control variables that are found or expected to influence audit committee characteristics and/or the accuracy of IPO earnings forecasts. These characteristics are company size, age, forecast horizon and leverage. The including of these variables is based on previous empirical research (e.g., Firth & Smith, 1992; Jelic *et al.*, 1998; Lonkani & Firth, 2005; Mnif, 2010, Ahmad Zaluki & Wan-Hussin, 2010; Firth *et al.*, 2012).

# 4.5 Summary and Conclusion

This chapter incorporates a review of the literature related to the characteristics of audit committee and the accuracy of IPO management earnings forecasts, as well as other related issues, as the key focus of this study. This chapter starts by showing the concept of audit committees. Then, the third section reviews the prior studies on the characteristics of audit committee and accuracy of management earnings forecasts. After reviewing this literature, several notes are highlighted. The studies show mixed
results in most cases. In addition, there is a lack of empirical studies in Malaysia or elsewhere on the impact of corporate governance, specifically, audit committee on the accuracy of management earnings forecasts disclosed in IPO prospectuses. Furthermore, previous studies have ignored some variables that might have an effect on earnings forecasts, such as audit committee gender, audit committee ethnicity, audit committee stock ownership, audit committee educational background and audit committee experience. In the fourth section of this chapter, the groups of control variables that are used in the present study are highlighted.

After discussing literature review, the next chapter discusses research methods adopted in the current study.

# **CHAPTER FIVE**

# **RESEARCH METHODS**

### **5.1 Introduction**

This study investigates the relationship between the characteristics of the audit committee and the accuracy of management earnings forecasts disclosed in Malaysian IPO prospectuses. While the previous chapter discussed and reviewed the related literature of the present study, research methods are discussed in this chapter. The current chapter is structured as follows: Section 5.2 reviews and discusses the theoretical framework of the study. Section 5.3 presents and develops testable hypotheses related to the accuracy of management earnings forecasts according to the issues identified and reviewed in the previous chapter. The measurements of variables, models used in the study and methods of statistical data analysis are presented in Section 5.4, 5.5, 5.6 and 5.7, respectively. Then, data collection process is discussed in Section 5.8. This chapter ends with a summary in Section 5.9.

# **5.2 Theoretical Framework**

Drawn from literature review, Figure 5.1 shows the diagrammatic representation of the theoretical framework investigated in this study. The diagram presents all the variables examined in this current study. According to the agency, signaling and resource-dependence theoretical frameworks, this study includes the audit committees' attributes to present evidence of their monitoring and controlling responsibility as an important mechanism of corporate governance structure to reduce agency costs, represent a good signal for investors and provide a company with needed resources, thereby enhancing the accuracy of management earnings forecasts.

As can be seen in Figure 5.1, the current study examines the relationship between the audit committee characteristics (size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background and experience), which are the independent variables and accuracy of management earnings forecasts as the dependent variable.

The control variables, i.e., board variables (size, independence, CEO duality, family ownership, and management ownership), signaling variables (underwriter's reputation and auditor's quality), company-specific characteristics (size, age, forecast horizon and leverage) are utilized in the analysis. According to the prior studies (e.g., Mnif, 2010; Ahmad-Zaluki & Wan-Hussin, 2010; Firth *et al.*, 2012; Ibrahim & Ismail, 2012), these variables are included since they have been reported to have an effect on the accuracy of IPO management earnings forecasts.



Figure 5.1

Theoretical Framework

#### **5.3 Hypotheses Development**

This section discusses the related hypotheses of this study. It contains two subsections: Section 5.3.1 discusses the hypothesis related to regulation and accuracy of management earnings forecasts. Then, Section 5.3.2 discusses the hypotheses about audit committee characteristics and accuracy of management earnings forecasts.

### **5.3.1 Regulation and the Accuracy of IPO Management Earnings Forecasts**

Malaysian companies making IPOs were mandated to include next year's earnings forecasts in the new prospectus until February 2008, when the regulations changed to voluntary status. In Greece, Gounopoulos and Skinner (2010) found that pessimistic bias during the compulsory period turned to optimistic bias in the voluntary period. They showed that the accuracy of earnings improved after the regulation changed to voluntary disclosures, whereby companies that make forecasts are considered as mature companies. Further, they found that for the year following an IPO, the magnitude of earnings management is much higher for mandatory forecasts companies than for companies that issued forecasts under the voluntary regime. Finally, they indicated that high underpricing can be a signal for greater absolute forecast error, particularly for IPOs listed under a mandatory disclosure regulation. On the other hand, they found that IPOs under a voluntary forecast regime have a much lower level of underpricing.

In recent evidence, Heflin *et al.* (2012) indicated that pre-regulation FD concerning the management earnings forecasts are found to be optimistically biased, however post-FD

earnings forecasts are related with fewer biases. Additionally, they found that post-FD forecasts are associated with more accuracy than the period before FD. In agreement with the declining in the forecasts bias and increase in its accuracy resulting in improved credibility, their evidence proposes post-FD forecasts are more informative to investors.

Pedwell *et al.* (1994) conducted a comparison between the mandatory earnings forecasts in New Zealand versus the voluntary earnings forecasts in Canada. They found that the mandatory disclosure regime may be unsuitable for some companies, particularly those companies, which are still in a start-up position and operating in great unstable environment. In other words, these companies are not expected to possess the necessary resources and experience to provide accurate forecasts. Pedwell *et al.* (1994) showed that the mandatory earnings forecasts can force companies to forecast when they neither have the incentives nor the ability to do so. Consequently, from this point of view, mandatory forecasts might actually reduce the value of earnings forecasts as a signaling tool by requiring companies that would not otherwise forecast, to do so. Their findings indicate that regulations preventing such companies from forecasting could be a more suitable regulatory policy.

In China, Sun and Liu (2009) investigated the effect of changing the regulation of disclosure from mandatory to voluntary on the credibility of earnings forecasts. They indicated that there is an insignificant difference in either forecast bias or forecast accuracy between voluntary and mandatory disclosure. Based on the above previous studies and arguments, this study hypothesizes that:

- **H1a:** IPO management earnings forecasts have been more optimistic under the voluntary regime than mandatory regime.
- **H1b:** IPO management earnings forecasts have been more accurate under the voluntary regime than mandatory regime.

# 5.3.2 Audit Committee Characteristics and Accuracy of IPO Management Earnings Forecasts

The current study specifically tests for any relationship between the characteristics of audit committee and accuracy of management earnings forecasts of Malaysian IPO companies. A total of eight characteristics of audit committee are considered and hypotheses developed as to their likely effect on the accuracy of IPO management earnings forecasts. These audit committee characteristics are size (ACSIZE), independence (ACIND), financial expertise (ACFEX), gender diversity (ACGED), ethnicity (ACETH), stock ownership (ACSOW), educational background (ACEDU), and experience (ACEXP). Based on the previous studies (e.g., Bédard et al., 2008; Ahmad-Zaluki & Wan-Hussin, 2010) the first three characteristics (ACSIZE, ACIND and ACFEX) have been chosen as independent variables that might be associated with the accuracy of IPOs' earnings forecasts. Further, they are the common characteristics that regulators in Malaysia or elsewhere have placed considerable importance on them. The other five characteristics (ACGED, ACETH, ACSOW, ACEDU, and ACEXP) are included in this study because they are important aspects of audit committee characteristics that might have an impact on the performance and effectiveness of the audit committee. Further, as highlighted earlier in Section 1.4 of Chapter one, these characteristics are supposed to determine the accuracy of IPO earnings forecasts. In line

with the related theories and supported empirical evidence, the next section discusses and summarizes the hypotheses development on each of the variables mentioned.

### **5.3.2.1 Audit Committee Size (ACSIZE)**

Li *et al.* (2012) suggested that the size of audit committee is considered one of the major attributes that enhances its effectiveness and can have a meaningful influence on the financial reporting quality. Mangena and Pike (2005) indicated that audit committee should comprise adequate resources and authority to undertake its functions effectively. Further, Bédard *et al.* (2004) showed that the larger audit committee has the ability to uncover and solve the expected problems related to the process of financial reporting. They argued that larger size is expected to give the required power and variety of perspectives and expertise to guarantee an effective audit committee. Vafeas (2005) showed that when the audit committee size is too small, then there will not be enough directors to perform its tasks and, therefore its monitoring effectiveness will be reduced.

Evidence from previous empirical studies proposes that the companies, which its audit committees including a large number of directors are more effective in overseeing the management. These studies show that audit committee size is related to more accurate earnings forecasts (e.g., Ahamad-Zaluki & Wan-Hussin, 2010); reduced earnings management (e.g., Yang & Krishnan, 2005; Amar, 2014); reduced occurrence of earnings restatement (e.g., Lin *et al.*, 2006); and higher financial reporting quality (Felo *et al.*, 2003). The BMLR require the boards of directors to establish an audit committee comprising no fewer than three members. The notion is that with many audit committee

directors, more diverse skills and knowledge can be utilized by the committee to improve its monitoring role, thus decreasing the likelihood of experiencing management opportunistic behavior, resulting in higher accuracy of management earnings forecasts. This is consistent with the resource-dependence theory (Pearce & Zahra, 1992). In accordance with the discussion above and in line with the resource-dependence theory and prior studies, the current study tests the following hypothesis:

**H2:** Audit committee size is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

### **5.3.2.2** Audit Committee Independence (ACIND)

Independent audit committees have the ability to develop the quality and reliability of financial reporting (Baxter & Cotter, 2009; García-Meca & Sánchez-Ballesta, 2009); and promote objectivity (Yatim *et al.*, 2006). Klein (2002), Carcello and Neal (2003), Mangena and Pike (2005), and Siagian and Tresnaningsih (2011) suggested that independent audit committees are more expected to be free from the pressure of the management effect. Therefore, they will be in the best position to act as vital monitors to guarantee the quality of the reporting process, hence decreasing the level of information asymmetry that causes low quality of earnings. On the empirical front, evidence shows that independence of directors on audit committees are related to more accurate earnings forecasts (e.g., Ahmad-Zaluki & Wan-Hussin, 2010); reduced earnings management (e.g., Klein, 2002; Bédard *et al.*, 2004; Davidson *et al.*, 2005; Saleh *et al.*, 2007; Amar, 2014; Salleh & Haat, 2014); greater earnings quality (e.g., Bradbury *et al.*, 2006; Siagian

& Tresnaningsih, 2011); and reduced occurrence of financial restatements or fraud (e.g., Abbott *et al.*, 2004; Owens-Jackson *et al.*, 2009).

The revised MCCG (2007) strengthens the responsibility of audit committees by stipulating that audit committees should fully consist of non-executive directors. Based on the agency theory, it is claimed that audit committees with independent directors can improve corporate governance because they can find solutions for disagreement among internal managers (Fama & Jensen, 1983). This will help in alleviating some of the agency issues that lead to low quality of earnings. In line with the agency theory, regulators and with the findings of a number of prior empirical researches, the present study assumes that independent directors enhance the ability of the committee to better perform its functions and have a positive influence on the accuracy of earnings forecasts. Therefore, this study tests the following hypothesis:

**H3:** Audit committee independence is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

# **5.3.2.3** Audit Committee Financial Expertise (ACFEX)

Bédard *et al.* (2004) showed that audit committee directors should have the needed expertise to discharge their functions of overseeing internal control and financial reporting. The justification behind this is that members' understanding of the auditors' judgments and determining the essence of divergence between management and external auditor will be improved by having financial expertise (Mangena & Pike, 2005). Previous empirical studies have established that financial expertise on the audit committee increases the accuracy of analysts' earnings forecasts (Abernathy et al., 2013); reduces forecast errors (Truong & Dunstan, 2011); reduces earnings management (e.g., Klein, 2002; Xie et al., 2003; Bédard et al., 2004; Carcello et al., 2006), thus leading to less incidence of financial reporting restatements (e.g., Abbott et al., 2004; Huang & Thiruvadi, 2010); increased earnings quality (e.g., Dhaliwal et al., 2006; Baxter & Cotter, 2009); improved quality of financial reporting (e.g., Felo *et al.*, 2003); and enhanced internal control and disclosure (e.g., Mangena & Pike, 2005; Zhang et al., 2007). These studies propose that financial experts have a good understanding of how earnings are being manipulated, therefore they may mitigate the level of earnings management and enhance the disclosure accuracy of reported earnings. Karamanou and Vafeas (2005) showed that as management has good news to release, audit committee financial expertise is imperative to the decision of whether to disclose a forecast. Under BMLR, it is required that all directors on the audit committee should be financially literate with a minimum of one of them being associated with an accounting association or body, such as the MIA.

Consistent with the resource-dependence theory, regulations and the above studies and arguments, it is suggested that financially knowledgeable audit committee members who possess financial and accounting qualifications are more likely to emphasize on the accuracy of management earnings forecasts. Thus, the following hypothesis is proffered:

**H4:** Audit committee financial expertise is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

#### **5.3.2.4** Audit Committee Gender Diversity (ACGED)

The existence of women directors on the board is expected to lead to more independent and diligent boards (Gul *et al.*, 2008). From the perspective of the resource-dependence theory, companies have the capability to attract, employ and preserve a stream of resources from their outside environment (Pfeffer & Salancik, 1978). Gender diversity is considered as one of these resources. Companies that comprise female and individuals of varying ethnicities and races on its board are likely to enhance the variety of perspectives for the problem-solving and strategic planning processes (Ruigrok, Peck, & Keller, 2006), which may lead to better monitoring for earnings disclosure. Peni and Va"ha"maa (2010) indicated that the quality of financial reporting is expected to be impacted by gender differences, particularly in risk aversion, conservatism and ethical behavior.

The evidence from empirical studies reports that a company with women on its board shows better earnings quality (e.g., Krishnan & Parsons, 2008; Srinidhi *et al.*, 2011); reduced earnings management (e.g., Gul *et al.*, 2007; Wei & Xie, 2010; Thiruvadi & Huang, 2011; Gavious *et al.*, 2012); and better financial performance (e.g., Erhardt *et al.*, 2003; Carter *et al.*, 2003; Farrell & Hersch, 2005; Dunstan *et al.*, 2011; Garba & Abubakar, 2014). To summarize, previous studies find that the existence of female directors develops the process of monitoring, provides a sign of better governance practices, simplifies the disclosure of value-relevant, and reduce the level of information asymmetry. Consequently, if gender diversity leads to an enhancement in the information disclosure of companies and the better the disclosure, the better the

disclosed earnings forecast is, this study expects a positive link between the audit committee gender diversity and the average level of earnings forecasts accuracy. Therefore, and in line with the resource-dependence and signaling theories, the hypothesis is stated as follows:

**H5:** Audit committee gender diversity is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

## 5.3.2.5 Audit Committee Ethnicity (ACETH)

According to the resource-dependence theory, it is said that the board of directors is an important mechanism to improve and make coalitions with stakeholders who control the required resources of a company (Westphal & Milton, 2000). Crano and Chen (1998) suggested that directors of different backgrounds can provide diverse sociological views and understandings on the process of decision-making. Greater diversity, i.e., gender and ethnic backgrounds, can boost the boards' impact on a company's performance and strategies (Van der Zahn *et al.*, 2008). This may result in better overseeing for earnings disclosure. The difficulties of an uncertain and dynamic business environment can be addressed with boards having greater diversity (Daily, Certo, & Dalton, 1999). On the other hand, if all the board members are in congruence in terms of their perceptions, views and backgrounds, it is likely that the strategies of decision-making undertaken by them will be single-minded and inflexible (Westphal & Zajac, 1998; Dalton, Daily, Johnson, & Ellstran, 1999).

Previous empirical studies have shown that ethnicity leads to better disclosure (e.g., Haniffa & Cooke, 2002; Hamzah et al., 2012); affects auditors' choice (e.g., Che-Ahmad et al., 2006; Nazri et al., 2012); affects audit fees (e.g., Yatim et al., 2006); leads to better financial performance (e.g., Marimuthu, 2008; Marimuthu & Kolandaisamy, 2009); and positively affects the company value (e.g., Carter et al., 2003). Therefore, if ethnicity supports the board's abilities in strategic development and decision-making, it is likely that such advantages will spill-over to key sub-committees, such as audit committee (Van der Zahn et al., 2008). It has been argued by Johl, Subramaniam, and Zain (2012) that Malay directors are supposed to have greater levels of reputational risk for poor business management. As such, Malay directors are likely to undertake strong monitoring role on the IPO managers. Therefore, IPO management may perceive the quality of the corporate governance and business by issuing accurate earnings forecasts. Further, Anderson, Reeb, Upadhyay, and Zhao (2011) dispute that the diversity of director (e.g., ethnicity) could provide benefits to the companies by providing several heuristics, superior problem-solving abilities, and enhanced mutual monitoring among directors. If diversity among the directors increases monitoring effectiveness and creates good communication with external stakeholders, it can be expected a more reliable and accurate earnings forecasts to be associated with such boards. Hence, in line with the resource-dependence theory and the above arguments, it is reasonable for the current study to come out with the following hypothesis:

**H6:** Audit committee ethnicity is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

### **5.3.2.6** Audit Committee Stock Ownership (ACSOW)

There is a twofold argument about the influence of audit committee member's shareholding. On the one hand, according to the agency theory, it is claimed that directors who have high ownership share are supposed to have benefits that comply more with shareholders, and hence, they might have stronger motivations to oversee management (Mangena & Pike, 2005; Karamanou & Vafeas, 2005). This implies that a high percentage of stocks owned by the directors of audit committee can be anticipated to develop the overseeing process of the financial reporting and enhance the quality of disclosure. On the other hand, having higher stock ownership by directors is more likely to lead to entrenchment (Li *et al.*, 2012), meaning that managers may have greater incentives to exercise discretion in accounting reporting. This also might be damaging to the audit committee's independent overseeing of the financial reporting process. Niu (2006) indicated that when stockholding by directors is high, the credibility of the financial reporting may be compromised.

Previous empirical studies have shown mixed results. Vafeas (2005) reported that shares owned by the members sitting on the audit committee enhance the quality of financial reporting. On the contrary, Bédard *et al.* (2004) and Yang and Krishnan (2005) reported a positive relationship between shares owned by independent audit committee members and quarterly earnings management. Further, Mangena and Pike (2005) showed a significant negative association between stock ownership held by audit committee members and disclosure in interim financial reports. Lin *et al.* (2006) did not report

significant association between stock ownership by audit committee directors and the incidence of earnings restatements.

To this end, present study predicts that the ratio of audit committee stock ownership will effect the supervision performance of the committee, which in turn will influence the executive's reliability level and earnings forecasts. In the case of IPO audit committees with great ownership, they are likely to employ pressure on management to discourage them from engaging in issuing over-forecasted or inaccurate earnings while going public. To further examine the association between members' of audit committee stock ownership and the accuracy of management earnings forecasts of Malaysian IPO companies, and in line with the above arguments, the current study tests the following hypothesis:

**H7:** Audit committee stock ownership is associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

## **5.3.2.7** Audit Committee Educational Background (ACEDU)

Hamid (2008) indicated that if boards of directors are well-educated in accounting or finance, they will actively participate in the decision-making processes; at the very least, they will question management on any decisions made and expect to get answers. This would reduce the control of the boards of directors by the CEO, enabling the board to efficiently monitor management. Previous empirical studies have shown the positive effect of directors' educational background. Bantel (1993) indicated that a higher level of education might be related to a good strategy of decision-making. Simons and Pelled

(1999) found that educational level is positively related to the company's performance. In another study, Dionne and Triki (2005) reported that financially educated audit committee members have the capability to deal with more risks. Moreover, Ararat *et al.* (2010) showed that educational background of boards leads to improving their monitoring role and reducing agency conflict.

Educated directors would carry out their monitoring role more efficiently by meeting more often and by releasing more information. Further, education diversity is more likely to improve variety of perspectives on boards (Hillman *et al.*, 2002), improve the independence, and thus its ability to perform (Ararat *et al.*, 2010). Moreover, better educated managers may pay more attention to the business strategies of the company, especially in the long run (Qi *et al.*, 2012). Based on the above arguments, and in line with the resource-dependence theory, this study assumes that better educated audit committee directors can have a greater understanding of management earnings forecasts strategies relative to less educated directors, and thus educational background of audit committee members may play a vital role in improving the quality of earnings reporting. Therefore, this study hypothesizes that:

**H8:** Audit committee educational background is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

# **5.3.2.8** Audit Committee Experience (ACEXP)

The IPO procedures are certainly a very difficult process not only legally but also practically (Van der Zahn *et al.*, 2008). DeZoort and Salterio (2001) indicated that audit

committee directors who possess prior experience related to financial reporting and audit can make expert judgments. Moreover, Matsunaga and Yeung (2008) found that companies that are controlled by ex-CFOs disclose more accurate good news forecasts. Van der Zahn *et al.* (2008) showed that in terms of IPO underpricing, an audit committee that includes a minimum of one independent director with previous experience in launching IPOs, is considerably found to be less than IPOs without such experience. Xie *et al.* (2003) and Qi and Tian (2012) proposed that the directors on audit committees who possess a financial background or working experience are expected to have a greater understanding of earnings management practices compared to directors without such background or experience.

If audit committee comprises directors with previous IPO launching experience, it is more expected to assist the issuing company to deal with regulatory requirements and improve the appropriate strategies of disclosure and reporting that would ensure the quality of information required by the interested parties (Van der Zahn *et al.*, 2008). That is, the directors' experience may give them a better knowledge concerning the relevance value of earnings forecasts and its accuracy. In accordance with the resourcedependence theory and in line with the above argument, this present study suggests that audit committee members having experience are expected to be more effective in overseeing and controlling the process of issuing IPO earnings forecasts due to their familiarity with it. Therefore, the current study hypothesizes that:

**H9:** Audit committee experience is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.

### **5.4 Measurement of Variables**

Measurement of variables is discussed in three subsections. Section 5.4.1 includes measurement of the dependent variable; Section 5.4.2 discusses the measurement of the independent variables; and Section 5.4.3 reviews the measurement of the control variables, as follows:

### **5.4.1 Measurement of Dependent Variable**

The quality of management earnings forecasts is measured by earnings forecast accuracy. The most broadly employed forecast error metrics are absolute forecast error and squared forecast error (Firth & Smith, 1992; Gounopoulos, 2003). Thus, this study utilizes these two measurements. Table 5.1 provides a summary of the measurements used in this study.

First, to get the absolute and squared forecast error, the forecast errors should be calculated. The forecast errors reveals the difference between the actual and forecasted earnings (Jaggi, 1997). It has been reported that this measure of forecast errors estimates the bias in the earnings forecasts, which mostly indicates the direction of whether IPO management have been pessimistic or optimistic in their earnings forecasts (Cheng & Firth, 2000; Hartnett & Römcke, 2000; Chen *et al.*, 2001; Siougle, 2003; McGuinness, 2005; Ismail & Weetman, 2007).

Forecast errors is considered the basic utilized forecast measure. It is calculated as:

$$FER_{it} = (AE_{it} - FE_{it}) / |FE_{it}|$$

Where:

 $FER_{it}$  = forecast errors;

 $AE_{it}$  = actual earnings of company i for the period t;

 $FE_{it}$  = forecasted earnings as given in the IPO prospectus of company i for the period t.

Following the studies of Chan *et al.* (1996), Lonkani and Firth (2005), and El-Rajabi and Gunasekaran (2006), this study utilizes the forecasts and actual earnings after tax (which are disclosed in the prospectus and in the first published annual report) in the calculation of earnings forecasts bias and accuracy. The difference between the actual earnings and the forecasts earnings is scaled by the forecasts earnings<sup>12</sup>. Earnings forecasts are considered biased if the actual earnings are systematically over or under the forecasted earnings. IPO companies' forecasts are optimistically biased if forecast earnings are higher than actual earnings (FER is less than 0), indicating that companies have overforecasted their earnings. Conversely, if forecast earnings are less than actual earnings (FER is more than 0), these forecasts are conservative or pessimistically biased,

<sup>&</sup>lt;sup>12</sup> One substitute is to be divided on the actual earnings. A difficulty in employing actual earnings in this study is that, if there are some companies with negative earnings in the sample or very close to zero, there will be extremely large earnings errors and absolute forecasts errors. So, the absolute value of forecasted earnings is used as the denominator to prevent the mistake in calculating the forecast errors because of the negative value of the denominator or the values very close to zero (Chen & Firth, 1999). Prior studies have widely scaled forecast errors by forecast earnings (e.g., Chan *et al.*, 1996; Firth & Smith, 1992; Mohamad *et al.*, 1994; Jelic *et al.*, 1998; Ahmad-Zaluki & Wan-Hussin, 2010). Jaggi (1997) and Lonkani and Firth (2005) are the exception; they used the actual earnings as the denominator.

indicating that companies have under-forecasted their earnings. Jaggi *et al.* (2006) indicated that managers have greater incentives to increase the proceeds of their IPO by communicating positive signals to the market participants about the expected performance of the company using optimistic forecasts.

Although the mean forecast errors is derived from the measure of signed error, it does not give dependable information concerning the average size of forecast errors. Jaggi (1997) attributed this to the fact that positive and negative forecasts errors revoke each other out. Thus, for the accuracy of forecasts to be identified on an average basis, over-forecasting and under-forecasting of earnings are supposed to be involved in the calculation, and for this reason, the measure of absolute forecast error (AFER) can be observed to be suitable (Jaggi, 1997).

# 5.4.1.1 Absolute Forecast Error

The absolute forecast error is calculated as the absolute value of actual earnings minus the forecasted earnings, divided by forecasted earnings. The indication of the error is omitted when measuring absolute forecast error.

The absolute forecast error is calculated as follows:

 $AFER_{it} = |FER_{it}|$ 

$$AFER_{it} = \left| (AE_{it} - FE_{it}) \right| / \left| FE_{it} \right|$$

Where:

- $AFER_{it}$  = Absolute forecast error;
- $AE_{it}$  = Actual earnings of company i for the period t;
- $FE_{it}$  = Forecasted earnings of company i for the period t.

The mean AFER should be lower in value and not be significantly different from zero when the management of the IPO company makes an accurate forecast. While the mean of FER across all IPO companies shows a sign of the biasedness of forecast errors (inclusive of sign), the average of absolute forecast error (AFER) shows the general level of accuracy (without considering whether the forecast is optimistic or pessimistic) (Chen & Firth, 1999; Brown *et al.*, 2000; How & Yeo, 2001). In addition to representing the overall accuracy, AFER provides some insight into how near to actual earnings the forecasts are (Gounopolos, 2003). Karamanou and Vafeas (2005) proposed that the sign of the reliability of management can be represented by the accuracy of management earnings forecasts.

# 5.4.1.2 Squared Forecast Error

Some researchers (e.g., Bhaskar & Morris, 1984; Firth & Smith, 1992; Pedwell *et al.*, 1994; Gounopoulos, 2003) used the metrics of squared forecast error. This error metric is measured by getting the square of the forecast error. Bhaskar and Morris (1984) and Firth and Smith (1992) identified that the squared forecast error provides more weight to great errors, and is more suitable for the analyzing of investors' losses that result from the forecast errors. The squared forecast error is estimated as shown below:

$$SQFER_{it} = [(AE_{it} - FE_{it}) / FE_{it}]^2$$

Where:

SQFER <sub>it</sub>	= Squared forecast error;
AE <sub>it</sub>	= Actual earnings of company i for the period t;

 $FE_{it}$  = Forecasted earnings of company i for the period t.

Like the AFER, the SQFER does not have an estimated value of zero even in the case that management earnings forecasts are unbiased and it is a measure of the level of the forecast accuracy. However, there are some theoretical arguments for preferring the squared forecast error rather than the absolute forecast error when conducting a regression analysis. According to Brandon and Jarrett (1976), when it is supposed that large errors will have more serious outcomes than small or moderated errors, then the quadratic loss function is likely to be utilized as error measurement. Therefore, SQFER is more appropriate for the user of forecasts when the errors are large.

Table 5.1		
Denendent	Variable	Monsuromonts

Dependent Variable medsurements							
Dependent Variable	Acronyms	Operationalization	Source of Information				
Absolute Forecast Error	AFER	The absolute difference between the actual earnings and the forecasts earnings deflated by the absolute forecasts earnings.	IPO prospectuses and first published annual report				
Squared Forecast Error	SQFER	The square of the difference between the actual earnings and the forecasts earnings deflated by the forecasts earnings.	IPO prospectuses and first published annual report				

## **5.4.2 Measurement of Independent Variables**

This section presents the operational definitions of the independent variables including audit committee characteristics that have been derived from the prior literature and which have acquired widespread consensus as proxies. The independent variables are categorized as size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background and experience. Table 5.2 provides a summary of the measurements used in this study.

# Audit Committee Size (ACSIZE)

The size of audit committee is measured by the number of members on the audit committee. This measurement has been adopted in many previous studies (e.g., Chtourou, Bédard, & Courteau, 2001; Xie *et al.*, 2003; Davidson *et al.*, 2005; Yang & Krishnan, 2005; Yatim *et al.*, 2006; Bédard *et al.*, 2008; Ahmad-Zaluki & Wan-Hussin, 2010; Liu & Sun, 2010).

# Audit Committee Independence (ACIND)

The independence level of audit committee is measured as the proportion of number of independent non-executive directors sitting on the audit committee to the total number of members on audit committee (e.g., Yang & Krishnan, 2005; Abdul Rahman & Ali, 2006; Salleh *et al.*, 2006; Kelton & Yang, 2008; Lin *et al.*, 2009; Liu & Sun, 2010; Yunos *et al.*, 2012).

### Audit Committee Financial Expertise (ACFEX)

Financial expertise refers to the audit committee directors who have qualifications or experience in the area of accounting or finance, involving those directors who have membership in accounting professional bodies. In line with previous studies (e.g., Yatim *et al.*, 2006; Zhang *et al.*, 2007; Kelton & Yang, 2008; Krishnan & Visvanathan, 2008; Lin *et al.*, 2009; Wan-Hussin & Haji-Abdullah, 2009; Yunos *et al.*, 2012), this study measures financial expertise of the audit committee as the proportion of number of audit committee directors with accounting and/or financial expertise to the total number of directors sitting on the audit committee.

### Audit Committee Gender Diversity (ACGED)

Following previous literature (e.g., Darmadi, 2011; Gul *et al.*, 2011; Chapple *et al.*, 2012), the variable of gender diversity is measured in the current study as a percentage of female members sitting on the audit committee to the total number of audit committee members.

# Audit Committee Ethnicity (ACETH)

The ethnicity on the audit committee is measured by employing the percentage of Bumiputera members on the audit committee to the total number of members. This measurement is comparable to the study of Haniffa and Cooke (2002), Abdul Rahman and Ali (2006), Marimuthu and Kolandaisamy (2009), and Mohammad *et al.* (2011).

#### Audit Committee Stock Ownership (ACSOW)

The shareholding of audit committee is measured as the proportion of shares that are owned by the directors who are members of the audit committee. This measurement is in accordance with the previous studies, such as Mangena and Pike (2005), Vafeas (2005), Mangena and Tauringana (2008), and Ghosh *et al.* (2010).

### Audit Committee Educational Background (ACEDU)

Following Amran (2011), this study measures audit committee educational background as a proportion of directors sitting on the audit committee with degree and above to the total directors of the audit committee.

### Audit Committee Experience (ACEXP)

Following DeZoort (1998), this study measures audit committee experience as the average of number of years spent by members of audit committee working in positions related to assigned corporate oversight responsibilities. To calculate the years that the directors of audit committee worked in these corporate oversight responsibilities, the profiles of audit committee directors provided in the IPO prospectus were explored. To address the experience, the said oversight responsibilities include: (1) oversight responsibilities for financial reporting; (2) oversight responsibilities for external auditing; (3) oversight responsibilities for internal auditing; and (4) working on audit committees.

Table 5.2

Independent Variables	Acronyms	Operationalization	Source of
Audit Committee Size	ACSIZE	The total number of directors working on the audit committee at the IPO date	Company's prospectus
Audit Committee Independence	ACIND	Proportion of independent non- executive directors to the entire number of members on the audit committee at the IPO date.	Company's prospectus
Audit Committee Financial Expertise	ACFEX	Proportion of audit committee directors with accounting and financial expertise to the total number of directors on the audit committee at the IPO date.	Company's prospectus
Audit Committee Gender Diversity	ACGED	The percentage of women on the audit committee to the total directors of the audit committee at the IPO date.	Company's prospectus
Audit Committee Ethnicity	ACETH	The proportion of Malay directors sitting on the audit committee to the total number of directors at the IPO date.	Company's prospectus
Audit Committee Stock Ownership	ACSOW	The proportion of shares owned by directors who are sitting on the audit committee at the IPO date.	Company's prospectus
Audit Committee Educational Background	ACEDU	Proportion of directors on the audit committee with degree and above to the total directors of the audit committee at the IPO date.	Company's prospectus
Audit Committee Experience	ACEXP	Average total of years spent serving and working in positions associated with assigned corporate oversight responsibilities.	Company's prospectus

Independent Variables Measurements

# **5.4.3 Measurement of Control Variables**

In addition to the independent variables mentioned earlier, a number of control variables are studied, such as board characteristics variables (size, independence, CEO duality, family ownership and management ownership), signaling variables (underwriter's reputation and auditor's quality), and company-specific characteristics (size, age, forecast horizon and leverage). In other words, as this study aims to specify whether there is an association between audit committee characteristics and the accuracy of IPO management earnings forecasts, it is essential that other factors that affect earnings forecasts should also be controlled.

This section presents an operational definition of each control variable. As highlighted earlier, the choice of possible control variables is based on the previous Malaysian evidence (e.g., Jelic *et al.*, 1998; Ahmad-Zaluki & Wan-Hussin, 2010) and other studies on IPO earnings forecasts accuracy as shown in this section. Table 5.3 summarizes the operational definitions of each control variable.

### **Board Size (BSIZE)**

It has been used also as a control variable in the study of Bédard *et al.* (2008) and Zhang *et al.* (2007) in their studies on the impact of audit committee on the earnings forecasts and internal control, respectively. Karamanou and Vafeas (2005) indicated that companies, which have smaller boards disclose more conservative earnings forecasts. Beasley (1996) also reported that the size of boards of directors has significant effects on the expected financial statement frauds, indicating that as board size is large, the possibility of fraud in financial statement will be increased. Further, Abdul Rahman and Ali (2006) claimed that harmonizing and processing problems are likely to be more difficult when the board size is too large resulting in ineffective boards undertaking monitoring functions. Mnif (2010) reported that IPO companies with large board size

disclose more optimistic but less accurate earnings forecasts. On the other hand, Xie *et al.* (2003) indicated that having a larger board is related to less practices of earnings management.

Therefore, this study suggests that as the large size of board may have a negative influence on the monitoring responsibility of directors, it will also have a negative relationship with the disclosure accuracy of management earnings forecasts. Following Beasley and Salterio (2001), Certo *et al.* (2001), Karamanou and Vafeas (2005), Abdul Rahman and Ali (2006), Bédard *et al.* (2008), Ahmad-Zaluki and Wan-Hussin (2010), this study measures the board size as the total number of directors on the board.

#### **Board Independence (BIND)**

Board independence is used as a control variable in the study of Bédard *et al.* (2008) about audit committee and IPO management earnings forecasts, as well as in the study of Zhang *et al.* (2007) about audit committee quality and internal control weaknesses.

Prior studies, such as Karamanou and Vafeas (2005) and Ajinkya *et al.* (2005) reported a positive relationship between the independence of the board and the quality of earnings forecasts. Mnif (2010) found that IPO companies are more expected to disclose great conservative and accurate earnings forecasts when they have a greater percentage of directors who are independent on their boards. Therefore, it can be indicated that the percentage of independent directors is associated with greater accuracy of management earnings forecasts. Further, Beasley (1996) reported a significant negative association

between outside directors and the incidence of fraudulent financial statements. In addition, Klein (2002), Xie *et al.* (2003), and Saleh *et al.* (2007) showed that outside directors are negatively associated with the practices of earnings management. Therefore, this study assumes that there is a positive association between the percentage of independent directors and the accuracy of management earnings forecasts. Following Abdul Rahman and Ali (2006), Bédard *et al.* (2008), Mnif (2010), Ahmad-Zaluki and Wan-Hussin (2010), and Yunos *et al.* (2012), this study measures the board independence as the percentage of independent non-executive directors sitting on the board to the total directors on the board.

## **Board CEO Duality (DUALITY)**

It has been used as a control variable in the study of Bédard *et al.* (2008) who investigated the accuracy of Canadian IPO earnings forecasts. The separation of responsibilities between the CEO and the board's chairman has been recommended in Malaysian MCCG 2000. Yang and Koa (2007) indicated that if the chairman of the board participates as an operations executive, it will result in making decisions favorable to them and therefore reducing the overseeing function of the boards of directors, which subsequently will result in reducing the credibility of earnings forecasts. Saleh, Iskandar, and Rahmat (2005) found that CEO duality is positively related to the practices of earnings management. In addition, Abbott, Park, and Parker (2000) showed a positive association between CEO duality and the likelihood of companies' aggressive reporting or fraud. Hence, this study assumes a negative association between CEO duality and the accuracy of IPO management earnings forecasts.

Following previous studies (e.g., Xie *et al.*, 2003; Byard, Li, & Weintrop, 2006; Kelton & Yang, 2008; Bédard *et al.*, 2008; Gulzar & Wang, 2011; Yunos *et al.*, 2012), CEO duality is measured in this study as a dummy variable that equals "1" when the same person occupies both CEO and chairman of a board position, and "0" otherwise.

# Family Ownership (FOWN)

The ownership of family may prevent disclosing high-quality information as a company that includes a controlling family member on its board is inclined to have less transparent disclosures (Ho & Wong, 2001). The essential justification is that controlling family members will have direct access to the company's financial and non-financial information and, therefore, have less need for disclosure (Chau & Gray, 2010). Further, the great level of ownership owned by family directors suggests a great possibility of opportunistic behavior among these family members tracking their purposes at the expense of value creation activities (Saleh, Abdul Rahman, & Hassan, 2009); earnings quality (Munir, Saleh, Jaffar, & Yatim, 2013); and company performance in general (Latif, Kamardin, Mohd, & Adam, 2013). Alternatively, family ownership can be positively associated to financial reporting quality as the decrease of agency conflicts between family shareholders and managers decreases the incentives of managers to report inaccurate accounting information. Following Ibrahim and Ismail (2012), the family ownership in this study is measured as the percentage of common shares directly owned by directors who sit on the board and ties in family relationship.

#### Management Ownership (MOWN)

Managerial ownership reconciles the agency conflicts between managers and shareholders and accordingly decreases agency costs (Jensen & Meckling, 1976). Saleh *et al.* (2005) found that management ownership is negatively related to earnings management. Further, Yeo, Tan, Ho, and Chen (2002) indicated that the reduction in the level of earnings management is related to increased management ownership. This is because of that the managers align their interests with the interests of shareholders. High management ownership is estimated to lead managers to maximize the company's wealth since the net effects will at last go to them (Kamardin & Haron, 2011). However, the study of Ibrahim and Ismail (2012) provides evidence that management ownership is positively and significantly associated with the forecast errors in Malaysian IPO companies. Following Ibrahim and Ismail (2012), the management ownership in this study is measured as the percentage of common shares directly owned by executive directors.

### **Underwriter's Reputation (UNDERW)**

The underwriter's reputation is considered as an important variable, which may influence the accuracy of IPO earnings forecasts. It was used as a control variable in the study of Yang and Koa (2007) and Bédard *et al.* (2008) who investigated the accuracy of IPO earnings forecasts. When the IPO companies are inclined to have asymmetrical information, the company uses underwriter's reputation as a signal to outside investors (Titman & Trueman, 1986; Carter & Manaster, 1990). Yang and Koa (2007) showed that the underwriter's reputation also indicates the quality of the management earnings forecasts for outside investors.

Firth and Smith (1992) and Brown *et al.* (2000) found that IPO companies with more reputable underwriters disclose more accurate earnings forecasts. A reputable underwriter is suggested as being related to lesser agency costs and comes at a lesser risk for the IPO company (Mnif, 2010). Chen *et al.* (2001) argued that underwriters have the incentive to strictly oversee management earnings forecasts since large earnings forecast errors damage their reputation. Mnif (2010) found that IPO companies disclose more conservative earnings forecasts when those IPO companies are underwritten by a highly reputable underwriter. Therefore, the present study assumes that IPO companies forecasts. Underwriter's reputation is measured based on the market share. Following How and Howe (2001), the present study measures the underwriter's reputation by employing the underwriter's market share, measured by the ringgit value of all shares underwritten by the underwriter scaled by the total ringgit value of all IPOs in the study sample.

# Auditor's Quality (AUD)

Auditor's quality was used as a control variable in the studies of Yang and Koa (2007), Bédard *et al.* (2008), Ismail and Weetman (2008), and Ahmad-Zaluki and Wan-Hussin (2010) who examined the accuracy of IPO earnings forecasts. The Malaysian SC requires auditors to validate the accuracy of the forecasts and projections. They are also required to verify that the forecasts and projections have been reported on a basis, which is aligned with the accounting procedures normally utilized by the company.

Bédard *et al.* (2008) showed that the responsibility of the auditor associated with an IPO is to improve the reliability of the financial disclosure included in the prospectus. The forecast errors that are very large will result in decreasing auditors' reputation, and so they have motivations to strongly observe the earnings forecasts resulting in more accurate forecasts (Chen *et al.*, 2001). Clarkson (2000), Cheng and Firth (2000), Cormier and Martinez (2006), and Hartnett and Römcke, (2000) reported a positive relationship between the quality of auditor and management earnings forecast accuracy.

Therefore, this study assumes that IPO companies choosing a higher quality auditor will issue earnings forecasts of higher accuracy. Following previous studies (e.g., Ahmad-Zaluki & Wan-Hussin, 2010; Ahmad-Zaluki *et al.*, 2011), the current study measures auditor's quality as dummy variable, equal to "1" if the auditor is Big 4 (PricewaterhouseCoopers, Deloitte, KPMG, Ernst and Young or their equivalents before merger) and "0" otherwise.

# **IPO Company Size (CSIZE)**

Company size is regarded as another essential variable which could impact the accuracy of forecasts. It was used as a control variable in the studies of Yang and Koa (2007), Bédard *et al.* (2008), Ismail and Weetman (2008), Mnif (2010), and Ahmad-Zaluki and Wan-Hussin (2010) who investigated the accuracy of IPO earnings forecasts.

Larger IPO companies are expected to control and manage their market settings well and as a result, they might make forecasts easily (Jaggi 1997; Chen & firth, 1999). Larger IPO companies have been argued to have a stable earnings process and they are more likely to utilize a lot of available resources within the company to undertake high accuracy earnings forecasts (Pedwell *et al.*, 1994). Clarkson (2000) reported that bigger companies disclose more accurate earnings forecasts than smaller. The current study assumes that company size is positively related to the accuracy of IPO management earnings forecasts. Following the study of Bédard *et al.* (2008) and Ahmad-Zaluki and Wan-Hussin (2010), the present study measures the IPO company size by natural logarithm of total assets at the date of the prospectus.

## **IPO Company Age (CAGE)**

Company age was used also as a control variable in the study of Bédard *et al.* (2008), Ismail and Weetman (2008), Mnif (2010), and Ahmad-Zaluki and Wan-Hussin (2010). Firth and Smith (1992) and Lee *et al.* (1993) indicated that older IPO companies are more likely to be in a better situation to provide forecasts concerning their future performance, since they are expected to get a higher appreciation of market environment as well as relatively higher control over their operations. Jaggi (1997) reported that IPO companies that have been in existence for only few years do not have the ability to completely understand and value the influence of the environment on their future performance, and therefore they will not have strong ability to make accurate forecasts. Further, Jelic *et al.* (1998) and Jog and McConomy (2003) found that companies without operating history face difficulties to forecast earnings. Therefore, the current study assumes that the disclosure accuracy of earnings forecasts improves the longer the company has been in existence. Following the study of Ahmad-Zaluki and Wan-Hussin (2010), IPO company age is calculated by taking natural logarithm of (1+ number of years between the date of establishment and the date of IPO).

### **Forecast Horizon (FHORIZON)**

The forecast horizon has also been acknowledged as another significant possible determinant of earnings forecasts quality (Bulut & Er, 2010). Therefore, it is included in the models of this study to control for disclosure accuracy of earnings forecasts. It was used also as a control variable in the study of Yang and Koa (2007), Mnif (2010), and Ahmad-Zaluki and Wan-Hussin (2010).

It has been argued in the literature (e.g., Lee *et al.*, 1993; Pedwell *et al.*, 1994; Brown *et al.*, 2000; Chen *et al.*, 2001) that the level of forecast accuracy is also dependent on the time horizon about forecasts. Jaggi (1997) showed that forecasting with a short time horizon is more possibly associated with higher accuracy than forecasts with a longer time horizon, since higher uncertainty is more related to longer time horizon. It has been reported that the less accurate earnings forecasts are associated with longer time period from the date of forecast to the end for which the forecast is made (Karamanou & Vafeas, 2005; Chin, Kleinman, & Lin, 2006). Thus, this study assumes that the forecast horizon is negatively related to the disclosure accuracy of earnings forecasts. Following Jaggi, (1997), Jelic *et al.* (1998), and Ahmad-Zaluki and Wan-Hussin (2010), this study
measures the forecast horizon in terms of the number of months from the date of management earnings forecast (prospectus date) to end of the period that the forecasts is made for.

## Leverage (LEV)

Financial leverage is another factor that impacts the accuracy of IPO management earnings forecasts. Firth and Smith (1992) indicated that an IPO company having more debt may encounter some problems in forecasting the earnings as higher debt leads to more variability in earnings. Clarkson (2000) documented that companies with high leverage are related to less accurate management earnings forecast. Further, companies with high financial leverage may be impacted more significantly by deteriorating economic circumstances. Thus, this study assumes that the more the financial leverage, the less the accuracy of earnings forecasts. Leverage is measured in this study as the percentage of total debts to total assets.

## 5.5 Models used in the Study

The relationship between the characteristics of audit committee as crucial corporate governance mechanisms and IPO management earnings forecasts is a worth-noting for investors or for other users. This study includes two empirical models: the analysis is performed on the earnings forecasts accuracy as measured by absolute forecast error (AFER) in model one and as measured by squared forecast error (SQFER) in model two. Using these two models enables the expected findings of this current study to be more comparable to other studies.

Variables	Acronyms	Operationalization	Source of Information
Board Size	BSIZE	Total number of directors at the	Company's prospectus
Doord		IPO date.	Compony's prospectus
Independence	DIND	executive directors serving on	Company's prospectus
independence		the board to total directors on	
		the board at the IPO date.	
CEO duality	DUALITY	Dummy variable that equals one	Company's prospectus
		"1" when the same person	
		occupies both CEO and	
		chairman of board position at the	
		ipo date, and zero "0"	
Family	FOWN	The percentage of common	Company's prospectus
Ownership	10000	shares directly owned by	company s prospectus
1		directors who sit on the board	
		and ties in family relationship.	
Management	MOWN	The percentage of common	Company's prospectus
Ownership		shares owned by executive	
Underwriter's	UNDERW	The ringgit value of all shares	Company's prospectus
Reputation	ONDERW	underwritten by the underwriter	company s prospectus
nopulation		scaled by the total ringgit value	
		of all IPOs in the study sample.	
Auditor's	AUD	Equal to "1" if the auditor is	Company's prospectus
Quality		Big4 (PricewaterhouseCoopers,	
		Deloitte, KPMG, Ernst and	
		before merger) and "0"	
		otherwise.	
Company Size	CSIZE	Natural logarithm of total assets,	Company's prospectus
		at the date of IPO prospectus.	
Company Age	CAGE	Natural logarithm of (1+ number	Company's prospectus
		of years between the date of	
		establishment and the date of	
Forecast	FHORIZON	$\mathbf{\Gamma} \mathbf{O}$ . The number of months from the	Company's prospectus
Horizon	monizon	date of management earnings	company s prospectus
		forecast (prospectus date) to end	
		of the period that the forecasts	
		are made for.	a .
Leverage	LEV	The percentage of total debts	Company's prospectus
		to total assets.	

Table 5.3Control Variables Measurements

This study performs a multivariate analysis to identify factors that may influence the accuracy of IPO management earnings forecasts. The level of AFER and SQFER is regressed on eight variables relating to audit committee characteristics and on additional nine control variables related to board characteristics, signaling and company-specific characteristics. There are two models that are conducted in this study as follows:

*Empirical model one:* The influence of audit committee characteristics on the accuracy of IPO management earnings forecasts as proxied by the absolute value of forecast error:

 $\begin{aligned} AFER_{it} &= \beta_0 + \beta_1 ACSIZE_{it} + \beta_2 ACIND_{it} + \beta_3 ACFEX_{it} + \beta_4 ACGED_{it} + \beta_5 ACETH_{it} + \\ &\beta_6 ACSOW_{it} + \beta_7 ACEDU_{it} + \beta_8 ACEXP_{it} + \beta_9 BSIZE_{it} + \beta_{10} BIND_{it} + \beta_{11} \\ &DUALITY_{it} + \beta_{12} FOWN_{it} + \beta_{13} MOWN_{it} + \beta_{14} UNDERW_{it} + \beta_{15} AUD_{it} + \beta_{16} \\ &CSIZE_{it} + \beta_{17} CAGE_{it} + \beta_{18} FHORIZON_{it} + \beta_{19} LEV_{it} + \varepsilon \end{aligned}$ 

*Empirical model two:* The influence of audit committee characteristics on the accuracy

of IPO management earnings forecasts as proxied by squared value of forecast error:

 $\begin{aligned} SQFER_{it} &= \beta_0 + \beta_1 ACSIZE_{it} + \beta_2 ACIND_{it} + \beta_3 ACFEX_{it} + \beta_4 ACGED_{it} + \beta_5 ACETH_{it} + \\ &\beta_6 ACSOW_{it} + \beta_7 ACEDU_{it} + \beta_8 ACEXP_{it} + \beta_9 BSIZE_{it} + \beta_{10} BIND_{it} + \beta_{11} \\ &DUALITY_{it} + \beta_{12} FOWN_{it} + \beta_{13} MOWN_{it} + \beta_{14} UNDERW_{it} + \beta_{15} AUD_{it} + \beta_{16} \\ &CSIZE_{it} + \beta_{17} CAGE_{it} + \beta_{18} FHORIZON_{it} + \beta_{19} LEV_{it} + \varepsilon \end{aligned}$ 

Where:

AFER <sub>it</sub>	=	the absolute difference between actual earnings and the earnings forecasts scaled by absolute earnings forecasts;
SQFER <sub>it</sub>	=	the squared of difference between actual earnings and the
		earnings forecasts scaled by earnings forecasts;
βo	=	the intercept of the model;
ACSIZE <sub>it</sub>	=	the total number of directors on the audit committee at the IPO

date;

ACIND <sub>it</sub>	=	proportion of independent non-executive directors to the total number of members on the audit committee at the IPO date;
ACFEX <sub>it</sub>	=	proportion of audit committee directors with accounting and financial expertise to the total number of directors on the audit committee at the IPO date;
ACGED <sub>it</sub>	=	percentage of women on the audit committee to the total number of directors at the IPO date;
ACETH <sub>it</sub>	=	the proportion of Malay directors sitting on the audit committee to the total number of directors at the IPO date;
ACSOW <sub>it</sub>	=	the proportion of shares owned by directors who are sitting on the audit committee at the IPO date;
ACEDU <sub>it</sub>	=	percentage of directors serving on the audit committee with degree and above divided by total directors of audit committee at the IPO date;
ACEXP <sub>it</sub>	=	average total years spent serving and working in positions associated with assigned corporate oversight responsibilities;
<b>BSIZE</b> <sub>it</sub>	=	total number of directors on the board at the IPO date;
BIND <sub>it</sub>	=	percentage of independent non-executive directors serving on the board to total directors on board at the IPO date;
DUALITY <sub>it</sub>	=	dummy variable that equals "1" when the same person occupies both CEO and chairman of board position at the IPO date, and "0" otherwise;
FOWN <sub>it</sub>	=	the percentage of common shares directly owned by directors who sit on the board and ties in family relationship;
MOWN <sub>it</sub>	=	the percentage of common shares directly owned by executive directors;
UNDERW <sub>it</sub>	=	the ringgit value of all shares underwritten by the underwriter scaled by the total ringgit value of all IPOs in the study sample;
AUD <sub>it</sub>	=	equal to "1" if the auditor is Big4 (PricewaterhouseCoopers, Deloitte, KPMG, Ernst and Young or their equivalents before merger) and "0" otherwise;
CSIZE <sub>it</sub>	=	natural logarithm of total assets, at the date of IPO prospectus;
CAGE <sub>it</sub>	=	natural logarithm of (1+ number of years between the date of establishment and the date of IPO);
FHORIZIN <sub>it</sub>	=	the number of months from the date of management earnings forecast (prospectus date) to end of the period that the forecasts

are made for;

 $LEV_{it} = the percentage of total debt to total assets;$  $\varepsilon = error terms.$ 

# 5.6 Content Analysis - Analysis Related to Provided Explanations in Annual Reports

The explanations provided in annual reports regarding reasons of the deviations between actual earnings and forecasted earnings are examined by using manual content analysis. The manual content analysis was conducted to investigate the nature of these explanations. The direction and magnitude of forecasts errors and their association with the desire of IPO companies to provide explanations were considered as well in the analysis.

Content analysis is a research technique that has been broadly employed in undertaking studies in many areas of social sciences for a long time. It has been extensively utilized in investigating the practices of corporate social and environmental disclosure (e.g., Cormier, Magnan, & Velthoven, 2005; Haniffa and Cooke, 2005). Content analysis is defined by Abbott and Monsen (1979, p. 504) as "a technique for gathering data that consists of codifying qualitative information in anecdotal and literary form into categories in order to derive quantitative scales of varying levels of complexity".

Content analysis is one of the methods that translates text description, such as director's report or comments in annual reports, into quantification. The important principle in content analysis is that a lot of words of a text can be organized into fewer content categories (Kothari, Li, & Short, 2009). Each category will include one or many similar words or word phrases in their meanings, and each word or phrase occurrence can be counted and the counts compared analytically (Kothari *et al.*, 2009).

Content analysis therefore, can be useful to analyze the directors' report and their comments on IPO management earnings forecasts. To do that, the first published annual reports of IPO companies were reviewed. Specifically, the Chairman's statement and additional notes on financial statements were well-explored since the management of IPOs provides the explanations under them. Then, all provided explanations by IPOs behind the earnings forecasts errors were collected. Finally, these comments and explanations were classified into several groups by gathering the similar explanations in specific one group.

## **5.7 Methods of Statistical Data Analysis**

This section addresses the statistical techniques utilized for data analysis. The data of the current study were analyzed by employing the statistical software STATA. The data analysis includes descriptive statistics, univariate analysis, the correlation analysis, screening and preparing the data for multivariate analysis through testing the assumptions of multiple regressions. To elaborate more in this regard, the subsequent sub-sections present the details of each of these procedures.

### **5.7.1 Descriptive Statistics**

Descriptive statistics were conducted to get an understanding of the attributes of the sampled companies during the period of this study. Nevertheless, descriptive statistics was not utilized to draw conclusions concerning the association between independent variables and dependent variables. To achieve the aim of the descriptive analysis, a variety of statistical procedures were used to initially quantitatively summarize the data. Specifically, the descriptive statistics includes analyzing the mean, median, standard deviation, minimum and maximum; while the mean, median and standard deviation determine the central tendency of the variable; the minimum and maximum determine the highest and lowest value of the variable.

### **5.7.2 Univariate Analysis**

In addition to descriptive statistics, univariate analyses were performed to test the means and median differences of all variables under this study with high and low value of the dependent variable (accuracy of earnings forecasts). Further, univariate analyses were used as well to demonstrate the differences between the mandatory and voluntary earnings forecasts.

# **5.7.3 Correlation Analysis**

The correlation coefficients among the variables are shown by parametric (Pearson correlation) and non-parametric (Spearman correlations) correlations. Correlation analysis is utilized to show the direction of the relationship between the variables under

this study besides describing the strength and significance of this relationship. It shows the level of linear relationship between two variables that varies from +1 to -1. The correlation coefficient of  $\pm 1$  indicates that there is a perfect linear association between the variables. Nevertheless, based on Hair, Black, Babin, and Anderson (2010), when the correlation coefficient is above  $\pm 0.80$ , this great degree of intercorrelation between the independent variables might cause problems of multicollinearity. Multicolinearity could considerably influence the predictive ability of the regression model in addition to the estimation of the regression coefficients.

### 5.7.4 Preparing Data for Multivariate Analysis

Prior to the analysis of data, the diagnostic tests of regression were performed to certify that the essential assumptions for the Ordinary Least Squares (OLS) estimation were met. First, the extreme multivariate outliers were detected by employing studentized residuals to eliminate them from the sample. Then, samples of the study had to be drawn from normally distributed populations. Thus, the normality was tested through Skewness and Kurtosis. The models should have linear parameters, so the next diagnostic test was the assumption of linearity. After that, multicollinearity assumption was tested by employing Variance Inflation Factor (VIF). Finally, diagnostic tests of heteroscedasticity and model specification test were conducted by using the White General Heteroscedasticity test and Ramsey Regression Equation Specification Error Test (RESET), respectively.

#### 5.7.5 Multiple Regression Analysis

To test the hypotheses of this study, Multiple Regression Analysis was performed. It is used to measure the association between one or a number of independent or predictor variables and one dependent variable (Hair *et al.*, 2010). Thus, multiple regressions were carried out to predict the association between the independent variables (audit committee characteristics) and dependent variable (accuracy of IPO management earnings forecasts). Two sets of regression analysis were conducted. Firstly, the association between audit committee characteristics and absolute forecast error as proxied of accuracy was examined. Then, the relationship between audit committee characteristics and squared forecast error as another proxy of management earnings forecasts accuracy was examined.

#### 5.8 Sample Selection and Data Collection Process

#### **5.8.1 Sample Selection**

The study is based on IPO prospectuses and annual reports of companies that are listed on the Main Market of Bursa Malaysia over the period of January 2002 to 29 February 2012. During this period, 265 new issues have been listed on the Main Market of Bursa Malaysia. The IPO companies that satisfy the following criteria were involved in the study:

- 1. The prospectuses of IPOs and the annual reports for the IPO year are available, and
- 2. The prospectuses of IPOs contain information concerning earnings forecasts.

As with Karamanou and Vafeas (2005) and Ahmad-Zaluki & Wan-Hussin (2010), the current study excluded financial, close-end fund and real estate investment trust companies from the sample because they have different regulatory requirements governing their practices on disclosure.

## **5.8.2 Data Collection**

All information about audit committees characteristics, board attributes, signaling variables, in addition to the company-specific characteristics were hand-collected from the IPO prospectuses that were obtained from the Bursa Malaysia website at <u>www.bursamalaysia.com.my</u> or the company's website itself. The forecasted and actual earnings were collected from the prospectuses and from the first published annual reports, respectively.

# **5.9 Summary and Conclusion**

This chapter discusses the employed methods in this study. It starts by presenting the theoretical framework of this study. Then, hypotheses developments are discussed in the third section of this chapter. One developed hypothesis is related to accuracy of management earnings forecasts during the mandatory and voluntary regulations and eight developed hypotheses are related to independent variables of audit committee attributes.

In the fourth section, the measurements of all variables under this study are discussed. This study adopts two measurements for accuracy of IPO management earnings forecasts. These two measurements are absolute forecast error and squared forecast error. With regards to the independent variables, eight characteristics of the audit committee were measured. In addition to the independent variables, nine control variables were measured and employed in this study.

Finally, in order to achieve the overall research objectives, the current study adopts a quantitative research base. Further, to analyze the provided explanations of forecasts deviations, the study conducts content analysis approach. Models used in this study, content analysis, and methods of statistical data analysis are discussed in sections five, six, and seven of this chapter. Sample selection and data collection process are discussed in section eight.

After discussing hypotheses of the study and research methods in this chapter, the following results and discussion chapter presents the findings of the tests selected to analyze the data gathered according to the steps described in this chapter.

## CHAPTER SIX

### **RESULTS AND DISCUSSION**

## **6.1 Introduction**

The previous chapter presents information on the methods and the data of this study. The main aim of this chapter is to present and discuss the results of the empirical tests, discussed in Chapter 5. This chapter reports the descriptive statistics, econometric tests and the empirical findings and discussion concerning the association between the characteristics of audit committee and the accuracy of management earnings forecasts of Malaysian IPOs.

This chapter is divided into eight sections. Section 6.2 reports the sample description. Section 6.3 presents the descriptive statistics of the dependent variable and independent variables. Section 6.4 presents the main results and discussion of the univariate analysis. Section 6.5 reports and discusses the results of Pearson and Spearman correlation analyses. Section 6.6 discusses the process of preparing data for multivariate analysis. Section 6.7 presents the main results and discussion with respect to multiple regression analysis of the models tested in this study. Then, Section 6.8 reports the results of content analysis of the explanations behind forecasts errors provided in the annual reports. Finally, Section 6.9 summarizes the overall chapter.

# **6.2 Sample Description**

Besides the study's sample illustrated in Section 5.8.1 in the previous chapter and prior to starting the analyses and tests of this chapter, this section presents additional information on the sample of the study. This information includes technical records and observations' distribution of the study's sample by disclosure regulation as well as by industry. The utilized data in this study includes the publicly available information, mainly obtained from the IPO prospectuses and annual reports of the companies listed on the Main Market of Bursa Malaysia. The employing of IPO prospectuses and annual reports is classified as a secondary source of data. Most notably, unlike primary data (i.e., interviews or questionnaires), the secondary source of data guarantees the reliability and accuracy of the data (Sekaran, 2003). The technical records information consists of the population target of this study, study's sample target, sample unit, and chosen size of the sample. This information is presented in Table 6.1.

Siudy Technical Records	
Study Sample Item	Description
Target of population	All Malaysian IPO companies listed on the
	Main Market during the period 2002 to 2012.
Target of the sample	IPO companies that satisfy the following
	criteria:
	1. IPO prospectuses as well as annual reports
	for the IPO year are available; and
	2. IPO prospectuses contain information on
	earnings forecasts.
Sample unit	IPO company
Sample size	265

Table 6.1Study Technical Records

As highlighted in Table 6.1, the initial sample of this study covers the companies that went public on the Main Market of Bursa Malaysia for the years 2002 to 2012. The Main Market is considered a high-quality platform to undertake an investment. This study focuses on the Main Market listings since, under ACE market listings, IPO companies are not bound to disclose their earnings forecasts results by SC. Until the 29 February 2012, there were 265 financial and non-financial IPOs listed on the Main Market. According to the change in the disclosure regulation of IPO earnings forecast from mandatory to voluntary, Table 6.2 illustrates the breakdown of the study sample by year of listing (column 1) and splits between IPO companies that disclosed mandatory earnings forecasts (columns 3 and 4) versus voluntary earnings forecasts (columns 5 and 6).

During the mandatory sample period (Jan 2002-Jan 2008), 199 companies provided earnings forecasts information in their IPO prospectuses. However, during the voluntary period (Feb 2008-Feb 2012), from the total sample of 66 IPOs, only 12 companies disclosed earnings forecasts information. The remaining 54 IPO companies decided not to issue earnings forecasts in their prospectuses.

Following Karamanou and Vafeas (2005), and Ahmad-Zaluki and Wan-Hussin (2010), companies in finance, close-end fund and real estate investment trust are excluded. Therefore, three companies from the finance sector, 14 companies from the real estate investment trusts sector, and one company from closed-end funds sector are excluded from the sample.

Table 6.2

	Total Sample	Forecasted Earnings						
IPO Year		Man	datory	Voluntary				
	i otai bainpio	Provide No Forecasts		Provide	No Forecasts			
		Forecasts		Forecasts				
2002	44	44	-	-	-			
2003	38	38	-	-	-			
2004	41	41	-	-	-			
2005	33	33	-	-	-			
2006	18	18	-	-	-			
2007	23	23	-	-	-			
2008	15	2	-	8	5			
2009	11	-	-	-	11			
2010	23	-	-	3	20			
2011	17	-	-	1	16			
2012*	2	-	-	-	2			
Total	265	199	0	12	54			

Descriptive Summary of the Distribution of IPO Samples by Year and by Earnings Forecasts Regime (Mandatory versus Voluntary) for the Period 2002-2012

\*As of 29 February 2012

Furthermore, following Ahmad-Zaluki, Campbell and Goodacre (2007), two infrastructure project companies are also excluded. These types of industry are excluded from the sample because they have different regulatory requirements governing their practices on disclosure. They are governed by different regulatory bodies, such as Bank Negara Malaysia and the Banking and Financial Institutions Act 1989. The rules and regulations for the banking and financial companies are more rigorous relative to nonfinancial companies. For the above-mentioned reasons, 54 IPO companies without earnings forecasts and 21 IPOs with different regulatory regimes are removed from the sample. After taking into account these criteria, the final sample included in this study comprised 190 IPO companies. Table 6.3 shows the procedure to arrive at the final sample.

Table 6.3Derivation of Sample

Sample Selection from 2002-2012	
Total number of IPO companies	265
less	
Companies that did not disclose earnings forecasts	54
Financial related companies	4
Real estate investment trusts related companies	14
Closed-end funds related companies	1
Infrastructure related companies	2
Final sample	190

As mentioned in Section 1.8 of Chapter 1, the sample was collected for the years 2002 to 2012 for two reasons. First, the use of 12-year data is consistent with a study by Ahmad-Zaluki and Wan-Hussin (2010) using the Malaysian IPO market. In addition, this study uses a later data since the last study by Ahmad-Zaluki and Wan-Hussin (2010) used the data for the period 1999 to 2006. Second, since 2008 is the first year of voluntary compliance with disclosure regulation of earnings forecasts, data for six years prior and five years after the voluntary adoption is also selected to permit a rationale learning adjustment period before and after the adoption of this new regime.

Table 6.4 classifies the 190 IPOs that provided earnings forecasts based on their industrial sector. About 41.58% of the sample is from industrial products sector (79 IPO companies), followed by 23.68% for IPOs from consumer products (45 IPO companies) and 21.58% for IPOs from trading and services (41 IPO companies). Only 3.16% of the sample is from plantation sector (6 IPO companies), 4.21% from construction sector (8 IPO companies) and 5.79% from properties sector (11 IPO companies).

Industry	Number of IPO Companies	%
Construction	8	4.21
Consumer Product	45	23.68
Industrial Products	79	41.58
Properties	11	5.79
Plantation	6	3.16
Trading/Services	41	21.58
Total	190	100

Table 6.4Descriptive Summary of the Distribution of 190 Samples of IPO Companies by Industryfor the Period 2002-2012

### **6.3 Descriptive Statistics**

This section discusses the descriptive analyses for management earnings forecasts accuracy variables as well as the descriptive analyses for audit committee characteristics variables. This study utilizes descriptive statistics that include mean, median, standard deviation, minimum and maximum. This determines the variables' direction and state.

## 6.3.1 Descriptive Statistics of Dependent Variable

To achieve the first objective of this study, Table 6.5 provides the descriptive statistics for the full sample of 190 IPOs of the two management earnings forecasts accuracy variables (absolute forecast error (AFER) and squared forecast error (SQFER)) during the period 2002 to 2012. As highlighted earlier in Chapter 5, to get both AFER and SQFER, the forecast errors (FER) should be calculated first. Thus, the FER is presented in the descriptive analysis.

Table 6.5 indicates that the FER for the full sample is 3.36%, which means the Malaysian IPO earnings forecasts during the period of study are pessimistic (i.e., the earnings forecasts were underestimated). The positive sign for the mean forecast error indicates that the actual reported earnings in annual report surpass their forecasted earning in IPO prospectus. One sample t-test and Mann-Whitney test in Table 6.5 also indicate that the mean and median of FER is insignificantly not equal to zero (*p*-value= 0.396; *p*-value= 0.896) and its distribution is skewed to the left, which proves that most of the forecast errors are considered a pessimistic bias. The findings propose that Malaysian IPO directors are, on average, unbiased and cautious forecasters.

	FER (%)	AFER (%)	SQFER (%)			
Full Sample (Jan 2002- Feb 2012) (n=1	190)					
Mean	3.36	24.94	29.66			
<i>p</i> -value	0.396	0.000	0.050			
Median	1.12	9.37	0.88			
<i>p</i> -value	0.896	0.000	0.000			
Std.	54.50	48.54	206.45			
Minimum	-176.04	0.13	0.00			
Maximum	525.45	525.45	2760.95			
Note: Forecast Error (FER) = $(AE_{it} - FE_{it}) /  FE_{it} $ . Absolute Forecast Error (AFER) = $ (AE_{it} - FE_{it}) / FE_{it} $ .						

Table 6.5Descriptive Statistics of the Accuracy of Management Earnings Forecasts

Note: Forecast Error (FER) =  $(AE_{it} - FE_{it}) / |FE_{it}|$ . Absolute Forecast Error (AFER) =  $|(AE_{it} - FE_{it})|/|FE_{it}|$ . Squared Forecast Error (SQFER) =  $(AE_{it} - FE_{it} / FE_{it})^2$ . AE is the actual earnings in annual report by the IPO company; and EF, is the disclosed forecasted earnings in the IPO prospectus. *p*-values indicate the level of significance different from zero using t-test and Mann-Whitney test. Results significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using two-tailed tests.

The mean of FER is substantially lower than the mean reported in previous studies in Malaysia (e.g., 9.34% in Mohamad *et al.*, 1994; 33.37% in Jelic *et al.*, 1998), but similar to 2.10% reported in the study of Hussin *et al.* (2004). This indicates a general decrease

in the forecast bias of Malaysian IPOs over time. While this study reports a positive mean of FER, the study of Ahmad-Zaluki and Wan-Hussin (2010) reports optimistic FER with a negative mean of 3.50%. On the international front, this result of FER is not in line with the international evidence that management of IPOs is usually over-optimistic in forecasting their earnings (i.e., the actual earnings reported in the annual report is less than the forecasted earnings in prospectus). For example, FER in Australia is -30.35% in Hartnett and Römcke (2000) and -13.20% in Henry *et al.* (2002); in New Zealand it is -91.00% in Firth (1997) and -37.10% in Hsu *et al.* (2000); and in France it is -13.85% in Minif (2010). It is noticeable that 95.26% of the sample of this study (181 IPOs) went public under the period of mandatory disclosure of earnings forecasts, which may provide motivations for management to manipulate earnings during the year subsequent to the IPO.

This finding is in line with the proposition that reported earnings are commonly adjusted upward as otherwise they would go below the earnings forecasts, but infrequently move down if the forecasts are exceeded (Allen, Cho, & Kooyul., 1997). Gounopoulos (2011) indicated that IPOs who obligatorily incorporate earnings forecasts in their prospectuses are supposed to be different in countries employing voluntary regime in terms of their level of earnings management during the year following the IPO.

A possible reason for this pessimistic result is the fact that there is strict regulation concerning issuing earnings forecasts of IPOs in Malaysia. For example, if the earnings forecasts come out to be optimistic, the IPO companies might be censured by the SC (i.e., providing explanations behind the forecasts errors in their first annual reports). Further reason is that IPO managers are personally responsible to the SC for their earnings forecasts. Thus, they might be more worried concerning their reputations, where a bad reputation may have severe consequences concerning the operations of the company. For example, the company's capability to increase the capital in the future could be influenced. In addition, customers and suppliers of the IPO company might be more vigilant in their transaction with the company, and the company might also be facing some problems in employing and maintaining their skilled staff. Moreover, top executives, particularly those who are the directors of big companies, have a sturdy motivation to avert being labeled as underperforming managers.

Furthermore, Table 6.6 shows that 105 IPO earnings forecast errors (EFR) are positive and consequently are pessimistic, 85 IPO EFR are negative and thus are optimistic. The pessimistic management is significantly more than optimistic management since the t-value and z-value from the t-test and Mann-Whitney nonparametric test for differences in mean and medians is significant at the level of 1% (p-value= 0.000, p-value= 0.000).

Distribution of Earnings Porecasis Error (PER) in Relative values								
Sign	n	Frequency	Differences between Pessimistic and Optimistic					
			Forecasts					
			t-test	Mann-Whitney test				
FER>0 (pessimistic)	105	55.26%	7.001	-11.840				
FER<0 (optimistic)	85	44.74%	(0.000)	(0.000)				
Total	190							

 Table 6.6

 Distribution of Earnings Forecasts Error (FER) in Relative Values

Table 6.5 shows that the absolute forecast error (AFER) has a mean of 24.94% and a median of 9.37%. The results from one sample t-test and Mann-Whitney test indicate that the mean and median of AFER are significantly greater than zero at significance level of 1% (*p*-value = 0.000). In relation to previous Malaysian results, the mean AFER of this study is less than the AFER (28.00% and 54.91%) reported by Mohammed et al. (1994) and Jelic *et al.* (1998), respectively, but is similar to the reported AFER (23.76%) in the study of Ahmad-Zaluki and Wan-Hussin (2010). Compared to prior international studies, AFER in this study is much less than those reported in Australia (e.g., 1138.30% in Lee et al., 1993; 406.20% in Chapple et al., 2005), in Jordon (e.g., 163.40 in El-Rajabi & Gunasekaran, 2006), and it is also relatively smaller compared to the 37.50% in Gallery et al. (2011) in Australia and 42.82% in Gounopoulos (2003) in Greece. However, it is moderately higher than other AFER in the UK (e.g., 11.00% in Keasey & McGuiness, 1991); China (e.g., 15.28 % in Sun & Liu, 2009); Singapore (e.g., 10.40% in Firth, 1997); and Hong Kong (e.g., 18.00 % in Chan et al., 1996; 21.96 % in Chen et al., 2001).

The squared forecasts errors (SQFER) of Malaysian IPOs has a mean of 29.66% and median of 0.88%. While the mean of SQFER is significantly different from zero at 5% (p-value= 0.050), its median is significantly different from zero at the 1% (p-value= 0.000). The SQFER of this study is substantially less than the result reported in previous Malaysian studies (e.g., 1373.74% in Jelic *et al.*, 1998). Compared to other countries, the SQFER in Malaysia indicates that earrings forecasts are more accurate than those countries. For example, the mean SQFER is about 19,100% in New Zealand (Firth &

Smith, 1997); 3,044% in Greece (Gounopoulos, 2003); and 177.40% for the Turkish IPOs (Bulut & Er, 2010).

In general, this percentage of accuracy of Malaysian IPO earnings forecasts is not satisfactory. The means of AFER and SQFER should not be significantly different from zero. However, the means of AFER and SQFER in the present study show some improvement for the accuracy of earnings forecasts over time. Nonetheless, comparing to countries such as the UK, Singapore and Hong Kong, the management of IPO companies still need to issue earnings forecasts that are more accurate.

This result entails that further effort should be carried out by the management of future Malaysian IPOs in order to enhance the accuracy of earnings forecasts. Furthermore, Malaysian IPO management should be more careful during the process of earnings forecasts as well as consider the factors indicated by Chan *et al.* (1996) and Jelic *et al.* (1998). They showed that accurate earnings forecasts are a result of the absence of difficulty of forecasting (e.g., the underlying variability and instabilities of business circumstances), the proficiency of the management to 'manage' their earnings.

Table 6.7 illustrates the summary statistics of IPO management earnings forecast accuracy measures through years of this study. It is clear that all the means FER are positive, except for the FER in 2002 and 2005. This means that Malaysian IPOs issued optimistic earnings forecasts during the year of 2002 and 2005. For example, in 2002,

the averages of forecast errors and absolute forecast errors are considerably different from each other. This is because of the over-forecasting of earnings in the prospectus by around 50% by Meda Inc. Berhad. The great difference shows that the disclosed earnings forecasts in 2002 are more optimistic than pessimistic.

For the accuracy, Table 6.7 indicates that the year of 2003 has the lowest level of earnings forecasts accuracy with a mean AFER and SQFER of 43.23% and 101.18%, respectively. On the other hand, the year of 2010 presents the highest level of accuracy with low levels of mean AFER (5.41%) and SQFER (0.29%).

Descriptive Statistics of IPO earnings Forecasts Accuracy (by Cohort Year)											
Forecasting Year		FER (%)				AFER (%)			SQFER (%)		
	IPOs	Mean	Median	Std.	Mean	Median	Std.	Mean	Median	Std.	
2002	43	-0.73	0.73	25.29	13.67	6.87	21.18	6.25	0.47	23.84	
2003	36	8.87	2.09	101.62	43.23	15.06	92.11	101.18	2.34	460.84	
2004	41	2.91	-2.74	53.70	28.97	9.43	45.08	28.22	0.89	92.80	
2005	26	-5.72	-5.75	34.13	25.41	18.50	22.96	11.53	3.48	16.58	
2006	14	6.12	6.18	9.76	8.98	7.04	6.98	1.26	0.50	1.86	
2007	19	11.33	5	24.76	17.95	8.46	20.22	7.09	0.72	14.05	
2008	10	7.36	8.59	34.82	27.28	22.74	21.11	11.46	5.51	13.80	
2009	0	-	-	-	-	-	-	-	-	-	
2010	1	5.41	5.41	0.00	5.41	5.41	0.00	0.29	0.29	0.00	
2011	0	-	-	-	-	-	-	-	-	-	
2012	0	-	-	-	-	-	-	-	-	-	
All	190	3.36	1.12	54.50	24.94	9.37	48.54	29.66	0.88	206.45	

Table 6.7Descriptive Statistics of IPO earnings Forecasts Accuracy (by Cohort Yea)

Table 6.8 reports the average management earnings forecasts variables accounting for the differences based on the industry sectors. It is obvious that the sectors of construction, industrial products and properties disclosed optimistic earnings forecasts compared to their counterparts in other sectors, and the average of the whole sample, which reported pessimistic earnings forecasts. From the Table also, the mean of FER for all sectors is within the tolerance level regulated by Bursa Malaysia ( $\pm 10\%$ ), except for consumer products sector that has a deviation error of 4.13% out of the tolerance level. In terms of forecasts accuracy, the most accurate earnings forecasts are for the plantation sector with a mean AFER and SQFER of 11.73% and 3.13%, respectively.

Variables		Construction	Consumer Product	Industrial Products	Properties	Plantation	Trading/ Services	All
FER (%)	Mean	-7.90	14.13	-3.99	-1.56	9.35	8.06	3.36
	Median	-3.27	0.10	0.71	0.99	3.98	7.64	1.12
	Std.	42.75	93.05	36.64	24.92	16.47	32.89	54.50
AFER (%)	Mean	28.40	37.34	21.62	18.12	11.73	20.52	24.94
	Median	13.19	9.09	9.38	9.28	5.09	10.85	9.37
	Std.	31.26	86.24	29.76	16.20	14.52	26.77	48.54
SQFER(%)	Mean	16.62	86.66	13.41	5.67	3.13	11.20	29.66
	Median	2.14	0.83	0.88	0.86	0.26	1.18	0.88
	Std.	23.38	417.28	40.70	7.74	6.22	40.98	206.45

Table 6.8Descriptive Statistics of IPO Earnings Forecasts Accuracy by Industry Sector

To shed more light on the errors of earnings forecasts, Table 6.9 presents the frequency distribution of FER and AFER. For the FER, the table indicates that out of 190 IPO companies, there are about 104 IPO companies, which represent 54.74% from the whole

sample, that meet the regulatory tolerance level (i.e., within the  $\pm 10\%$ ) that is obligatory by the regulators of IPOs in Malaysia. Alternatively, 45.26% of the whole sample (86 IPO companies) had FER, which is outside the tolerance level of  $\pm 10\%$ .

The Distribution of the Forecast Errors of Earnings								
Distribution of	Number of	Cumulative	Distribution	Number of	Cumulative			
FER (%)	IPOs	Percentage	of AFER (%)	IPOs	Percentage			
>100	5	2.63	>100	6	3.16			
(50 to 100)	8	6.84	(50 to 100)	16	11.58			
(20 to 50	15	14.73	(20 to 50	37	31.05			
(10 to 20)	16	23.15	(10 to 20)	27	45.26			
(0 to 10)	61	55.26	(0 to 10)	104	100.00			
(-10 to 0)	43	77.89						
(-20 to -10)	11	83.68						
(-50 to -20)	22	95.26						
(-100 to -50)	8	99.47						
< -100	1	100.00						
Total	190			190				

Table 6.9The Distribution of the Forecast Errors of Earnings

This result of FER is comparable to the study of Ahmad-Zaluki and Wan-Hussin (2010), but 9% lower than what was reported in the study of Jelic *et al.* (1998). From a regulatory standpoint, the results appear less satisfactory. As stated earlier, the forecasts were mandatory till 2008 and after that, only a few companies of the sample of this study issued earnings forecast. Hence, the percentage of forecast within the tolerance level should be higher.

Concerning the AFER, like FER, there is about 54.74% (104 IPOs) of the sample having AFER between 0% and 10%; and 14.21% (27 IPOs) having AFER between 10% and

20%. The AFER from 0% to 10% has the largest concentration of companies among the Malaysian IPOs. To some extent, it can be stated that many of Malaysian IPOs have reported their earnings forecasts in the prospectuses near to the actual earnings in annual reports.

#### **6.3.2 Descriptive Statistics of Independent Variables**

This section presents the descriptive statistics on the independent variables (audit committee characteristics) and control variables (board characteristics, signaling variables and company-specific characteristics). Descriptive statistics for variables measured as continuous metrics and dichotomous variables are presented in Tables 6.10 and 6.11, respectively. For all continuous variables, mean, median, minimum, maximum and standard deviation are reported. However, for the dummy variables, the difference in proportion is identified.

For the audit committee size (ACSIZE), it ranges between three members to five, and it is clear that the average audit committee size is three (mean=3.12) and the median is three. This result of average size of IPOs audit committee is consistent with Ahmad-Zaluki and Wan-Hussin (2010). The average percentage of independent directors on the audit committee board (ACIND) is 69.51%, showing that the majority of members are independent. The mean and median percentage of independent directors on the audit committees is about two-thirds, 69.51% and 66.67%, respectively, following the MCCG recommendation that independent directors must dominate the audit committee.

Variables	Mean	Median	Std.	Minimum	Maximum
ACSIZE	3.12	3.00	0.39	3.00	5.00
ACIND (%)	69.51	66.67	9.33	33.33	100.00
ACFEX (%)	48.06	33.33	20.43	20.00	100.00
ACGED (%)	7.96	0.00	15.21	0.00	66.67
ACETH (%)	29.12	33.33	31.56	0.00	100.00
ACSOW (%)	6.83	0.92	11.46	0.00	52.00
ACEDU (%)	60.80	66.67	29.13	0.00	100.00
ACEXP (years)	6.77	6.24	3.75	0.00	18.75
BSIZE	7.37	7.00	1.76	4.00	16.00
BIND (%)	37.57	33.33	8.38	22.22	75.00
FOWN (%)	15.68	5.52	19.37	0.00	66.13
MOWN (%)	11.76	4.15	15.58	0.00	66.94
UNDERW (%)	19.05	10.45	19.18	0.13	49.11
CSIZE(RM million)	350.11	101.19	1,402.58	35.12	17,073.86
CAGE(years)	5.53	2.25	6.95	0.17	32.67
FHORIZON(months)	7.71	7.00	3.01	3.00	14.00
LEV (%)	51.04	47.83	23.89	3.86	150.48

Table 6.10Descriptive Statistics of Continuous Independent and Control Variables

Note: This table shows the descriptive statistics of continuous independent and control variables of the IPO companies used in this study. ACSIZE is the total number of directors on the audit committee. ACIND is the proportion of independent directors to the entire number of members on the audit committee. ACFEX is the proportion of audit committee directors with accounting and financial expertise scaled by the whole number of directors on the audit committee. ACGED is the percentage of women on the audit committee at the time of IPO. ACETH is the proportion of Malays directors sitting on the audit committee to the total number of directors. ACSOW is the proportion of shares owned by directors who are sitting on the audit committee. ACEDU is the proportion of directors on the audit committee with degree and above divided by total directors of the audit committee. ACEXP is the average total time spent serving and working in positions associated with assigned corporate oversight responsibilities. BSIZE is the total number of directors. BIND is the percentage of independent nonexecutive directors serving on the board to total directors on board. FOWN is the percentage of common shares owned by directors who sit on the board and ties in family relationship. MOWN is the percentage of common shares owned by executive directors. UNDERW is the ringgit value of all shares underwritten by the underwriter scaled by the total ringgit value of all IPOs in the study sample. CSIZE is the natural logarithm of total assets, at the date of IPO prospectus. CAGE is the natural logarithm of (1+ number of years between the date of establishment and the date of IPO). FHORIZON is the number of months from the date of management earnings forecast (prospectus date) to end of the period that the forecasts are made for. LEV is the percentage of total debts to total assets.

This high proportion of independent directors, reflects the greater degree of regulation regarding audit committees. This finding is also similar to the results of Ahmad-Zaluki and Wan-Hussin (2010), who reported in their study that about 67.69% of IPO audit committee members are independent non-executive directors and comparable to 79% in the study of Yatim *et al.* (2006).

On average, 48.06% of the IPO companies have as a minimum one member of the directors on audit committees having financial expertise (ACFEX) or professional memberships either in local or in international accounting bodies. The 20% minimum value for the audit committee financial expertise shows that no IPO company has breached the rules of MCCG, which state that it is mandatory for listed companies to have at least one member of the audit committee with financial expertise.

The mean of the proportion of female directors sitting on IPO audit committee (ACGED) is about 7.96%. Even though the Malaysian national policy has raised the participation of females from 13.5% in 2004 to 26.2% in 2010 in the private sector (Tenth Malaysia Plan), the average of 7.96% women on IPO audit committees can be considered to some extent as a disappointing figure. The moderately low percentage of women directors in this study enhances the results of Ahmad-Zaluki (2012) that indicates that the proportion of female representation on board of directors in Malaysia at the time of IPO is only about 8.08%. Thus, the gender diversity is very limited, and diversity is somewhat less pronounced in executive positions like boards of directors and audit committee. Furthermore, this result is similar to 7.17% of female audit committee

independent members in the study of Van der Zahn *et al.* (2008) on the Singapore IPO market.

Concerning the ethnicity of directors sitting on the audit committee (ACETH) of IPO companies, the average Bumiputera (Malay) members is 29.12% of all directors on the audit committee. The average proportion of Chinese members on audit committees is 65.75%, which is substantially larger than the Malay proportion<sup>13</sup>. This result shows the domination of non-Bumiputera (Chinese) in the audit committee composition of Malaysian IPOs. The average of 29.12 % is lower than 41% found by Yunos *et al.* (2012) for 300 Malaysian listed companies during the period 2001 to 2007. The result also proposes that the contribution of other ethnic groups, i.e., Indians and foreigners, in governance roles is small.

In terms of audit committee stock ownership (ACSOW), the average shares owned by audit committee directors is 6.83%, ranging from a minimum of 0% to a maximum of 52%. This low average can support the independence of audit committee directors and enhance their ability of monitoring since they will not perform in their own interest at the expense of other company shareholders (Mangena & Pike, 2005). For the educational background (ACEDU), it is clear from the Table 6.10 that 60.80% of the directors on IPO audit committee have at least degree qualification or above. This result enhances the MCCG (Revised Code, 2007), which supports companies to search for directors who have qualification. For the experience (ACEXP), directors on IPO audit

<sup>&</sup>lt;sup>13</sup> A further examination of the data is reported in Chapter 7 of further analysis.

committees have, on average, seven years (mean=6.77) working experience in the areas related to the responsibilities of audit committee. This means, on average, Malaysian IPOs seek experienced directors to be seated on the audit committee.

Summary statistics on board characteristics reveal that the mean board size (BSIZE) is seven members for the all samples. Interestingly, no IPO companies exist, which have less than four directors on the board. This result is quite similar to the studies of Abdul Rahman and Ali (2006) and Ahmad-Zaluki and Wan-Hussin (2010) with the mean board size of eight directors. The size (seven to eight members) is within the range recommended by Jensen (1993), since numbers more than that would make it complex for the CEO to control. For the board independence (BIND), the average board is composed of independent directors with a mean (median) of 37.57% (33.33%), which is less than the mean (median) of 69.51% (66.67%) of independent directors sitting on the audit committee. However, 164 IPO companies (86%) are in line with the recommendation of the MCCG 2000 to have as a minimum of one third of the board including independent non-executive directors. The average of 37.57% of independent non-executive directors illustrates the domination of insiders in the board composition of IPO companies in Malaysia. This result also is consistent with the finding of Ahmad-Zaluki and Wan-Hussin (2010) with 34.71% of independent non-executive directors on the IPO company board.

In terms of the family ownership (FOWN), the percentage ranges from 0% to 66.13% with a mean value of 15.68%. For this study sample, there is 76% (144 IPO companies)

having at least one or more family members on their boards, while 24% (46 IPO companies) have no family members. With respect to management ownership (MOWN), the proportion varies from 0% to 66.94%, with a mean value of 11.76%. Concerning the underwriter reputation (UNDERW), this study utilizes the underwriter's market shares as a proxy for the reputation. All sample companies of this study have some of their share issues underwritten. The most reputable underwriter, which is CIMB bank, underwrote 49.11% of the sample of this study. Overall, the mean of underwriters market share is 19.05%.

Table 6.10 presents the descriptive statistics of the different IPO company attributes that are being controlled for. The companies were broadly dispersed with reference to size (CSIZE). The largest company with total assets during the listing period amounting in RM17,073 million is AE Multi Holdings Berhad and the smallest company is Tafi Industries Berhad with a total assets of RM35.12 million. The mean operating history (CAGE) at the time of listing indicates that more than half of the companies have been in the business between 0 and six years. The maximum age is 32.67 years and minimum is couple of months. For the full sample of this study, the mean forecast horizon (FHORIZON) is 7.71 months. The forecast horizon varies between three and 14 months. It shows that issuing the earnings forecasts in the IPO prospectus is fairly significant to the company management. Consistent with the signaling theory, management may utilize such disclosure to signal the value of the company. Consequently, even though the IPO took place near to the end of financial year, the management still released their earnings forecasts in the IPO prospectus. The last control variable is leverage (LEV),

which is measured by the ratio of total debt to total asset. This ratio indicates how much IPO company's total assets are financed by debt. The higher the leverage, the more risk for the IPO company. For this study, the IPO companies have a mean level of 51.04% financial leverage.

Table 6.11 presents the descriptive statistics for the dummy variables. For the duality, the number of IPO companies with CEO duality (DUALITY) is moderately small (31 IPO companies) with the mean of 16.32%. This result shows a high degree of compliance with the Code's recommendations. Further, this means that, to some extent, role duality is not common in Malaysian IPOs. This result is consistent with the reported results in the studies of Abdul Rahman and Ali (2006) and Yatim *et al.* (2006) for the listed Malaysian companies.

Table 6.11Descriptive Statistics of Dummy Control Variables

Dichotomous Variables	Number of IPO Companies					
Dictionous variables	Frequency of 1s	Frequency of 0s				
DUALITY	31	159				
	(16.32%)	(83.68%)				
AUD	104	86				
	(54.74%)	(45.26%)				

Note: This table shows the descriptive statistics of dummy control variables of the IPO companies used in this study. DUALITY is a dummy variable that equals "1" when the same person occupies both CEO and chairman of board position, and "0" otherwise. AUD is a dummy variable that equal to "1" if the auditor is Big4 (PricewaterhouseCoopers, Deloitte, KPMG, Ernst and Young or their equivalents before merger) and "0" otherwise.

As for the choice of IPO underwriter, Table 6.11 shows that 104 (54.74%) IPO companies of the sample of this study were audited by one of the Big 4 firms, which is

lower than 60% reported by Ahmad-Zaluki and Wan-Hussin (2010). This is possibly attributable to the fact those companies undertaking IPOs on the Malaysian Main Market need to grant reliability on their financial communication by being audited by well-known auditors.

## **6.4 Univarate Analysis**

This section is divided into two subsections. The first subsection presents the univarate analysis of the differences between the means and medians of all variables of this study with high and low accurate IPO earnings forecasts. The second subsection illustrates the univarate analysis of the mandatory and voluntary IPO earnings forecasts, which aim to achieve objective two of this study.

### 6.4.1 Univarate Analysis based on High and Low Accuracy of Earnings Forecasts

This section shows univariate analyses for all variables under this study for each model separately. For analytic purposes, all variables are divided based on the level of management earnings forecasts accuracy that is higher or lower than the median of sample (as a cut-off point) into high and low accurate forecasts. The underlying principle behind dividing the IPO sample into two groups based on high accuracy earnings forecasts and low accuracy earnings forecasts is to allow the current study to undertake more insight in terms of the effectiveness of audit committee characteristics in addition to board attributes, signaling variables and company-specific characteristics.

As presented in Table 6.12, IPO companies with high accurate earnings forecasts display higher means of audit committee size (ACSIZE) than companies with a low level of accurate forecasts, but there is no significant difference based on the independent t-test. This result is in line with some prior studies have argued that larger audit committees are strongly associated with high accurate earnings forecasts (e.g., Ahamad-Zaluki & Wan-Hussin, 2010), and higher financial reporting quality (e.g., Felo *et al.*, 2003). Surprisingly, the low level of accurate earnings forecasts indicates greater averages of audit committee independence (ACIND) and financial expertise (ACFEX), which is inconsistent with the hypotheses stated earlier. Interestingly, the high level of accuracy of forecasts is related with higher mean of females (ACGED) sitting on the audit committee. However, the univariate analysis does not reveal any significant difference among the two groups of high and low accurate forecasts.

For the audit committee ethnicity (ACETH), the high accuracy forecast is related to lower mean of ethnic diversity on the audit committee. In terms of audit committee ownership (ACSOW), the higher accuracy of earnings forecast is related to lower mean and median of ACSOW; however, there is insignificant difference based on the independent t-test and Mann-Whitney test. This is in line with Niu (2006), that when directors own high percentage of shares, the quality of the financial reporting process may be compromised. Finally, the high means of educated (ACEDU) and experienced (ACEXP) audit committee members is related with high accuracy of earnings forecasts, but there is no significant difference according to t-test. For the control variables, it can be noticed that the high accuracy group is related to high reputation underwriter (UNDERW) with a significant difference. This result is in line with Firth and Smith (1992) and Brown *et al.* (2000). Further, this finding can be attributed to that underwriters have the motivation to strongly monitor the issuing of earnings forecasts as the large earnings forecast errors will damage their reputation. For the rest of control variables, there is no significant difference between these variables under high or low earnings forecasts accuracy groups

Table 6.12Univariate Test for First Model (AFER)

Variables	Full Sample	High Accuracy		Low Accuracy		t-test		Mann-Whitney test	
		Mean	Median	Mean	Median	t-value	p-value	z-value	p-value
AFER	24.94	4.71	4.91	45.16	28.86	-6.305	0.000	-11.906	0.000
ACSIZE	3.12	3.16	3.00	3.08	3.00	1.475	0.142	-1.301	0.193
ACIND	69.51	68.82	66.67	70.19	66.67	-1.011	0.314	-0.494	0.621
ACFEX	48.06	47.84	33.33	48.28	33.33	-0.148	0.883	-0.488	0.626
ACGED	7.96	8.63	0.00	7.28	0.00	0.611	0.542	-0.578	0.563
ACETH	29.12	28.60	33.33	29.65	33.33	-0.229	0.819	-0.296	0.767
ACSOW	6.83	5.79	0.68	7.86	1.10	-1.249	0.213	-0.285	0.775
ACEDU	60.80	62.40	66.67	59.19	66.67	0.759	0.449	-0.921	0.357
ACEXP	6.77	6.85	5.88	6.68	6.67	0.305	0.761	-0.048	0.962
BSIZE	7.37	7.45	7.00	7.29	7.00	0.619	0.537	-0.294	0.769
BIND	37.57	37.85	33.33	37.29	33.33	0.461	0.645	-0.924	0.356
DUALITY	34.44	0.16	0.00	0.17	0.00	-0.195	0.845	-0.196	0.845
FOWN	15.68	14.80	5.13	16.55	6.36	-0.622	0.535	-0.121	0.904
MOWN	11.76	12.36	6.05	11.17	3.59	0.523	0.602	-0.774	0.439
UNDERW	19.05	22.30	10.45	15.81	10.45	2.359	0.019	-1.657	0.097
AUD	54.74	0.56	1.00	0.56	1.00	0.000	1.000	0.000	1.000
CSIZE	350.11	11.72	11.52	11.88	11.57	-1.107	0.270	-0.814	0.416
CAGE	5.53	1.53	1.23	1.41	1.07	1.020	0.309	-0.738	0.461
FHORIZON	7.71	7.46	7.00	7.95	7.00	-1.108	0.269	-1.085	0.278
LEV	51.04	0.51	0.48	0.51	0.47	0.061	0.951	-0.004	0.997

The above discussion in Table 6.12 can be applied to Table 6.13 concerning the second model SQFER, with the exception of the audit committee ethnicity (ACETH). For the second model, ACETH is slightly higher in the high earnings forecast accuracy group, but no significant difference is reported. Furthermore, there is a significant difference found for the audit committee size of the two groups.

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Table 6.13     Universida Test for Second Model (SOFFR)									
Variables	Full	High Accuracy Low Ac		Accuracy	ccuracy t-test		Mann-Whitney		
	Sample	<i>c ,</i>		5				test	
		Mean	Median	Mean	Median	t-value	p-value	z-value	p-value
SQFER	24.94	0.30	0.24	59.64	8.74	-1.975	0.051	-11.905	0.000
ACSIZE	3.12	3.17	3.00	3.06	3.00	1.815	0.071	-1.749	0.080
ACIND	69.51	68.89	66.67	70.14	66.67	-0.921	0.358	-0.198	0.843
ACFEX	48.06	47.86	33.33	48.26	33.33	-0.134	0.894	-0.437	0.662
ACGED	7.96	8.54	0.00	7.36	0.00	0.535	0.593	-0.499	0.618
ACETH	29.12	29.34	33.33	28.90	33.33	0.096	0.924	-0.052	0.959
ACSOW	6.83	5.75	0.74	7.93	1.07	-1.313	0.191	-0.260	0.795
ACEDU	60.80	62.80	66.67	58.76	66.67	0.955	0.341	-1.117	0.264
ACEXP	6.77	6.88	5.94	6.65	6.67	0.415	0.678	-0.088	0.930
BSIZE	7.37	7.48	7.00	7.27	7.00	0.836	0.404	-0.525	0.600
BIND	37.57	37.77	33.33	37.37	33.33	0.330	0.742	-0.725	0.468
DUALITY	34.44	0.156	0.00	0.17	0.00	-0.259	0.796	-0.260	0.795
FOWN	15.68	14.74	5.22	16.64	6.05	-0.673	0.502	-0.146	0.884
MOWN	11.76	12.27	5.74	11.25	3.56	0.452	0.651	-0.775	0.438
UNDERW	19.05	22.17	10.45	15.87	10.45	2.295	0.023	-1.662	0.097
AUD	54.74	0.56	1.00	0.55	1.00	0.128	0.898	-0.129	0.897
CSIZE	350.11	11.72	11.52	11.88	11.55	-1.129	0.260	-0.792	0.429
CAGE	5.53	1.55	1.23	1.39	1.07	1.276	0.204	-0.948	0.343
FHORIZON	7.71	7.45	6.50	7.97	7.00	-1.190	0.235	-1.176	0.239
LEV	51.04	0.51	0.48	0.51	0.47	0.072	0.943	-0.050	0.960
#### 6.4.2 Univarate Analysis based on Mandatory and Voluntary Earnings Forecasts

This section is dedicated to achieving the objective number two for this study by conducting the univariate tests for management earnings forecasts variables during mandatory and voluntary disclosure regimes.

Table 6.14 descriptively presents the means, medians and standard deviations of the FER, AFER and SQFER, which are broken down by mandatory and voluntary disclosure environment. The results in Panel A show that the average FER under the mandatory disclosure regimes is a positive 3.24%. This average indicates that the Malaysian IPOs were pessimistic in forecasting and disclosing their earnings in IPO prospectus during mandatory period. Panel B reports surprising results regarding the FER during the voluntary regulations. The results show a positive mean of 5.86% for IPO companies that published earnings forecasts in their prospectuses during the voluntary period. This illustrates that the forecasts errors began to be, on average, more conservative (i.e., more pessimistic) under the voluntary disclosure regime. These findings are inconsistent with the hypothesis H1a, which states that Malaysian IPO earnings forecasts have been more optimistic under the voluntary regime than mandatory regime. Furthermore, this result contradicts Gounopoulos and Skinner (2010) who reported that the pessimistic bias under mandatory regime moved to be optimistic during the voluntary regulation. However, the t-value and z-value for both t-test and Mann-Whitney test reported in Panel C show that there is insignificant difference between forecasts errors under the two disclosure regimes. In addition, this result is not in line with Heflin *et al.* (2012) who found earnings forecasts to be less optimistically biased after FD.

Table 6.14

Comparison of Mean and Median Values between Mandatory and Voluntary IPO Earnings Forecasts

	FER (%)	AFER (%)	SQFER (%)			
Panel A: Mandatory Disclosure Regime (Jan 2002-Jan 2008) (n = 181)						
Mean	3.24	24.78	30.52			
<i>p</i> -value	0.432	0.000	0.054			
Median	1.05	9.28	0.86			
<i>p</i> -value	0.821	0.000	0.000			
Std.	55.30	49.51	211.49			
Minimum	-176.04	0.13	0.00			
Maximum	525.45	525.45	2760.95			
Panel B: Voluntary Disclosure Regime (Feb 2008- Feb 2012) (n = 9)						
Mean	5.86	28	12.35			
<i>p</i> -value	0.645	0.006	0.032			
Median	5.41	28.58	8.17			
<i>p</i> -value	0.678	0.008	0.008			
Std.	36.75	22.52	14.34			
Minimum	-56.04	5.41	0.29			
Maximum	58.11	58.11	33.76			
Panel C: Test of difference between	Mandatory and Volun	tary Disclosure Regin	mes			
t-statistic	-0.141	-0.193	0.257			
z-statistic	-0.537	-1.444	-1.444			

As presented earlier in this study that the new regime of the voluntary disclosures appears to enhance the credibility of earnings forecasts, interestingly, Panel B in Table 6.14 contradicts this. While the AFER under mandatory regulation is 24.78%, the average of AFER under voluntary regulation is higher by 3.22% (mean=28%). Contrary to hypothesis H1b, these results illustrate that, the accuracy of earnings forecasts is higher in mandatory than voluntary forecasts. However, in Panel C, t-value and z-value for both t-test and Mann-Whitney test indicate that there is insignificant difference

between AFER under the two disclosure regimes. These results are similar to the findings of Sun and Liu (2009) who reported that there is insignificant difference in either forecast bias or forecast accuracy between voluntary and mandatory disclosure. However, it is not consistent with Heflin *et al.* (2012) since they showed that after FD, the earnings forecasts are more accurate.

More interestingly, the result obtained from SQFER equation is different from AFER results. The average of SQFER during the voluntary disclosure regulation is 12.35% that is less than the 30.52%, which is the SQFER of the mandatory disclosure. The higher accuracy provided by SQFER, can be attributed to SQFER providing more weight to great errors (Firth & Smith, 1992). This result supports the hypothesis H1b that earnings forecasts under voluntary disclosure are more accurate than earnings forecasts under mandatory disclosure. However, according to the t-value and z-value for both t-test and Mann-Whitney test, the difference between SQFER under the two disclosure environments is not statistically significant.

Overall, while Malaysian IPO managers have become more conservative under the voluntary disclosure regime, there is no improvement in the level of accuracy of earnings forecasts disclosed in their IPO prospectuses. Perhaps, this is due to the lack of IPO management confidence under voluntary regime, as there are only 12 IPOs out of 66 Malaysian IPOs provided forecasts during the voluntary period.

#### **6.5 Correlation Analysis**

Correlation analysis is employed to illustrate the direction of the relationship between the variables under study in addition to describing the strength and significance of this relationship. Table 6.15 presents the Pearson correlation coefficients between the dependent variables (AFER, SQFER) and all independent and control variables. In addition, the correlations of non-parametric Spearman were also computed in order to reduce the sensitivity to extreme values and potential violations of the assumptions of normal distribution. Pearson correlation coefficients are presented below the diagonal and Spearman correlation coefficients are presented above the diagonal. The two dependent variables of this study (absolute forecasts errors (AFER), and squared forecast errors (SQFER)) have a positive and significant correlation with a correlation coefficient of 0.880. This is not surprising since these two variables were calculated based on the same earnings forecasts metric items.

There are some significant correlations between the two dependent variables and a number of the independent variables. As illustrated in Table 6.15, the negative correlation sign on ACSIZE with both AFER and SQFER indicate that an audit committee represented by more directors will have adequate resources (i.e., skills, knowledge, and experience), which may lead to lower earnings forecasts errors. Audit committee independence (ACIND) is significantly associated with both AFER and SQFER at a level significant of 5% (p< 0.05). The negative correlation sign for ACIND is in line with the expectation that the independent directors sitting on audit committee provide more accurate IPO earnings forecasts (i.e., less AFER and SQFER).

Moreover, the negative association sign on ACEDU with both AFER and SQFER indicate that an audit committee represented by more educated directors will result in lower earnings forecasts errors. Further, CEO duality is positively correlated to SQFER at a level of significance of 10% (p< 0.10). This relationship support the proposition that the more an IPO company's CEO also acts as chairman of the board, the more errors in management earnings forecasts. In addition, it supports the recommendations of MCCG 2000, which emphasize the separation of responsibilities between the chairman and the CEO to avoid the extensive concentration of authority in the same person. Furthermore, management ownership (MOWN) is positively significantly related to SQFER at a level of significance of 10% (p< 0.10). This correlation supports the perspective that as the managers' shareholding increases, their independence can be damaged, which results in higher earnings forecasts errors.

The rest of independent variables and control variables are not significantly correlated with both AFER and SQFER. Unexpectedly, the positive sign of audit committee financial expertise (ACFEX) is contrary to that predicted earlier. Surprisingly, positive signs on audit committee gender (ACGED) and audit committee experience (ACEXP) propose that they, to some extent, lead to lower accuracy of management earnings forecasts.

Variables	AFER	SQFER	ACSIZE	ACIND	ACFEX	ACGED	ACETH	ACSOW	ACEDU	ACEXP
AFER	1	1.000**	-0.094	0.073	0.057	0.078	0.051	0.060	-0.006	-0.035
SQFER	0.880**	1	-0.094	0.073	0.057	0.078	0.051	0.060	-0.006	-0.035
ACSIZE	-0.095	-0.040	1	0.375**	-0.341**	0.035	0.227**	0.149*	-0.101	-0.089
ACIND	-0.197**	-0.281**	0.073	1	-0.115	-0.002	0.203**	-0.155*	0.005	-0.061
ACFEX	0.096	0.087	-0.231**	-0.009	1	0.045	-0.104	-0.160*	0.098	0.499**
ACGED	0.105	0.127	-0.009	-0.002	0.039	1	-0.008	0.081	0.047	-0.047
ACETH	0.009	-0.051	0.238**	0.188**	-0.101	-0.033	1	-0.074	0.015	-0.146*
ACSOW	0.043	0.034	0.147*	-0.135	-0.145*	-0.032	0.009	1	-0.146*	0.000
ACEDU	-0.023	-0.001	-0.089	0.010	0.090	0.056	0.042	-0.016	1	-0.183*
ACEXP	0.020	0.022	-0.083	-0.055	0.501**	-0.049	-0.140	-0.038	-0.216**	1
BSIZE	-0.044	-0.056	0.227**	0.055	0.011	-0.023	-0.040	-0.201**	-0.083	0.017
BIND	-0.093	-0.064	0.122	0.372**	-0.056	-0.034	0.187**	0.094	0.087	-0.126
DUALITY	0.089	0.147*	-0.058	-0.058	0.019	0.081	-0.035	0.075	-0.099	-0.010
FOWN	0.128	0.141	0.078	-0.040	-0.093	0.187**	-0.118	0.506**	0.011	-0.028
MOWN	0.126	0.186*	0.053	-0.048	-0.010	0.042	-0.046	0.469**	0.015	-0.050
UNDERW	-0.107	-0.067	-0.039	-0.036	0.067	0.025	-0.020	-0.092	-0.055	0.077
AUD	-0.077	-0.086	0.100	-0.051	-0.085	0.123	0.083	-0.029	0.106	-0.038
CSIZE	-0.010	-0.057	-0.014	0.077	0.077	-0.103	0.226**	-0.205**	0.085	0.075
CAGE	-0.041	-0.033	0.124	-0.054	-0.008	0.086	0.067	-0.032	0.004	-0.008
FHORIZON	0.100	0.056	-0.038	-0.058	0.010	-0.034	-0.101	0.004	-0.158*	0.059
LEV	-0.077	-0.099	0.059	0.140	-0.088	-0.047	0.082	0.057	-0.019	-0.004

Table 6.15Correlation Coefficients of Variables (Pearson [Spearman] correlation coefficients are below [above] the Diagonal)

Variables	BSIZE	BIND	DUALITY	FOWN	MOWN	UNDERW	AUD	CSIZE	CAGE	FHORIZON	LEV
AFER	-0.048	-0.050	-0.018	0.043	0.006	-0.130	-0.006	0.054	-0.032	0.071	0.034
SQFER	-0.048	-0.050	-0.018	0.043	0.006	-0.130	-0.006	0.054	-0.032	0.071	0.034
ACSIZE	0.188**	0.185*	-0.041	0.074	0.100	-0.002	0.062	-0.004	0.092	-0.054	0.032
ACIND	0.107	0.289**	-0.034	-0.038	-0.036	-0.052	-0.065	0.050	-0.059	-0.057	0.028
ACFEX	0.019	-0.081	0.026	-0.083	-0.050	0.036	-0.083	0.023	-0.003	0.038	-0.095
ACGED	-0.013	-0.036	0.100	0.228**	0.143*	0.004	0.131	-0.098	0.110	-0.021	-0.025
ACETH	-0.075	0.130	-0.057	-0.201**	-0.104	-0.014	0.102	0.235**	0.047	-0.090	0.084
ACSOW	-0.215**	0.097	0.067	0.434**	0.566**	-0.073	0.002	-0.267**	0.020	0.025	0.010
ACEDU	-0.081	0.028	-0.108	-0.022	-0.061	-0.018	0.112	0.076	-0.040	-0.145*	0.014
ACEXP	0.047	-0.083	-0.006	-0.026	-0.056	0.100	-0.034	0.031	-0.005	0.067	-0.023
BSIZE	1	-0.278**	-0.137	0.016	-0.049	0.113	0.000	0.087	0.152*	-0.010	0.067
BIND	-0.288**	1	0.053	-0.026	0.009	0.036	0.007	0.016	-0.103	-0.079	0.046
DUALITY	-0.127	-0.007	1	0.062	0.186*	-0.129	-0.066	-0.194**	0.028	-0.071	0.097
FOWN	-0.058	-0.009	0.065	1	0.567**	-0.057	-0.092	-0.308**	-0.011	0.026	-0.022
MOWN	-0.060	-0.037	0.181*	0.579**	1	-0.069	-0.133	-0.336**	-0.012	0.046	0.057
UNDERW	0.073	0.089	-0.151*	-0.081	-0.090	1	0.131	0.240**	0.052	0.031	0.008
AUD	-0.004	0.041	-0.066	-0.097	-0.132	0.128	1	0.231**	0.123	-0.044	-0.111
CSIZE	0.072	0.122	-0.181*	-0.294**	-0.300**	0.265**	0.255**	1	0.127	0.057	0.222**
CAGE	0.171*	-0.039	-0.025	-0.045	-0.086	0.029	0.126	0.145*	1	0.083	-0.044
FHORIZON	-0.047	-0.099	-0.075	-0.001	0.058	0.038	-0.041	0.023	0.077	1	-0.143*
LEV	0.039	0.070	0.113	-0.010	0.027	-0.038	-0.128	0.107	-0.062	-0.164*	1

Table 6.15 (continued)

Correlation Coefficients of Variables (Pearson [Spearman] correlation coefficients are below [above] the Diagonal)

\*\*Correlation is significant at the 0.05 level (two-tailed); \*Correlation is significant at the 0.10 level (two-tailed).

Negative coefficient sign on the ethnicity (Bumiputera) of audit committee (ACETH) with SQFER, to some extent, indicate that more diversity in terms of ethnic groups will result in more effective audit committee, and therefore, less forecasts errors.

In addition, there is a number of significant correlations existing between many independent variables of this study. Audit committee size (ACSIZE) is found to have a negative significant correlation with audit committee financial expertise (ACFEX), proposing that the higher the size of IPO audit committee, the lower the directors with financial expertise. Further, ACSIZE is positively and significantly related to audit committee ethnicity (ACETH), audit committee stock ownership (ACSOW) and board size (BSIZE). This correlation indicates that the greater the size of IPO audit committee, the higher the percentage of Malay ethnic group (Bumiputera) represented on the audit committee. Also, when the IPO company has a large board of directors, it is more likely to form large audit committee.

As presented in Table 6.15, audit committee independence (ACIND) is found to be significantly and positively correlated to ACETH and BIND. The positive relationship among the percentage of independent directors sitting on the audit committee (ACIND) with Malay ethnic ratio (ACETH) indicates the domination of Malay (Bumiputera) directors in the composition of the independent directors. In addition, it suggests that the more independent IPO audit committee is a result of more independent board of directors.

For the ACFEX, the correlation results show that the greater percentage of financially expert directors on the IPO audit committee is related to more working experience (ACEXP) they have. It is interesting to note that there is a significant positive relationship between audit committee gender diversity (ACGED) and family ownership (FOWN), which indicates that the boards with great shareholding family directors are more likely to appoint more females on the audit committee. Regarding ACETH, it is found to be positively correlated with BIND at significant level of 5%. This suggests that even though the Chinese dominate the boards, but the greater the board independence, the more the appointed Malay directors on audit committee. Surprisingly, there is a negative and significant correlation between the IPO audit committee's level of education (ACEDU) and the level of experience (ACEXP), indicating less working experience in highly educated IPO audit committees.

The IPO company size (SIZE) as measured by natural log of total assets is significantly correlated to many of the variables (ACETH, ACSOW, DUALITY, FOWN, MOWN, UNDERW, and AUD). This supports the need to control for the IPO company size in the multivariate tests.

In terms of the ownership variables, audit committee stock ownership (ACSOW), family ownership (FOWN), and management ownership (MOWN) are significantly associated with many of the other variables examined in this study. The three variables are negatively and significantly correlated with the IPO company size. For the ACSOW, the Table 6.15 shows that it is positively and significantly correlated to ACSIZE, FOWN and MOWN. In contrast, there is a significant negative correlation between ACSOW and audit committee financial expertise (ACFEX) and board size (BSIZE). The evidence suggests that the higher the shareholding by the audit committee directors of IPO company, the higher the number of audit committee

directors; the greater the shares owned by family and executive directors on board, the lower the number of audit committee directors with financial expertise, and the lower the number of board directors. With respect to MOWN, it has a significant positive correlation to ACSOW, DUALITY, and FOWN.

In terms of the multicollinearity between the variables under this study, the correlation matrix provides evidence that no multicollinearity exists between the variables since none of the variables correlates above 0.80. The correlation values of all variables are less than 0.60.

For the non-parametric Spearman correlation, above the diagonal in Table 6.15, the two dependent variables, AFER and SQFER are also significantly positively correlated as found in the Pearson correlation. Based on the Spearman correlation, there is no association among independent variables and AFER or SQFER, which is different from the results of Pearson correlation. These can be attributed to the greater skewness and kurtosis related to the management earnings forecasts errors variables (AFER and SQFER), before deleting the outliers as indicated in the Section 6.6.2. Likewise the Pearson correlation, Table 6.15 illustrates several of significant correlated audit committee variables are the same as found in Person correlation. Furthermore, the IPO company size (CSIZE) is yet again found to be significantly correlated to many of the other variables of this study.

#### 6.6 Data Preparation for Regression Analysis

Several of the current statistical tests depend on some particular assumptions about the real variable to be utilized in the data analysis. Therefore, the regression models of this study were diagnosed for the ordinary least squares assumptions to avoid misleading results. To ensure the appropriateness of these regressions models, Hair et al. (2010) emphasized that a researcher must evaluate and identify the outliers before processing the data as well as ratio of cases to independent variables. In addition, there are some assumptions that should always be examined by the researchers before undertaking the regression analysis. The most important assumptions that have to be considered linearity, multicollinearity, are normality, autocorrelation. heteroscedasticity and model specification test. The following subsections discuss these tests in detail.

## 6.6.1 Ratio of Observations to Independent Variables

For the regression analysis, Pallant (2011) categorizes the size of sample as a logistic regression assumption. Furthermore, it has been suggested by Hair *et al.* (2010) that the ratio between the number of cases to the number of variables of interest should not be less than 5:1 and 20:1 is the ideal ratio. In this study, the total number of independent variables is 19 in both model one (AFER) and model two (SQFER) with 190 IPOs. Thus, the number of observations to independent variables ratio is 10:1. Therefore, the requirement regarding having as a minimum five observations for each independent variable is satisfied for both models under this current study.

#### 6.6.2. Detecting Outliers

Outliers, as defined by Hair *et al.* (2010, p. 64), are "observations with a unique combination of characteristics identifiable as distinctly different from the other observations". The analysis of regression is sensitive to the outliers and the findings can be unfavorably affected by those extreme observations even as few as one or two. There are a number of methods to test and treat these outliers. Following Guenther and Willenborg (1999), this study employed studentized residuals that are broadly utilized to check and detect the multivariate outliers.

According to Guenther and Willenborg (1999), outliers are identified when the absolute values of the observations' studentized residuals are two or greater. To confirm the outliers, this study conducted the studentized residuals test using STATA statistical software. Four outliers and 16 outliers were detected in model one (AFER) and model two (SQFER), respectively. These extreme cases were eliminated from the sample to avoid the distortion in the findings of this study (Hair *et al.*, 2010). As a result for the treatment of these outliers, the final regressions in this study was conducted using the remaining 186 IPO companies for model one (AFER) and 174 IPO companies for model two (SQFER).

## 6.6.3 Normality and Linearity Tests

Following the detection and removing of the outliers, the normality assessment of the data is required. Based on Hair *et al.* (2010) normality is considered one of the most important fundamental assumptions in multivariate analysis. They emphasized that data which will be used for regression analysis is supposed not to be deviated

substantially from the normal distribution. According to Hulland (1999), a nonnormally distributed variable will be greatly skewed and possibly will distort the association among the variables under study as well as the significance of the test results.

Summery of Sker	Model On	e (AFER)	Model Two	o (SQFER)
Variables	Skewness	Kurtosis	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic
AFER	2.117	8.185	-	-
SQFER	-	-	2.194	7.288
ACSIZE	3.530	15.060	3.388	13.989
ACIND	2.820	9.610	2.807	9.577
ACFEX	0.862	2.814	0.831	2.768
ACGED	1.762	5.321	1.703	5.104
ACETH	0.882	2.837	0.913	2.913
ACSOW	2.071	6.785	2.050	6.633
ACEDU	-0.178	2.124	-0.157	2.108
ACEXP	0.541	2.846	0.509	2.756
BSIZE	0.960	5.560	1.023	5.768
BIND	1.746	6.630	1.682	6.522
DUALITY	1.842	4.392	1.789	4.2
FOWN	1.026	2.619	1.089	2.821
MOWN	1.577	4.838	1.609	4.934
UNDERW	0.747	1.853	0.666	1.714
AUD	-0.238	1.057	-0.208	1.043
CSIZE	1.985	8.993	1.950	8.833
CAGE	0.777	2.469	0.732	2.368
FHORIZON	0.204	2.083	0.213	2.138
LEV	0.837	4.084	0.843	4.006

Table 6.16Summary of Skewness and Kurtosis Values of the Variables

The normality test can be done via many ways. For this study, the statistic of standardized skewness and standardized kurtosis was used to assess the normality using STATA statistical software. Skewness value presents an indication of the distribution symmetry, while kurtosis value indicates the peakedness of that distribution (Pallant, 2007). According to Kline (2011), the values of skewness should not exceed +3 to -3 and values of kurtosis should not exceed +10 to -10. Table 6.16 presents the statistic values of skewness and kurtosis for this study data.

The diagnostic results in Table 6.16 illustrate that one independent variable, which is ACSIZE, in both models is not normal since the skewness and kurtosis values are greater than  $\pm 3$  and  $\pm 10$ , while the normality assumption for other variables is not violated. Based on Gujarati and Porter (2008), the normality assumption can be relaxed when the size of sample is reasonably big, greater than 100 cases. Hence, it is possible that the normality assumption is not very critical in large data sets.

Overall, the results of normality test lead to the conclusion that the data set of this study has no serious violation regarding the normality assumption; thus, it is argued that the data is normally distributed.

To deal with the non-normality variable ACSIZE, the transformation process was conducted <sup>14</sup>. Therefore and for more robustness, audit committee size was transformed by employing Van der Waerden's normal score, as proposed by Cooke (1998) using SPSS 21<sup>15</sup>. The statistic of skewness and kurtosis after doing the transformation is (2.970 and 10.159) in model one (AFER) and (2.847 and 9.446) in

<sup>&</sup>lt;sup>14</sup> One of the choices to deal with a normality problem is the transformation. However, some statisticians have disputed against it. For example, Tabachnick and Fidell (2007) indicated that the transformations of data are not generally suggested, even though they are feasible as a remedy for the problem of normality.

<sup>&</sup>lt;sup>15</sup> The initial regression is done based on the data before transformation of ACSIZE. In the further analysis reported in Chapter 7, transformed ACSIZE was used. In both regressions, there is no large difference in results before and after transformation.

model two (SQFER), which can be considered within the range of  $\pm 3$  and  $\pm 10$ , and they are in line with the rule of thumb.

In terms of linearity, it refers to the level to which a curve of association between two variables approximates a straight line. Hair *et al.* (2010) emphasized on the linearity testing, as it is important to check the linear relationship between dependent and independent variables; and since the concept of correlation relies on a linear relationship. For the multiple regressions analysis, it is supposed that the associations are linear in nature among dependent and independent variables. Thus, linearity testing is a critical issue in regression analysis.

In this study, linearity was tested by comparing the standard deviation of the dependent variables with the standard deviation of the residuals (Hair *et al.*, 2010). In regression, if the standard deviation of the dependent variable is more than the standard deviation of the residuals, the linearity is not a problem. In this study the standard deviation of both dependent variables (AFER= 23.515 and SQFER= 7.601) is higher than the standard deviation of the residuals 21.563 and 6.836 for both models, respectively. Therefore, nonlinearity is not a problem in this study.

## 6.6.4 Multicollinearity and Autocorrelation Test

Multicollinearity is considered as an essential assumption underlying multiple regression analysis. Multicollinearity refers to the situation where there is a precise collinearity existing among some or all explanatory variables. Moreover, it is the level to which every explanatory variable is explained by the set of other explanatory variables (Hair *et al.*, 2010). Hamilton (2005) showed that the existence of great multicollinearity among variables leads the coefficient of estimated regression to be untrustworthy. Thus, the data have to be tested for the existence of multicollinearity. If variables have multicollinearity, they will be deleted.

For testing the multicollinearity, there are some methods. The first and simplest method is the testing of correlation matrix for explanatory variables. As highlighted earlier in Section 6.5, there is no multicollinearity problem among the variables since no correlation values were found above 0.80, which is the rule of thumb for the acceptable level of multicollinearity (Pallant, 2007; Hair *et al.*, 2010).

Moreover and according to Hair *et al.* (2010), there are two other ways for assessing multicollinearity. These measures are: (1) the tolerance value; and (2) its inverse - the variance inflation factor (VIF). These measures present the level to which every explanatory variable is explained by the other explanatory variables. For the tolerance value, to illustrate the absence of multicollinearity problem, the measure between 0 and 1 should be close to 1. Concerning the VIF, it indicates the increasing of the standard errors and coefficients' variance of other variables because of the inclusion of the variable (Hamilton, 2005). Based on Gujarati and Porter (2008) and Hair *et al.* (2010), the rule of thumb for VIF is that a variable whose VIF values are larger than 10 is highly correlated.

The tolerance level and VIF of variables for both models (AFER and SQFER) were examined for multicollinearity diagnosis using STATA statistical software and the results are presented in Table 6.17. It is clear from Table 6.17 that multicollinearity is not a critical issue for the analysis of this study as the tolerance value is greater than

0.10 and VIF is below 10 for all independent variables, which are at acceptable levels.

Therefore, the assumption of multicollinearity is not violated.

Table 6.17Multicollinearity Statistics of Assessing VIF and Tolerance Values for Model One(AFER) and Model Two (SOFER)

Variables	Model	One (AFER)	Model Two (SQFER)		
v unuolos	Colline	arity Statistics	Collinearity Statistics		
	VIF	VIF Tolerance Value		Tolerance Value	
ACSIZE	1.31	0.765	1.34	0.744	
ACIND	1.33	0.754	1.30	0.768	
ACFEX	1.55	0.644	1.67	0.599	
ACGED	1.14	0.877	1.17	0.853	
ACETH	1.23	0.814	1.29	0.774	
ACSOW	1.67	0.599	1.70	0.589	
ACEDU	1.20	0.831	1.21	0.824	
ACEXP	1.54	0.649	1.65	0.606	
BSIZE	1.38	0.724	1.42	0.706	
BIND	1.49	0.671	1.43	0.698	
DUALITY	1.13	0.882	1.15	0.872	
FOWN	1.83	0.546	1.84	0.543	
MOWN	1.73	0.577	1.81	0.551	
UNDERW	1.14	0.876	1.15	0.869	
AUD	1.20	0.833	1.21	0.825	
CSIZE	1.40	0.713	1.40	0.712	
CAGE	1.10	0.913	1.11	0.899	
FHORIZON	1.12	0.896	1.13	0.883	
LEV	1.15	0.868	1.16	0.862	

In terms of autocorrelation, also recognized as serial correlation, it means the correlation of error components across time periods. It is suggested that the residual terms for any two cases should be independent (i.e. uncorrelated). The situation of autocorrelation may affect the classical assumption of regression analysis. However, according to Wooldridge (2012), autocorrelation is a rational attribute of error term, which may only occur in a time series analysis. This study employs cross-sectional

data; therefore the problem of autocorrelation or serial correlation can be ruled out. However, the test of Durbin-Watson (DW) is employed as a statistical test for identifying autocorrelation. In this regard, Kazmier (1996) indicated that value of the test statistics can range from 0 to 4.0. In general, if the value of the statistic is less than 1.4, it represents the presence of a strong positive series of correlation, while a value higher than 2.6 represents the presence of a strong negative series of correlation (Kazmier, 1996). As a rule of thumb, Durbin-Watson should be within the adequate scope of 1.5 to 2.5. The results of the autocorrelation test show Durbin-Watson value of 1.922 and 2.095 for both model one (AFER) and model two (SQFER), respectively. The Durbin-Watson values for both models fall in the satisfactory scope of 1.5 to 2.5, showing independence of observations.

#### 6.6.5 Heteroscedasticity Test

Heteroscedasticity considers one of the common violations in multivariate regression. According to Hair *et al.* (2010), heteroscedasticity refers to the situation when the dispersion of the values of dependent variable is not stable over the values of explanatory variables. If the problem of heteroscedasticity exists, the estimated regression coefficients may be underestimated and the insignificant variables may become statistically significant (Hair *et al.*, 2010). Heteroscedasticity is more common with cross-sectional data. Many tests can be utilized to detect the problem of heteroscedasticity. In the present study, the White General Heteroscedasticity Test was employed to check the heteroscedasicity problem in both models using STATA statistical software. The results reported in Table 6.18 indicate that the *p*-value is greater than 0.05 for both models (AFER and SQFER). Thus, the models do not reject the null hypothesis of homoscedasticicty. Therefore, the models are not suffering from the problem of heteroscedasticity.

Table 6.18

White Test for I	Heteroskedasticity for Model C	ne (AFER) and M	lodel Two (SQFER)
Models	Source	df	р
AFER	Heteroskedasticity	185	0.4655
SQFER	Heteroskedasticity	173	0.4643

### 6.6.6 Model Specification Test

Testing for omitted variables bias in the models of this study is of importance. This is because of that this test is related to the assumption that the error-term and the independent variables in the model are not correlated. Omitting other vital predictor variables in multiple linear regression model or inclusion of the unnecessary variables result in a model's specification errors (Hair *et al.*, 2010). Thus, the estimation of regression coefficient will be affected. Following Hamilton (2005) and Frain (2008), this study employed Ramsey regression specification error test for omitted variables in order to test the null hypothesis that no variable is omitted from the model. A large significance in *p*-value (more than 0.05) means that there is no omitted variable from the model. In this study, the findings of Ramsey test conducted for both models of this study (AFER and SQFER) indicate that *p*-values for the both models are 0.66 and 0.70, respectively. That is, no variable is omitted from the models. Hence, specification errors with reference to omitted variables are not problems for this study.

This study performed the assumptions of normality, linearity, multicollinearity, heteroscedasticity and model specification test to ensure the validity of a statistical conclusion. The regression assumptions have been tested, and it can be concluded that there is no reason to doubt the models of this study.

#### **6.7 Multivariate Analysis**

As one of the main commonly applied techniques, multivariate regression analysis is utilized in this study. This section presents the most appropriate regression tests for the study's data. Further, the results of regression tests are empirically and theoretically discussed and compared to the available findings of prior studies with special concentration on relevant Malaysian empirical work.

Specifically, two models of multiple regressions representing two measures of earnings forecasts accuracy were utilized to test the hypotheses of this study. The first regression is based on absolute forecast error model of accuracy and the other one is based on the squared forecast error model of accuracy. First, the regressions of model one (AFER) and model two (SQFER) are explained. Then, findings on the tests of hypotheses for both models are reported in the next sections in accordance with the hypotheses and independent variables. Lastly, the findings for the control variables are reported and discussed.

Additionally, as highlighted earlier, an analysis of the studentized residuals for each of the models identified four cases as multivariate outliers for the AFER model and 16

cases as multivariate outliers for the SQFER model. These outliers were removed from the sample.

Tables 6.19 and 6.20 present the results of multiple regression analysis for each model linking audit committee characteristics and earnings forecasts accuracy (measured by AFER and SQFER). The results indicate that the F-value for both models (AFER and SQFER) report significant values at the levels of 5% and 1%, respectively. Further, the adjusted  $R^2$  in both models, AFER and SQFER, is 6.29 % and 9.15%, respectively. The statistics show that both models explain 6.29% and 9.15% of the total variance in the earnings forecasts accuracy.

Despite the low level of adjusted  $R^2$ , it is to some extent greater than results reported in the prior Malaysian study by Ahmad-Zaluki and Wan-Hussain (2010), who examined the association between corporate governance and earnings forecasts accuracy measured by AFER, which was 3.00%. Further, this range of adjusted  $R^2$  is acceptable and encouraging compared with previous studies such as the study by Hashim and Devi (2009) on the impact of board attributes and ownership on earnings quality that reported a similar adjusted  $R^2$  at 10.66%. Additional Malaysian researches that examined the association among the mechanisms of corporate governance and other related issues, like earnings management, also resulted in low adjusted  $R^2$  (e.g., Abdullah & Mohd Nasir, 2004 at 5.33%; Abdul Rahman & Ali, 2006 at 12.8%). Further, Rahmat *et al.* (2009) reported  $R^2$  of 4.7% for their basic regression of tested variables. They indicated that this low  $R^2$  is common in studies that investigated the characteristics of corporate governance. Thus, the results of this study indicate that the explanatory power of the models is reasonable compared to prior related Malaysian

studies.

Table 6.19

Multiple Regression Results – Model One (AFER)

$\overline{AFER_{it}} = \beta_0 + \beta_1 ACSIZE_{it} + \beta_2 ACIND_{it} + \beta_3 ACFEX_{it} + \beta_4 ACGED_{it} + \beta_5 ACETH_{it}$
+ $\beta_6 ACSOW_{it} + \beta_7 ACEDU_{it} + \beta_8 ACEXP_{it} + \beta_9 BSIZE_{it} + \beta_{10} BIND_{it} + \beta_{11}$
$DUALITY_{it} + \beta_{12} FOWN_{it} + \beta_{13} MOWN_{it} + \beta_{14} UNDERW_{it} + \beta_{15} AUD_{it} + \beta_{16}$
$CSIZE_{it} + \beta_{17}CAGE_{it} + \beta_{18}FHORIZON_{it} + \beta_{19}LEV_{it} + \varepsilon$

Variables	Predicted sign	Coef.	t-stat	Sig
ACSIZE	-	-11.065	-2.31	0.022**
ACIND	-	0.219	1.03	0.306
ACFEX	-	0.197	1.93	0.055**
ACGED	-	-0.059	-0.50	0.621
ACETH	-	0.102	1.73	0.086*
ACSOW	<u>+</u>	0.316	1.69	0.094*
ACEDU	-	-0.071	-1.14	0.256
ACEXP	-	-1.299	-2.33	0.021**
BSIZE	+	1.106	0.99	0.323
BIND	-	-0.231	-0.95	0.342
DUALITY	+	-2.357	-0.49	0.627
FOWN	<u>+</u>	0.196	1.67	0.097*
MOWN	-	-0.297	-2.07	0.040**
UNDERW	-	-0.230	-2.45	0.015***
AUD	-	1.625	0.44	0.660
CSIZE	-	0.634	0.30	0.762
CAGE	-	-2.367	-1.14	0.255
FHORIZON	+	0.623	1.05	0.297
LEV	+	4.458	0.59	0.558
Constant		31.437	1.02	0.312
n				186
$R^{2}(\%)$				15.91
Adjusted R <sup>2</sup> (%)				6.29
F-value				1.65**

Note: This table shows the results of multiple regressions for AFER as the dependent variable. The experimental variables are the audit committee characteristics: size (ACSIZE), independence (ACIND), financial expertise (ACFEX), gender diversity (ACGED), ethnicity (ACETH), stock ownership (ACSOW), educational background (ACEDU), and experience (ACEXP). The control variables are: board size (BSIZE), board independence (BIND), duality (DUALITY), family ownership (FOWN), management ownership (MOWN), underwriters' reputation (UNDERW), auditors' quality (AUD), company size (CSIZE), company age (CAGE), forecast horizon (FHORIZON), and leverage (LEV).\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

Table 6.20

Multiple Regression Results – Model Two (SQFER)

$DUALITY_{it} + CSIZE_{it} + \beta_1$	$-\beta_{12} FOWN_{it} + \beta_{13}$ $= 7 CAGE_{it} + \beta_{18} FH0$	$MOWN_{it} + \beta_1$ ORIZON <sub>it</sub> + $\beta_{19}$	$4 UNDERW_{it} + \epsilon$	$\beta_{15} AUD_{it} + \beta_{16}$
Variables	Predicted sign	Coef.	t-stat	Sig
ACSIZE	-	-2.934	-1.89	0.061*
ACIND	-	0.134	1.93	0.056**
ACFEX	-	-0.012	-0.35	0.726
ACGED	-	0.067	1.74	0.084*
ACETH	-	0.032	1.59	0.114
ACSOW	<u>+</u>	0.160	2.51	0.013***
ACEDU	-	0.013	0.63	0.532
ACEXP	-	0.040	0.22	0.830
BSIZE	+	0.086	0.23	0.817
BIND	-	-0.061	-0.77	0.445
DUALITY	+	-0.271	-0.17	0.864
FOWN	<u>+</u>	-0.037	-0.94	0.350
MOWN	-	-0.057	-1.20	0.232
UNDERW	-	-0.059	-1.94	0.054**
AUD	-	-2.396	-1.97	0.051**
CSIZE	-	1.174	1.73	0.086*
CAGE	-	-0.524	-0.77	0.442
FHORIZON	+	0.323	1.61	0.110
LEV	+	2.310	0.94	0.350
Constant		-10.137	-1.00	0.321
n				174
$R^{2}$ (%)				19.13
Adjusted $R^2$ (%)				9.15
F-value				1.92***

$SQFER_{it} = \beta_0 + \beta_1 ACSIZE_{it} + \beta_2 ACIND_{it} + \beta_3 ACFEX_{it} + \beta_4 ACGED_{it} + \beta_5 ACETH_i$
+ $\beta_6 ACSOW_{it} + \beta_7 ACEDU_{it} + \beta_8 ACEXP_{it} + \beta_9 BSIZE_{it} + \beta_{10} BIND_{it} + \beta_{11}$
$DUALITY_{it} + \beta_{12} FOWN_{it} + \beta_{13} MOWN_{it} + \beta_{14} UNDERW_{it} + \beta_{15} AUD_{it} + \beta_{16}$
$CSIZE_{it} + \beta_{17}CAGE_{it} + \beta_{18}FHORIZON_{it} + \beta_{19}LEV_{it} + \varepsilon$

Note: This table shows the results of multiple regressions for SQFER as the dependent variable. The experimental variables are the audit committee characteristics: size (ACSIZE), independence (ACIND), financial expertise (ACFEX), gender diversity (ACGED), ethnicity (ACETH), stock ownership (ACSOW), educational background (ACEDU), and experience (ACEXP). The control variables are: board size (BSIZE), board independence (BIND), duality (DUALITY), family ownership (FOWN), management ownership (MOWN), underwriters' reputation (UNDERW), auditors' quality (AUD), company size (CSIZE), company age (CAGE), forecast horizon (FHORIZON), and leverage (LEV).\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

#### 6.7.1 Audit Committee Size (ACSIZE) and Earnings Forecasts Accuracy (H2)

Results reported in Table 6.19 for the model one (AFER) show that the size of audit committee (ACSIZE) has a negative and significant relationship with AFER (i.e., positive with IPO earnings forecasts accuracy) (t= -2.31, *p*-value=0.022). Likewise, the findings of model two (SQFER) illustrated in Table 6.20 indicate that ACSIZE has a negative and significant relationship with SQFER (i.e., positive with IPO earnings forecasts accuracy) (t= -1.89, *p*-value=0.061).

As a result, hypothesis H2 which predicts that audit committee size is positively related with earnings forecasts accuracy is supported in both models (AFER and SQFER). The results indicate that the more the directors on the IPO audit committee, the more accurate the earnings forecasts. This result is consistent with the univariate analysis in Section 6.4.1. These findings provide support for the resource-dependence theory. That is, more members on audit committee provide a variety of experience, knowledge, legitimacy and skills that lead to supporting the effectiveness of the committee, therefore increasing the accuracy of disclosed earnings forecasts. Thus, it is likely that the more audit committee is composed of high skilled directors, the more effective it is. Further, this finding supports the claim that companies with larger audit committees dedicate more resources to monitor the quality of financial reporting and all internal control systems (Anderson, Mansi, & Reeb, 2004); and enhance the quality of discussions among the directors on the audit committee (DeZoort & Salterio, 2001).

This result is in line with the study of Ahmad-Zaluki and Wan-Hussin (2010) in the context of Malaysian IPOs. The results also are consistent with the findings of other related issues. For example, the result is in line with Li, Pike, and Haniffa (2008) who found that companies with greater number of directors on audit committee are inclined to provide greater disclosure. Further, it supports Yang and Krishnan (2005), Greco (2012) and Amar (2104) who reported a negative relationship between the size of audit committee and the practices of earnings management. Felo *et al.* (2003) and Mohamad-Nor, Shafie, and Wan-Hussin (2010) indicated that more audit committee members result in improving the financial reporting quality. Lin *et al.* (2006) found a big sized audit committee can reduce occurrence of earnings restatement. Finally, the findings support García-Meca and Sánchez-Ballesta (2010) who reported that a bigger audit committee size may scrutinize for any financial statement manipulation.

Accordingly, the size of the audit committee plays a major role in overseeing management and determining the level of IPO earnings forecasts accuracy. This is because of larger audit committees are more effective in monitoring executives and giving sufficient time and effort to guarantee that the disclosed information is accurate as well as complete. Therefore, larger audit committees are found to be stronger in terms of internal governance, and in this manner, contribute to a decrease in agency problems in the course of positively influencing the audit committee's independence and decreasing managerial entrenchment. This supports the requirements of Malaysian corporate governance that emphasizes on the importance of the audit committee comprising not less than three directors.

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# 6.7.2 Audit Committee Independence (ACIND) and Earnings Forecasts Accuracy (H3)

Findings reported in Table 6.19 for the model one (AFER) indicate that the independence of audit committee (ACIND) has a positive but insignificant association with AFER (i.e., negative with IPO earnings forecasts accuracy) (t= 1.03, p-value=0.306). Surprisingly, the findings of model two (SQFER) reported in Table 6.20 indicate that ACIND has a positive and significant relationship with SQFER (i.e., negative with IPO earnings forecasts accuracy) (t= 1.93, p-value=0.056).

Therefore, the results on ACIND do not support the prediction or the interests' alignment hypothesis of the agency theory, which proposes that independent directors undertake a significant task in aligning the interests of agents with those of shareholders by enhancing the company with efficient overseeing (Fama & Jensen, 1983). Thus, hypothesis H3 that states that more independent directors on the IPO audit committee lead to more accuracy of earnings forecasts is not supported in both models (AFER and SQFER). This indicates that IPO companies with more percentage of independent directors on their audit committee issue inaccurate earnings forecasts. This result is consistent with the univariate analysis in Section 6.4.1.

Although independent directors are seen as better monitors than non-independent directors, and are related to strong governance, the results of this study imply that independent directors sitting on the IPO audit committee were inefficient. The results in this study propose that they had failed to promote better governance through higher accuracy concerning earnings forecasts. Therefore, these results do not support the

reform actions' direction of Revised Code (2007) that emphasize on the need for increasing the number of independent directors on the audit committees.

In the Malaysian context, this result is in line with the study of Saleh and Ismail (2009) on Malaysian IPOs who reported insignificant association between the independence of audit committee and earnings management. Moreover, the results are in line with the findings of Abdullah, Yusof, and Nor (2010) that the higher the percentage of independent directors on the audit committee, the higher the likelihood of financial misstatement. Further, it supports the results that independent audit committee is not related to reporting quality (Ismail, Iskandar, & Rahmat, 2008). It lends also support to Abdul Rahman and Ali (2006) who found insufficient evidence of a negative association between independent audit committees and earnings management. From a non-Malaysian context, the result is similar to Bédard et al. (2008) who indicated that there is an insignificant relationship between audit committee independence and the earnings forecast errors in the Canadian IPO prospectuses. In addition, it supports Baccouche et al. (2013) who found a positive relationship between audit committee independence and earnings management. However, this finding is inconsistent with Ahmad-Zaluki and Wan-Hussin (2010) who found that the greater proportion of independent members in the audit committee leads to more accurate earnings forecasts in the IPO prospectuses. Further, the results are inconsistent with Bradbury et al. (2006), Saleh et al. (2007), Amar (2014), and Salleh and Haat (2014) who found that more independent directors on audit committees is related to a lower level of earnings management.

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The reason, which possibly contributes to the inverse relationship between audit committee independence and accuracy of IPO management earnings forecasts, is that audit committees with a majority of external or independent directors may have an unfavorable effect on the process and on the timing of making decisions. Further, this high membership of independent directors might result in less sharing of information and communication among them, particularly, as they cannot be present for some meetings of the committee. Thus, these directors will be more reliant on the management in terms of having internal information. In so doing, the company management will have more effect on the committee members as well as have more opportunities to undertake earnings management.

Another plausible explanation for the result that independent directors on IPO audit committee result in more earnings forecasts errors can be attributed to the assumptions of agency theory that the overseeing responsibility of independent directors could not entirely be relevant to countries with a highly concentrated ownership structure, such as Malaysia. Zain and Subramaniam (2007) pointed to the impact of the concentrated ownership of insiders on the level of directors' independence. In Malaysia, prior studies had asked about the independence of the outside directors; as their appointment was suggested by the controlling shareholders (Abdullah, 2004). Therefore, the recommendation to follow the best practice of corporate governance by appointing majority of independent directors on the audit committee does not enhance the credibility of earnings forecasts. Thus, the results of this study regarding independent directors is a signal to the related authorities that the position of being independent from the management is not an assurance of improved controlling and overseeing, and therefore warrants further investigation.

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In Tables 6.19 and 6.20, it is noticed that the contradictory findings between the independence of board and the independence of audit committee propose that these two internal mechanisms are performed in a different ways towards the issuing of accurate earnings forecasts. This finding is confusing since independent directors on the audit committee are at the same time independent directors on the board of directors. This finding can be attributed to the type of tasks entrusted to the independent directors. According to the jobs and tasks, directors on the board undertake greater responsibility within the total operations of the company, besides to just oversee the quality of financial reporting. On the other hand, the tasks of audit committee directors are mostly restricted to the financial reporting matters. From this perspective, independent directors working on the board have more understanding about the business of the company, which subsequently results in fewer forecasts errors.

# 6.7.3 Audit Committee Financial Expertise (ACFEX) and Earnings Forecasts Accuracy (H4)

The reported results for the model one (AFER) in Table 6.19 reveal surprising findings concerning the financial expertise of audit committee (ACFEX). It shows that ACFEX has a positive and significant association with AFER (i.e., negative with IPO earnings forecasts accuracy) (t= 1.93, *p*-value=0.055). In contrast to the results of model one (AFER), the results of model two (SQFER) illustrated in Table 6.20 show that ACFEX has a negative but insignificant association with SQFER (i.e., positive with IPO earnings forecasts accuracy) (t= -0.35, *p*-value=0.726).

The result of model one (AFER) suggests that more directors on audit committee with financial expertise will not result in increasing the forecast accuracy of IPO earnings. Thus, hypothesis H4, which predicts that the more the percentage of financial expertise, the more accurate the earnings forecasts in IPO prospectus, is not supported, although the correlation between ACFEX and earnings forecasts accuracy based on model two (SQFER) is as expected. However, the association is insignificant. The results of model two (SQFER) are in line with Saleh *et al.* (2007) who found that the percentage of audit committee directors with accounting knowledge is insignificantly related to lower earnings management. This result is consistent with the univariate analysis in Section 6.4.1. The results are not consistent with the view of the resource-dependence theory concerning the pivotal role of financial experts of audit committee, where such financially expert directors provide many resources for better monitoring of management's disclosure practices.

This result entails that the merit of financial expertise to monitor the quality of financial reporting is not good enough to affect the accuracy of earnings forecasts. It also proposes that the existence of a financial expert on the audit committee does not guarantee an essential role in performing the monitoring responsibility of the audit committee. Therefore, this study concludes that the requirements of MCCG that at least one member of the audit committee directors must be a member of an accounting association or body and financially literate does not lead to higher earnings forecasts accuracy.

The findings in this study are in line with Ahmad-Zaluki and Wan-Hussin (2010) who found that IPO audit committee financial expertise does not have influence on earnings forecasts accuracy. In addition, it is in line with Lin *et al.* (2006), Hamdan *et al.* (2013), and Salleh and Haat (2014) who failed to find a significant relationship between financially expert directors of audit committee and earnings quality. Further, the results support Karamanou and Vafeas (2005). Nevertheless, this result is inconsistent with Truong and Dunstan (2011) and Abernathy *et al.* (2013) who found that the audit committee's accounting/financial expertise is related to less forecast errors and significantly related to more accurate and fewer dispersed analysts' earnings forecasts, respectively. It also contradicts the result of some prior studies that examined the impact of financial expertise on the practices of earnings management, such as that of Carcello *et al.* (2006), Baxter and Cotter (2009), and Lo, Wong, and Firth (2010), who found a negative association. Besides, it is inconsistent with the results of Rahmat *et al.* (2009) that expertise in finance and accounting among the directors of audit committee improves the financial statement's quality.

One reasonable justification for the negative sign in model one (AFER) and insignificant finding in model two (SQFER) between audit committee financial expertise and earnings forecasts accuracy is that audit committees of IPO companies include only 48.06% of directors who are financially literate. It is disputed that directors who do not understand the accounting figures and reports possibly will not be able to raise the right questions nor will they understand the answers, which may probably clarify the insignificant results of this study. Further, Abdul Rahman and Ali (2006) who did not find sufficient evidence regarding audit committee financial expertise claimed that the establishment of audit committees has yet to accomplish its proposed aim in Malaysia.

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An additional explanation why audit committee financial expertise does not enhance earnings forecasts accuracy may be because of the measurement variable. The liberal definition of financial expertise used in this study, is any director with knowledge in accounting and financial professional. This study only focuses on the audit committee members who are qualified in finance and accounting. Perhaps, every director on audit committee comes from a different professional group (i.e., lawyers, governance experts, bankers, politicians, academicians and government officials) who might add significance to the IPO company. Cohen, Hoitash, Krishnamoorthy, and Wright (2013) found that the quality of financial reporting is related to audit committee directors who have supervisory and industry expertise. In general, they proposed that for more efficient overseeing of the financial reporting process, it is valuable for the directors of audit committees to have industry expertise besides accounting expertise. Therefore, investigation on the different professional backgrounds of directors will produce a remarkable avenue for future studies.

Finally, as this study observes that experience of directors on the audit committee (ACEXP) has a strong positive influence on earnings forecasts accuracy. Therefore, to some extent, financial expertise of the audit committee is not an issue if the audit committee members possess the relevant abilities and work experience to oversee the financial reporting process.

# 6.7.4 Audit Committee Gender Diversity (ACGED) and Earnings Forecasts Accuracy (H5)

The result documented for the model one (AFER) in Table 6.19 shows that the gender diversity of audit committee (ACGED) has a negative but insignificant relationship

with AFER (i.e., positive with IPO earnings forecasts accuracy) (t= -0.50, p-value=0.621). Contradictory to the prediction of hypothesis H5, the results of model two (SQFER) reported in the Table 6.20 indicate that ACGED has a positive and significant association with SQFER (i.e., negative with IPO earnings forecasts accuracy) (t= 1.74, p-value=0.084).

As a result, hypothesis H5 which predicts that the proportion of women directors on the audit committee is positively related with the accuracy of earnings forecasts is not supported in both models (AFER and SQFER). Therefore, the results of ACGED do not provide support for the resource-dependence theory which suggests that the female directors could be considered as important for the company. Further, the results also do not support the signaling theory that suggests gender diversity to be used as an informational signal that has the ability to impact the external environment.

The results of ACGED and AFER are consistent with univariate analysis in Section 6.4.1 that found more females on audit committee lead to more accuracy, but based on the t-test and Mann-Whitney test, there is insignificant difference between audit committee gender diversity in both groups of low and high accurate earnings forecasts. That is, the women on audit committees, to some extent, can enhance the credibility of earnings forecasts. This finding is consistent with Ahmad-Zaluki (2012) who showed that higher percentage of female directors results in lower long-run underperformance in the post-IPO period. In addition, it supports Ye *et al.* (2010) who provided evidence of no significant differences in earnings reporting for companies with female and male directors. However, this result is not in line with Thiruvadi and Huang (2011) who found that women on audit committees have a considerable impact

on the quality of financial reporting; they also enhance the effectiveness of corporate governance significantly. Further, this result is not in line with Krishnan and Parsons (2008), Peni and Va"ha"maa (2010), and Srinidhi *et al.* (2011) who found that gender diversity has positive effect on earnings reporting quality; and with Gul *et al.* (2007) and Bermig and Frick (2010) who reported that women directors are associated with less earnings management. Peni and Va"ha"maa (2010) argued that female CFOs conduct more conservative financial reporting strategies relative to their male counterparts.

In terms of ACGED and SQFER in model two, the result reported is similar to Buniamin *et al.* (2012) who found women on boards have a positive significant association with earnings management. This finding is also consistent with some other studies, which indicate that gender diversity does not necessarily increase company performance (e.g., Rose, 2007); or company value (e.g., Campbell & Minguez-Vera, 2008). However, it is not in line with Liu *et al.* (2013), Garba and Abubakar (2014) who found a positive impact for the women on the performance of companies or Kim *et al.* (2013) who showed that women on boards are associated with less fraud.

The reason which possibly contributes to the insignificant and inverse relationship between audit committee gender diversity and IPO earnings forecasts is that, there is comparatively small percentage of audit committee directors who are women on the Malaysian IPO companies. This small percentage does not authorize them to be influential enough to act differently toward overseeing. These results may also lend support to the perspective that female directors are still addressed as indications only of gender diversity instead of being a source of important input and contribution to board and audit committee activities.

Another reason is that, Ahmad-Zaluki (2012) indicated that IPO companies in Malaysia have still not acknowledged the effect that women have on the performance of a company owing to the feminine characteristics they bring into the top management levels. Additionally, it can also be argued that the experience of women executives is less than the experience of men (Berger *et al.*, 2013). Further, those finding may be traced back to the socio-psychological attitude adopted by female directors, and by the visibility of barriers that would hinder their hierarchical progression (Hili & Affes, 2012).

In general, this finding does not necessarily contradict with the view that the existence of women on the boards and audit committees of the IPO companies may be encouraging and helpful. However, it suggests that the low number of female directors on the audit committee of IPO companies does not give them adequate overseeing power to increase the accuracy of management earnings forecasts disclosed in the prospectus. This conclusion may provide support for the recommendation of MCCG 2012 that the board should ensure women candidates are recruited as well as the board should disclose clearly in the annual report its policies and goals on the diversity of gender. This is because women are more reliable monitors and their presence on audit committees may lead to increasing the meeting frequency and, thereby its activity (Bermig & Frick, 2010). Further, female directors on the boards increase the level of independence of boards as they are largely inclined

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to ask questions that would not be addressed by male directors, and thus, shareholders' interests are expected to be better protected (Carter *et al.*, 2003).

# 6.7.5 Audit Committee Ethnicity (ACETH) and Earnings Forecasts Accuracy (H6)

Turning to the influence of ethnicity on accuracy of IPO earnings forecasts, the findings presented for model one (AFER) in Table 6.19 show unexpected results that the ethnicity of audit committee (ACETH) has a positive and significant association with AFER (i.e., negative with IPO earnings forecasts accuracy) (t= 1.73, *p*-value=0.086). Similarly, the findings of model two (SQFER) documented in Table 6.20 demonstrate that ACETH has a positive but insignificant relationship with SQFER (i.e., negative with IPO earnings forecasts accuracy) (t= 1.59, *p*-value=0.114).

This result does not support hypothesis H6 since positive coefficient on ethnic groups on audit committee proposes that higher proportions of Malays on audit committee led to higher forecasts errors (i.e., less accurate forecasts). That is, the results are not in line with the resource-dependence theory, which suggests that diversity of directors is an imperative element as it can lead to wider networks within the corporation. These findings are consistent with univariate analysis results of model one in Section 6.4.1 since the high accuracy forecast is related to lower mean of ethnic diversity on the audit committee.

These results are in line with Abdul Rahman and Ali (2006) and Abdul-Rauf *et al.* (2012) who indicated that there is no effect of ethnicity on decreasing the practices of earnings management. Further, it supports the findings of Mohammad *et al.* (2011) that Malay directors are positively related to earnings management. The result also is
consistent with Garba and Abubakar (2014) who found no impact of ethnic diversity on the performance of a company. However, Haniffa and Cooke (2005) proposed that disclosure cannot be cultural (i.e., ethnicity) free.

A plausible explanation for this finding is that different ethnics may result in and enhance the conflicting thoughts in the process of decision-making (Westphal & Milton, 2000). Additionally, ethnic diversity may generate more conflict among the directors on the audit committee. Berger *et al.* (2013) showed that individuals who come from different backgrounds, may damage their collaboration and confine their capability to undertake decisions suitably. Therefore, the diversity may lead to decreasing the quality of earnings forecasts since the members on the audit committee are directly involved in monitoring the management and its activities, such as financial disclosure.

A further reason could be that Bumiputera directors on the audit committee do not play significant role in the governance of the IPO companies. Additionally, Bumiputera directors are associated with more individualistic behavior that is due to the modernization of Malaysia and the increase in Bumiputera ownership of national wealth since the introduction of the national economic and development policies in 1971 and 1991. In addition, the existence of Malay directors on the boards of directors is only to perform the listing requirements of Bursa Malaysia that indicate that Malays should possess 30% of the shares (Mohammad *et al.*, 2011).

# 6.7.6 Audit Committee Stock Ownership (ACSOW) and Earnings Forecasts Accuracy (H7)

Concerning the audit committee stock ownership (ACSOW), the result presented for the model one (AFER) in Table 6.19 indicate that the shareholding of audit committee (ACSOW) has a positive and significant association with AFER (i.e., negative with IPO earnings forecasts accuracy) (t= 1.69, *p*-value=0.094). In the same way, the findings of model two (SQFER) documented in Table 6.20 show that ACSOW has a positive and significant association with SQFER (i.e., negative with IPO earnings forecasts accuracy) (t= 2.51, *p*-value=0.013).

This finding proposes that as the proportion of shares owned by the directors of audit committee increases, the likelihood of earnings forecasts errors increases. Thus, it supports the hypothesis H7 that there is a relationship between audit committee shareholding and accuracy of earnings forecasts. It implies that directors on the audit committee have incentives to support the management to protect their own interests (Carcello & Neal, 2003), as well as to increase the value of their shares. In other words, when the amount of their shareholding in the IPO company increases, they become less effective in monitoring financial reporting and disclosure. Thus, the result is inconsistent with agency theory that ownership is one of the major mechanisms of corporate governance that can resolve agency problems as well as lead to more efficient overseeing (Jensen & Meckling, 1976). These findings are consistent with the results of univariate analysis in Section 6.4.1 as the high accuracy forecasts group is related with lower mean of ACSOW of the audit committee. These results are in line with Hamdan *et al.* (2013) who claimed that audit committee members' shareholding leads to reduction in their independence, therefore confining their ability to develop earnings quality. Further, it supports Mangena and Pike (2005), who found a negative and significant relationship between the shareholding of audit committee directors and the financial disclosure quality. It also lends support to the results of Bédard *et al.* (2004) and Yang and Krishnan (2005) who reported that shareholding by the audit committee directors is positively related to the level of earnings management. Li *et al.* (2012) also found the shareholding of directors on the audit committees to be negatively related to the intellectual capital disclosure.

The reason for this result is that, Haniffa and Hudaib (2006) proposed that great ownership is inappropriate in the Malaysian environment because of the hazard of mismanaging the resources of companies at the expense of the minority shareholders. In this study, high shareholding by IPO audit committee directors appears to be detrimental to the independence of those directors, and therefore influences their efficiency in overseeing the quality of earnings forecasts. Large ownership of shares possibly will generate conflict of interests. For example, the audit committee directors might support the policies of management rather than overseeing the management (Mangena & Pike, 2005).

# 6.7.7 Audit Committee Educational Background (ACEDU) and Earnings Forecasts Accuracy (H8)

In terms of model one (AFER), the results reported in Table 6.19 show that the ACEDU has the expected direction but the association is insignificant (t= -1.14, *p*-value=0.256). This result does not provide support for hypothesis H8. Thus, the

ACEDU is not a fundamental feature that could influence the incidence of forecasts errors in Malaysian IPO companies since the result is insignificant. The results of model two shown in Table 6.20 indicate that ACEDU has a positive association with SQFER. However, it is insignificant (t= 0.63, *p*-value=0.532). Thus, result of model two (SQFER) does not support hypothesis H8. That is, the results do not provide support for the resource-dependence theory. These results are inconsistent with the results of univariate analysis in Section 6.4.1 that indicate the high accuracy earnings forecasts group is related to higher mean of ACEDU of the audit committee.

This finding does not corroborate the alternative view that the existence of educated directors on the audit committee can understand and identify any irregular issues in the process of monitoring the preparation and issuing of the financial disclosures. In turn, this may lead to better controlling and monitoring environment and thus better financial reporting. Such level of education should create a permissive environment in which audit committees may work to prevent more forecasts errors of earnings. However, this results show that the educational background of audit committee directors may hinder the accuracy of earnings forecasts disclosed in IPO prospectus.

These findings provide support to previous studies that found no association between educational background and earnings management. For example, Qi and Tian (2012) failed to find significant association between the education level of audit committees directors and earnings management. Further, Qi *et al.* (2012) showed that top management team having higher levels of education are related to the practice of earnings management. Nevertheless, these findings are inconsistent with Dionne and Triki (2005) who found empirical evidence regarding the significance of education for

the performance of audit committee directors and propose that directors with a financial education can manage more the risks they face. Further, the results do not support the study of Amran (2011) that directors with degrees and above do considerably affect the performance of Malaysian listed companies.

The reason that probably contributes to the insignificant and unexpected association between audit committee educational background and accuracy of IPO earnings forecasts is that the tasks carried out by the committee members do not perhaps require high educational level. That is, it is enough for the committee directors to have adequate skills in order to understand and monitor the disclosed earnings forecasts. These equivalent skills could be gained from experience in working as audit committee members in other companies or from experience in working in positions with similar tasks to audit committee. This proposes that education is not a useful attribute for the effectiveness of audit committee. It appears that, company boards should concentrate their processes on the forming of audit committee on other criteria that may better predict earnings forecasts.

# 6.7.8 Audit Committee Experience (ACEXP) and Earnings Forecasts Accuracy (H9)

As expected, the results of model one presented in Table 6.19 show that ACEXP is negatively and significantly associated with AFER (t= -2.33, *p*-value=0.021). This result indicates that directors with more years working in positions related to monitoring tasks have positive impact on the accuracy of IPO earnings forecasts. Thus, the results of AFER model do support hypothesis H9 and the resource-dependence theory. This finding is in line with the results of univariate analysis in

Section 6.4.1 as the high accuracy forecasts group is related with higher mean of ACEXP of the audit committee. That is, the increase in the number of serving years of directors provides them the capability to efficiently monitor the management, which results in a higher quality of financial reporting and disclosure. This finding is in line with Matsunaga and Yeung (2008) who found the quality of a company's financial disclosure is a function of the financial experience of CEO's. Specifically, they reported that companies directed by ex-CFOs are inclined to be more conservative in their financial reporting and the analysts' forecasts for companies directed by ex-CFOs are more accurate, less dispersed and less volatile.

The result also is consistent with Qi and Tian (2012) who reported that audit committee members with financial working experience vis-à-vis those lacking such experience are more efficient in overseeing the practices of earnings management. It is argued that audit committee members having financial working experience will be so familiar with the financial reporting process and it is easy for them to detect the earnings management activities. Therefore, the directors with working experience on audit committees are able to understand earnings forecasts errors compared to those lacking such experience and they are more likely to issue accurate IPO earnings forecasts. DeZoort (1998) showed that the experienced members of audit committee have the ability to undertake the judgment and decisions of internal control better than members without such experience. Surprisingly, for the model two, ACEXP is found to be positively related to SQFER. Nevertheless, the relationship is insignificant (t= 0.22, *p*-value=0.830).

#### 6.7.9 Results and Discussion on the Control Variables

This section provides detailed discussion on the control variables employed in this study. These control variables include board size, board independence, CEO duality, family ownership, management ownership, underwriter's reputation, auditor's quality, company size, company age, forecasts horizon and leverage. With the purpose of observing whether these variables have an influence on, or determine IPO earnings forecasts accuracy, all control variables were subjected to multivariate tests. Tables 6.19 and 6.20 demonstrate the findings of these control variables.

## **Board Size**

The results reported in Tables 6.19 and 6.20 show that the board size (BSIZE) has the expected direction but the association is insignificant with both AFER (t= 0.99, p-value=0.323) and SQFER (t= 0.23, p-value=0.817). Based on these results, the BSIZE does not significantly determine the earnings forecasts accuracy in Malaysian IPO companies. That is, as the size of the board of directors increases, the level of earnings forecasts errors increase.

The results are consistent with some previous studies. For example, the size of board of directors was reported to have a positive and insignificant association with earnings forecasts errors in the study of Karamaou and Vafeas (2005) and the study of Ahmad-Zaluki and Wan-Hussin (2010) on Malaysian IPOs. Further, the relationship was found to be significantly positive in the study of Mnif (2010) on French IPOs. Additionally, the findings of this study are comparable to the previous Malaysian studies that failed to report empirical evidence on the influence of board size on the

level of voluntary disclosure (Wan-Hussien, 2009), and earnings management (Abdul Rahman & Ali, 2006; Salleh & Haat, 2014).

One argument behind this result of the board size and the level of earnings forecasts accuracy could be that when board size increases, the directors turn out to be less expected to judge the actions of management. Further, they will be unproductive in conducting overseeing and controlling tasks because of the coordinating and processing difficulties as there are many directors on the board. In addition, Larmou and Vafeas (2010) indicated that larger boards face the difficulties of harmonization, lack of consistency and slower decision-making. However, the board with few directors may perform with more effectiveness and decrease information asymmetry between the companies and investors (Nan, Wei-li, & Li-Yan, 2011).

Another reasonable explanation for this finding is that companies in developing countries, such as Malaysia, are more family-dominated and they have more family directors on their boards. Therefore, an increase in the board size possibly will not always result in better governance. While MCCG and BMLR do not indicate the number of directors that should sit on the board, they motivate companies to assess the size of board in order to enhance effectiveness of the participation from the board directors.

## **Board Independence**

The findings presented in Tables 6.19 and 6.20 show that board independence (BOIND) is found to be negatively related to the level of earnings forecast errors (AFER and SQFER), indicating that independent directors lead to increasing the level

of accuracy. However, the coefficient of BOIND is not statistically significant (t= -0.95, *p*-value=0.342 in AFER; t= -0.77, *p*-value=0.445 in SQFER). This finding is contrary to the agency theory that proposes that independent directors are an efficient monitoring mechanism over the activities of management. The agency theory also claims that independent directors significantly support board effectiveness and therefore decrease the uncertainty (Fama & Jensen, 1983).

This result is in line with Karamaou and Vafeas (2005) and Bédard et al. (2008) who failed to find any significant relationship between board independence and earnings forecast accuracy. Further, the result is in line with existing evidence for Malaysian companies. It has been found that independent directors are not associated with earnings forecast accuracy (Ahmad-Zaluki & Wan-Hussin (2010), earnings management (Abdul Rahman & Ali, 2006), and the issue of financial restatements (Abdullah et al., 2010). In addition, Saleh et al. (2005) indicted that independent board directors are insignificantly associated with the practices of earnings management in companies with duality status. Likewise, the result of this study is similar to insignificant association found between outside directors and earnings management in some researches undertaken in Asian countries, such as Hong Kong (e.g., Jaggi, Leung, & Gul., 2009); and Indonesia (e.g., Siregar & Utama, 2008). On the other hand, this result is not in line with Mnif (2010) who found significant association between board independence and earnings forecasts accuracy. Moreover, this result is inconsistent with the findings of other associated issues. For example, independent directors decrease the fraud of financial statement (Beasley, 1996) and enhance audit quality (Salleh et al., 2006).

The plausible explanation for this result is that the existence of board independence is only to adhere to the MCCG, which requires that one third of board members are independent, instead of providing strict overseeing of management's activity. The average directors on board in this study is not composed of a majority of independent directors with a mean of 37.57%. That is, the majority is dominated by inside management. The findings show that the minimum composition of one-third independent directors, as recommended by the MCCG is not adequate to monitor the IPO management from issuing less accurate earnings forecasts. The domination of inside directors on boards in Malaysian companies raises questions concerning the quality and liability of independent directors when some independent directors are not really independent of the management. While ownership and control are very much concentrated in family companies, the demand for independent directors has decreased (Ali, Chen, & Radhakrishnan, 2007; Klein, Shapiro, & Young, 2005). Since Malaysia is a country with a concentrated ownership structure, the effectiveness of independent directors can be affected by the controlling shareholders. That is, although the existence of independent directors on the board is a sign of good governance practice, but it likely reveals that the shareholders select directors who perform for their interests. Consequently, independent directors turn out to be ineffective since their overseeing responsibility is jeopardized by the intervention of the management (Abdul Rahman & Ali, 2006). Therefore, concentrated family ownership might perform like alternate for the overseeing function of independent directors during public disclosure (Eng & Mak, 2003).

Haniffa and Cooke (2005) and Abdul Rahman and Ali (2006) claimed that the independent directors of Malaysian companies lack proficiency, abilities and

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knowledge to comprehend the details of financial reporting. This could clarify why independent directors are not effective in influencing accuracy of management earnings forecasts. The results of this study warrant further examination, particularly on the structure of the board of directors, given that only 37.57% of independent directors work on the board and the remainder is represented by inside management.

## **CEO Duality**

In contrast to the argument of separation between the position of CEO and chairman, DUALITY in this study is found to be negatively associated with earnings forecast errors (AFER and SQFER) as reported in Tables 6.19 and 6.20, respectively. However, the coefficient is insignificant (t= -0.49, p-value=0.627 in AFER; t= -0.17, p-value=0.864 in SQFER). This proposes that IPO companies that separate the position of CEO and chairman are less expected to issue accurate earnings forecasts. Thus, this result suggests that the separation of responsibilities as predicted by the agency theory is not supported in this study. This result is similar to the finding of Bédard *et al.* (2008) who examined the accuracy of Canadian IPO sample. In addition, it is consistent with Abdul Rahman and Ali (2006) who reported that separation between the position of CEO and chairman does not lead to reducing earnings management.

The reason behind the positive association between CEO duality and earnings forecasts accuracy could be attributable to the nature of ownership structure in Malaysia. As highlighted earlier, most companies in Malaysia have greatly concentrated family ownership, and controlled by family directors. Thus, the separation of responsibilities between the CEO and the chairman of the board does not promise board independence for the reason that the board is still affected by the inside controlling shareholders who are sitting on the board as well. Further, it would not necessarily produce the independence of the board since the chairman, lacking commitment, is not expected to use independence properly.

Another explanation is that there is low percentage of IPO companies that have duality function of CEO-chairman in this study sample compared to the extent that their roles in promoting earnings forecasts errors is diminishing. Although duality is not a healthy practice and based on the results found in this study, the concern that CEO possibly will lead the board as argued by Jensen (1993) is not prominent in Malaysian IPO companies. It can be concluded that in terms of earnings forecasts accuracy, the compliance to the best practices recommended by MCCG, by separating the roles of chairman and CEO, has revealed its positive effect.

## **Family Ownership**

Consistent with expectations, the results reported in Table 6.19 indicate that there is a significant positive association between family ownership (FOWN) and absolute forecast error (AFER) in model one (t= 1.67, *p*-value=0.097). The results propose that IPO companies with higher proportion of family ownership have less accurate earnings forecasts. On the other hand, the results documented in Table 6.20 for model two indicate that FOWN is negatively related to SQFER, indicating that family ownership leads to more accurate earnings forecasts. However, the relationship between FOWN and SQFER is insignificant (t= -0.94, *p*-value=0.350). The finding

confirms the view of managerial entrenchment hypothesis that proposes that great family ownership results in great possibility of opportunistic behavior of families in performing their objectives at the expense of minority shareholders and financial reporting quality. The findings of the study are in line with Adıgüzel (2013) who showed that family ownership leads to decreasing the effectiveness of independent boards monitoring concerning earnings management. Further, it supports the results of Yen, Chun, Abidin, and Noordin (2007) who reported that family directors are inclined to manage earnings downwards.

A plausible clarification for the prior finding was revealed by Jaggi *et al.* (2009). They indicated that in developing nations, where the power of family ownership is prevalent, the protection of minority shareholders is not good enough. Further, they showed that financial reporting is also less accurate that leads to the conducting of earnings management as a method to increase the private benefit of the majority shareholders. Another explanation is that controlling family directors will have direct access to the company's financial and non-financial information and, thus, do not have much desire for disclosure (Chau & Gray, 2010). Hence, this result does not support the perception that the existence of family directors decreases agency costs, probably because they have higher expertise regarding the company's operations to efficiently oversee the company's activities.

#### **Management Ownership**

In Table 6.19, results indicate that management ownership (MOWN) is found to have a negative and significant association with AFER in model one (t= -2.07, *p*- value=0.040). Further, findings reported in Table 6.20 show that MOWN has a negative and insignificant association with SQFER in model two (t= -1.20, *p*-value=0.232). That is, the higher the management ownership, the less are the earnings forecast error. The results support the agency theory, which indicates that managerial ownership is considered as an efficient mechanism to decrease the agency conflict between management and shareholders. However, Korczak and Korczak (2009) indicated that it would be unfavorable to the companies when managerial ownership more than a specific point.

The results are consistent with Mnif (2010) who found that when the percentage of shares retained by mangers of IPOs is high, it is expected that these companies will publish more accurate and more conservative earnings forecast. Further, Keasey and McGuinness (2008) reported interaction between the indications concerning the disclosure of earnings forecasts and retained equity in the Hong Kong IPO market. The findings also support Saleh *et al.* (2005) and Ali, Salleh, and Hassan (2008) who found that management ownership is negatively associated with earnings management. In addition, this result is similar to Habbash (2013) who found negative but insignificant relationship between management ownership and earnings management. However, the results are inconsistent with the study of Karamanou and Vafeas (2005) who found that higher insider ownership is associated with a lower likelihood of a management forecast and lower forecast accuracy.

The reason for this result is that the management is worried about living up to the forecasts made during IPO. This is due to that failure to achieve the forecasted earnings may give rise to negative reaction toward the price of company's stocks

(Jelic, Saadouni, & Briston, 2001). Therefore, management may not turn to manage the earnings to meet the forecasted earnings in IPO prospectus. Further, as managers turn out to be owners, their interests are in line with the interests of shareholders; therefore the demand for monitoring role on the quality of earnings forecasts disclosure is increased.

## **Underwriters' Reputation**

As one of the signaling variables, results reported in Tables 6.19 and 6.20 show that underwriters' reputation (UNDERW) has the expected negative sign and the coefficient is statistically significant in AFER model as well as SQFER model (t= -2.45, *p*-value=0.015; t= -1.94, *p*-value=0.054). That is, more underwriter reputation leads to more accurate earnings forecasts. This result provides strong support to the signaling theory. The selection of a reputable underwriter might be shown as a signaling mechanism where underwriters with high reputation are selected by IPO companies that have more favorable information. This finding is in line with the result reported by Chen *et al.* (2001), Gounopoulos (2003) and Jog and McConomy (2003) illustrating that prestigious underwriters are more accurate than their disreputable counterparts.

The justification for the results is that the earnings forecast issued by IPO companies with a reputable underwriter should be related to high accuracy since it is expected that the forecasts are based on information offered by underwriters. Further, this result may be attributable to underwriters' attempt to preserve their reputation by being linked with more accurate earnings forecasts (Chen & Firth, 1999) since large errors of earnings forecast are detrimental for the underwriter's reputation (Chen *et al.*, 2001). Therefore, there is obvious motivation to strongly monitor the management earnings forecast.

## **Auditors' Quality**

Inconsistent with expectations and with Mohamad *et al.* (1994) and Jelic *et al.* (1998), findings in Table 6.19 show that auditors' quality (AUD) has a positive relationship with AFER (t= 0.44, *p*-value=0.660); however, this relationship is insignificant. On the other hand, and in line with the predictions, results in Table 6.20 indicate that AUD has a significant negative association (t= -1.97, *p*-value=0.051) with SQFER.

The expected result in model two (SQFER) proposes that more reputable and quality auditors appear to be related to better accuracy of earnings forecasts in Malaysia. This result is consistent with prior Malaysian studies (e.g., Ahmad-Zaluki & Wan-Hussin, 2010). In addition, this result supports the findings of Karim *et al.* (2013) on Bangladeshi IPOs. This result is also in line with Lee, Taylor, and Taylor (2006) who documented that audit firms with higher quality are related to greater accurate and fewer optimistic forecasts.

To interpret the result found in model two (SQFER), high prestige auditors invest greatly in making and improving their reputational capital and they are cautious to keep away from events that can jeopardize their good prestige. Accordingly, these audit firms are very careful when certifying financial information, like earnings forecasts. Thus, they help the IPO company by providing good auditing. This monitoring and auditing will result in more accurate earnings forecasts. The choosing of a 'high-quality' auditor is claimed to reduce agency costs and decrease the risk of a company; which in turn result in improving the market value of the IPO company. Further, the quality audit firms is related to more accurate financial information since they have greater skills that can lead to higher quality financial information being provided.

#### **Company Size**

Surprisingly, company size (CSIZE) has a positive relationship with AFER (t= 0.30, p-value=0.762) and positive significant association with SQFER (t= 1.73, p-value=0.086). This suggests that larger IPO companies issue less accurate earnings forecasts in Malaysia. This result is consistent with Ahmad-Zaluki and Wan-Hussian (2010) in Malaysia and Firth and Smith (1992) in New Zealand.

The reason for this result can be based on the argument of Firth and Smith (1992). They indicated that since large IPO companies commonly raise funds, their management has more difficulty in controlling the utilizing of the funds, and have greater difficulty in forecasting the company's future earnings that result from their employment. Perhaps the ability of large companies to improve the accuracy of forecast is regarded as restricted since the company's bureaucracy and the company's huge size may decrease its effectiveness and forecasting efficiency (Jaggi, 1997). Therefore, large size IPO companies may possibly not have the ability to provide more accurate forecasts than small size IPO companies. Further, Chan *et al.* (1996)

claimed that since the market is more tolerant of errors issued by larger companies, the directors of smaller companies may be encouraged to issue more accurate earnings forecasts.

## **Company Age**

The findings concerning CAGE in this study are as expected and show that there is a negative association between IPO company age and both AFER (t= -1.14, *p*-value=0.255) and SQFER (t= -0.77, *p*-value=0.442). However, the results are insignificant. The result, to some extent, means that earnings forecasts accuracy improves the longer the company has been in existence. Since the historical data are significant inputs into the process of forecasting, it is argued that the expectations for earnings for younger IPO companies are very complicated relative to companies with a solid history of earnings.

#### **Forecast Horizon**

The results found in this study about the relationship of forecasts horizon (FHORIZON) and accuracy of earnings forecasts are as suggested and indicate that there is a positive relationship between IPO company forecasts horizon with both AFER (t= 1.05, *p*-value=0.297) and SQFER (t= 1.61, *p*-value=0.110). However, the association is insignificant. The earnings forecast is a naturally uncertain practice. It is argued by Chen and Firth (1999) that the longer the period of earnings forecasts, the greater the uncertainty. That is, when the period of forecasts is long, the accuracy of IPO earnings forecasts will be less. Similarly, insignificant association between forecast horizon and IPO management earnings forecast has also been reported in

previous studies in Malaysia (e.g., Mohamad *et al.*, 1994; Jelic *et al.*, 1998); Jordan (El-Rajabi & Gunasekaran, 2006); and in Hong Kong (e.g., Jaggi, 1997; Cheng & Firth, 2000).

## Leverage

The ratio of leverage (LEV) represents the structure of debt of the company and therefore has been commonly utilized in prior studies to control for the effect of debt structure on earnings forecasts accuracy. In both models, the results of this study are as expected that LEV have a positive relationship with both AFER (t= 0.59, *p*-value=0.558) and SQFER (t= 0.94, *p*-value=0.350). However, the relationship is insignificant. This specifically means that the greater the debt a company has, the greater the risk of its earnings. Thus, the earnings forecasts will be less accurate. The results are in line with previous studies that found insignificant evidence on the relationship between leverage and accuracy of IPO earnings forecast in Malaysia (Jelic *et al.*, 1998); in Hong Kong (Jaggi, 1997; Cheng & Firth, 2000); in New Zealand (Firth & Smith, 1992); in Thailand (Lonkani & Firth, 2005); and in Bangladesh (Karim *et al.*, 2013).

This result is explained by the argument of Firth and Smith (1992) that a greater level of leverage could make the forecasting of the earnings of IPO company more complicated because the more leverage lead to higher fluctuation in the earnings. Further, Chan *et al.* (1996) showed that interest expense is exposed to any varying market circumstances and includes an element of risk.

#### **6.8 Content Analysis**

As highlighted in Chapter 1, objective number four of this study is to explore the explanations that have been disclosed by the management in the first published annual reports when the earnings forecasts errors are outside the tolerance level of  $\pm 10\%$ . To achieve this objective of this study, analysis is done manually employing content analysis.

This section is motivated by large errors reported in Table 6.5 in addition to that found in previous Malaysian studies (e.g., Ahmad-Zaluki & Wan-Hussin, 2010). Therefore, the following subsections are dedicated to investigate the extent to which earnings forecast errors of Malaysian IPOs are explained in the subsequent annual report after IPO prospectus and to address the reliability of the way differences between actual earnings and forecasted earnings findings are explained to investors.

#### **6.8.1 Analysis of Provided General Comments**

In order to obtain these explanations, the first published annual reports by IPO companies were explored. The directors' comments and explanations on the errors of management earnings forecasts are commonly stated in the Chairman's statement and under the additional notes on financial statements. In Panel A of Table 6.21, it is obvious that 163 IPO companies (85.79%) out of the total sample of this study (190 IPOs) generally provided an explicit reference concerning earnings forecasts in their annual reports regardless of whether or not they were included to explain errors. The provided comments are specifically related to the performance of actual earnings compared to earnings forecasts.

Panel A: Number of Provided Comments				
Comments	Number of IPO		%	
Yes	163		85.79	
No	27		14.21	
Total	190		100	
Panel B: Directors' Comments on Actual Earnings Compared to Forecasted Earnings				
Comments	Number of IPO		%	
AE higher than FE (difference $>$ or $= +10$ )	37		22.70	
AE less than FE (difference $< \text{ or } = -10$ )	42		25.77	
AE in line with FE (-10 <difference<+10)< td=""><td colspan="2">84</td><td>51.53</td></difference<+10)<>	84		51.53	
Total	163		100	
Panel C: Explanations of Forecast Errors				
Explanations	Number of IPO			
	Yes	No	Total	
when AE is higher than FE	44	61	105	
when AE is below FE	40	45	85	
Total	84 106 190		190	
Note: AE is the actual earnings provided in the first issued annual report. FE is the forecasted earnings disclosed in the IPO prospectus.				

Table 6.21Provided Comments on Earnings Forecast Errors in Annual Reports

Panel B of Table 6.21 classifies the comments on forecasts compared to actual earnings into three groups. The first group represents the comments on forecasts errors when the difference between actual reported earnings and forecasted earnings in IPO prospectus is higher than the tolerance level of +10 stated by the SC. This group includes 22.70% (37 IPO companies). The second group represents the comments on forecast errors when the difference between actual reported earnings and forecasted earnings in IPO prospectus is lower than the tolerance level of -10%. This group comprises 25.77% (42 IPOs) out of 163 IPOs that provided comments.

It can be noted that the number of provided comments is higher when the management of IPO companies are more optimistic (when the difference between actual earnings and the forecasts is negative). It is of great significance to tell the

investors why this negative deviation has happened; not just to fulfill the requirements of the SC but also to maintain investments in the company and to increase the confidence in capital market in general. Interestingly, most comments are provided when the forecast errors are in line with the tolerance level of  $\pm 10$ . This group includes 84 IPOs out of total 163 IPO companies that provided comments in their first issued annual reports. This may be attributed to the IPO directors' interest in informing the related parties that their forecasts are, to some extent, accurate. These explanations potentially aid investors in understanding the situation of IPO companies.

#### **6.8.2** Analysis of Provided Explanations

Out of 190 IPOs sample utilized in this study, the search through annual reports following IPOs yielded only 84 IPOs that explained the reasons behind the deviations reported on forecasts errors. Panel C of Table 6.21 considers the explanations provided by management for the forecasts errors. The results in Table 6.21 show that under-forecasting IPOs (pessimistic forecasts) comprise 52.38% of all provided explanations (44 out of 84) and represent 55.26% of the entire sample (105 out of 190). On the other hand, the over-forecasting IPOs (optimistic forecasts) represent 47.62% (40 out of 84) of all explainer IPOs. It can be noted that directors of Malaysian IPOs provided more explanations for forecasts errors when actual earnings did not exceed forecasted earnings since the percentage of provided explanations for optimistic forecasts is 47.06% (40 out of 85 IPOs), which is higher than 40.90% (44 out of 105 IPOs) for pessimistic forecasts.

This result is consistent with Lee *et al.* (1993) and Sweeting (2001) who revealed that IPO companies are typically inclined to issue explanations for their forecast errors when the error is both large and optimistic. However, the explanations that were provided when the actual earnings exceeded the forecasts earnings are few and general compared with a higher number of general and specific explanations, which were provided when actual earnings were lower than forecasts earnings.

To confirm the above results, Table 6.22 provides the relationship between the bias (as represented by FER) and accuracy (as represented by AFER and SQFER) of earnings forecasts and the explanations provided for them. When comparing the results under explanations with no explanations, the findings in Table 6.22 indicate that the explanations, on average, were provided when the forecast errors were large, less accurate and optimistic. The exception is only in case of SQFER, which can be attributed to the absence of explanations of Baswell Resources Berhad with high mean SQFER.

Table 6.22

Measurement	Explainers	Non-explainers	Total	
	n=84	n=106	n=190	
	Mean (%)	Mean (%)	Mean (%)	
FER	-5.06	10.03	3.36	
AFER	27.19	23.14	24.94	
SQFER	12.16	43.53	29.66	

Note: Forecast Error (FER) =  $(AE_{it} - FE_{it}) / |FE_{it}|$ . Absolute Forecast Error (AFER) =  $|(AE_{it} - FE_{it})| / |FE_{it}|$ . Squared Forecast Error (SQFER) =  $(AE_{it} - FE_{it})^2$ . AE is the actual earnings in annual report by the IPO company; and EF, is the disclosed forecasted earnings in the IPO prospectus.

## **6.8.3 Explanations- Actual Earnings Higher than Forecasts Earnings**

The results in Table 6.23 present the explanations provided by directors when the forecasts errors are positive (actual earnings higher than forecasts earnings). These explanations are classified into seven groups by gathering the similar explanations in one specific group. Table 6.23 presents a summary of the seven explanatory groups in addition to the number of IPO companies that offered each kind of explanation.

Table 6.23

Classifications of Explanations Offered when Actual Earnings are higher than Forecasts Earnings

	Type of Explanations	No. of IPO Companies
1	Increased demand/sales	26
2	Increased price	6
3	Lower cost/expense	8
4	Improved economic activities	1
5	Write-up of intangible assets (i.e., goodwill, trademarks, research and development)	2
6	Gain on exchange rate	2
7	Others (i.e., tax saving, disposal of some assets, and lower bad debt charges)	9

As highlighted earlier, the provided reasons on these occasions tend to be limited and general. The groups of increased demand/sales, increased price and lower cost/expense are the three popular explanations for forecast errors. The explanation provided the most (26 times) is concerning the increased demand and sales, which leads to increased revenue.

#### **6.8.4 Explanations- Actual Earnings Lower than Forecasts Earnings**

When the actual earnings is less than forecasts earnings, management provides a variety of explanations. Similar explanations are classified into 13 groups. Some of these categories and items are drawn from prior studies in the area (e.g., Lee *et al.*,1993: Sweeting, 2001). Table 6.24 lists these 13 classified groups. While there were only forty IPOs that have explained the forecasts errors when actual earnings were less than forecasted earnings (as noted previously in Panel C of Table 6.21), a total of 93 explanations were reported in annual reports. This is because many IPO companies released multiple explanations for the reported forecasts errors.

The most common provided explanations are the 'increase in the cost of raw material and materials shortage'. Under this category, directors mentioned that their companies faced a sharp increase in the cost of main raw materials for the manufacturing operations, especially the petroleum-based raw materials. The increase of oil prices had positively increased the overall operating costs. Further, some IPO companies during the period of the study, experienced materials shortage especially in the construction industry. The next top popular explanation group is 'unanticipated costs'. This explanation is to a certain degree unclear, since it could mean the costs were greater than anticipated or the IPO management failed to budget for these costs. In both occasions, part of responsibility is likely to be placed upon the IPO management. Perhaps, the management did not carefully consider all matters during making the earnings forecasts as well as did not react well to unexpected events during the forecasting period to live up to the forecasted figures in IPO prospectuses.

Table 6.24

	Type of Explanations	No. of IPO Companies
1	Unanticipated costs (other than those determined	12
	separately)	
2	Delays in commencing operations/installation of new	11
	equipment/ acquisition of operating subsidiaries	
3	Economic events/ interest rates	11
4	Predatory pricing/competition	5
5	Lack of sales and demand	13
6	Unfavorable weather conditions/floods	1
7	Increase in the cost of raw material/ materials	21
	shortage	
8	Personnel shortage/resignation/ staff cost	2
9	Government actions /financial and accounting policies	1
10	Failures in entities acquired to meet budget profit	2
	levels / low profitability	
11	IPO financing problems/lack of working capital	2
12	Exchange rate	2
13	others	10

Classifications of Explanations Offered when Actual Earnings less than Forecasts Earnings

Another common explanation is 'lack of sales and demand'. Many directors attributed the shortfall of earnings to the lower sales. While directors in these occasions were trying to relate this shortfall of sales to the reasons beyond their control, they had to carry some responsibility for that. Examples for their explanations are:

> "Lower sales are a result of weak market conditions, especially the Avian Flu scare has resulted in lower demand for chicken meat as consumers switched their consumption of chicken meat to other meat (D.B.E Gurney Resources Berhad, Annual Report 2004, p.22").

> "A decrease of approximately 10% in export sales to several customers in the Middle East countries was due to the region's political instability (Tafi Industries Berhad, Annual Report 2005, p.13)".

Further, results in Table 6.24 present other explanations that directors refer to in case of negative forecasts errors. Explanations (such as delays in commencing operations/installation of new equipment/ acquisition of operating subsidiaries and economic events/ interest rates) have been reported many times by IPO management. The less indicated explanation was under the group nine (1 IPO) (government actions /financial and accounting policies) by CYL Corporation Berhad. Specifically, CYL Corporation Berhad explained part of the shortfall as "RM 819,038 is due to the change in accounting policy for deferred tax (Annual Report 2004, p.13)".

Overall, it can be noted from the presented explanations in Table 6.24 that the management of IPO companies has tried to attribute most of explanations behind the forecasts errors to reasons outside their control; for example, delays in commencing operations, economic events, exchange rate and government actions.

It is remarkable that the group of 'unfavorable weather conditions/floods' is most clearly not associated with the management performance, ability and skills. Example for this group is:

"Thai AirAsia was not able to meet its profit forecast due to domestic competition and several unforeseen circumstances. The air travel sentiments were dampened by the unexpected Tsunami disaster, multiple earthquakes off Sumatra and unrest in southern Thailand that occurred in the 2nd and 3rd quarter of the financial year ended 30 June 2005 (AirAsia Berhard, Annual Report 2005, p. 48)".

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Finally, the group 'others' in Table 6.24 represents several different explanations which cannot be classified with other similar explanations into other groups. Examples of this group are:

"Non-achievement of the profit forecast was primarily due to additional provision of doubtful debts of RM1.2 million which was in relation to a trading debt that occurred in 2005 (Tafi Industries Berhad, Annual Report 2005, p.13)".

## **6.9 Summary and Conclusion**

The earlier section of this chapter illustrates the descriptive statistics of the sample utilized in this study. It shows that the final sample used is 190 Malaysian IPOs. Further, while 181 IPOs went public and considered in the sample during the mandatory earnings forecasts disclosure, only nine IPOs are considered during the voluntary earnings forecasts disclosure. The descriptive statistics for the data indicates that the Malaysian IPO earnings forecasts are pessimistic (under-forecasting) during the period of the current study. Furthermore, the means of absolute and squared forecast errors for IPO earnings forecasts of Malaysian companies reveal moderate improvement in the accuracy over time. For the corporate governance mechanisms related to audit committees and board of directors, the descriptive analysis presented that Malaysian IPO companies had successfully followed the best practices of corporate governance recommended in the MCCG.

Univariate analysis of mandatory and voluntary earnings forecasts disclosure indicate that earnings forecasts of IPO prospectus are more accurate and less pessimistic under the mandatory disclosure regime of earnings forecasts. These findings are inconsistent with the hypotheses H1a and H1b. For the multivariate analysis, findings in this study show that audit committee size (ACSIZE) and audit committee experience (ACEXP) have a strong positive impact on the accuracy of earnings forecasts. Further, ACFEX has the predicted sign in its relationship with the accuracy of earnings forecasts as proxied by SQFER. For the audit committee stock ownership (ACSOW), it is found to have significant negative impact on the accuracy of earnings forecasts as proxied by both AFER and SQFER. In terms of audit committee ethnic diversity (ACETH), it is found to have significant impact on the accuracy of earnings forecasts in the case of AFER model but with wrong directions.

Likewise, audit committee independence (ACIND) and audit committee gender diversity (ACGED) have significant impact on earnings forecasts accuracy in the case of SQFER model but with wrong sign of associations. These findings propose that the influence of audit committee characteristics on earnings forecasts accuracy of IPO prospectus depends on whether accuracy is measured using an absolute forecast error or squared forecast error approach.

In terms of control variables related to boards of directors, results show that family ownership and management ownership have a strong influence on the accuracy of earnings forecasts in case of employing AFER relative to the SQFER. None of the other boards attributes has a significant impact on AFER or SQFER. For the underwriters' reputation, it is found to have a strong significant and positive effect on the accuracy as proxied by both AFER and SQFER. Further, auditors' quality (AUD) and company size (CSIZE) have significant influence on the accuracy of forecasts measured by SQFER but CSIZE has the wrong direction.

The analyzed association between the type of explanations and the size and direction of forecasts errors show that there is evidence of explanations being provided commonly for optimistic and large errors. Finally the explanations provided when the forecasts errors are negative (actual earnings less than forecast earnings), usually show that the reasons behind the deviations of forecasts are because of situations and events outside the control of IPO management. Therefore, the responsibility cannot be placed on management, which is consistent with Lee *et al.* (1993).

Overall, although not all audit committee variables provide support to the stated hypotheses; this current study has accomplished its aim by recognizing the characteristics that answer the research question. The following chapter presents a sensitivity analysis and additional empirical tests of this study.

## **CHAPTER SEVEN**

## SENSITIVITY ANALYSIS AND ADDITIONAL EMPIRICAL TESTS

#### 7.1 Introduction

This chapter undertakes a number of further sensitivity and robustness tests that were run for both models (AFER and SQFER). The purpose is to provide supplementary findings to initial regression analysis presented in the prior chapter. This chapter is organized as follows. Section 7.2 shows the analysis of using audit committee as score. In Section 7.3, additional analysis was conducted to examine the sensitivity analysis on the dependent variables (AFER and SQFER). In Section 7.4, the study reran the regression using the transformation of audit committee size. In Sections 7.5, 7.6, 7.7 and 7.8, the study carried out further investigation on the impact of different measurements of audit committee characteristics (i.e., independence, financial expertise, gender diversity and ethnicity, respectively) on the accuracy of earnings forecasts. Finally, Section 7.9 presents summary and conclusion for this chapter.

#### 7.2 The Aggregated Audit Committee Score

The previous studies on the disclosure of management earnings forecasts (e.g., Karamanou & Vafeas, 2005; Ajinkya *et al.*, 2005) and the accuracy of IPO earnings forecasts (Bédard *et al.*, 2008; Mnif, 2010; Ahmad-Zaluki & Wan-Hussin, 2010) have empirically associated the disclosure and accuracy of earnings forecasts with the characteristics of board of directors and audit committee in an individual examination. These studies have reported, somewhat, conflicting and inconclusive findings. Perhaps, this is because of that these studies considered the mechanisms of governance in isolation from each other, thus overlooking the notion that the

effectiveness of a single mechanism relies on the other mechanisms. Cai, Liu, and Qian (2009) indicated that the optimal combination of mechanisms may result in improved decreasing of the agency cost since a particular mechanism's effectiveness depends on the effectiveness of others.

Employing an aggregated index of the audit committee is particularly justified in the case of Malaysia. Saleh *et al.* (2007) indicated that audit committee directors who have financial expertise and attend meetings will improve the effectiveness of the audit committee in increasing the quality of financial reporting. In the same vein, Mustafa and Youssef (2010) disputed that audit committee independence is not effective unless the directors are considered financial experts. DeZoort *et al.* (2002) claimed that the effectiveness of the framework of audit committee could be increased significantly if the characteristics of audit committee are examined together. There are some of the studies that have examined the influence of corporate governance, specifically the audit committee mechanism, in score format instead of as individual variables (e.g., Defond, Hann, & Hu, 2005; Dhaliwal *et al.*, 2006; Carcello, Klein, & Neal, 2008).

By utilizing this aggregate index, this study can consider the following: (1) the presence of interactions between the different characteristics of audit committee itself as well as other corporate governance mechanisms; and (2) the perspective that the performance of each of these governance mechanisms could influence the effectiveness of the rest (Lara, Osma, & Penalva, 2007).

From the findings of the initial analysis in Chapter 6, it seems that the effectiveness of independent and financial expertise audit committee members to improve the

accuracy of earnings forecasts is unclear. Perhaps the independence of committee members depends on their expertise, educational background, stock ownership, ethnicity, gender and experience. Therefore, examining the characteristics of the audit committee as score may account for the interactions between the characteristics and show whether the audit committee variables function better collectively or separately.

Based on the above arguments and for the purpose of this study to check the robustness of initial results, this study extends the prior studies on IPO earnings forecasts by constructing an aggregated audit committee score (AC\_SCORE) as a summary measure of the strength of the IPO audit committee characteristics (i.e., size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background and experience). By giving a score to an audit committee according to its characteristics, this study suggests a positive relationship between the score of audit committees effectiveness and accuracy of IPO management earnings forecasts (i.e., negative relationship with AFER and SQFER).

Furthermore, this study includes the board attributes as control variables. However, the audit committee characteristics and boards attributes are examined separately as if these two mechanisms are independent. By doing so, it is difficult to determine whether it is the characteristics of the audit committee or those of the board that are more significant to the investigated issue (Dionne & Triki, 2005). Thus, the study also constructs an aggregated board score (BO\_SCORE) as a summary measure of the strength of the IPO boards attributes (i.e., size, independence, duality, family ownership and management ownership).

## **Measurement of Audit Committee Effectiveness**

Currently, there is no consensus on a specific measure for audit committee effectiveness. Based on the prior work (Defond et al., 2005; Dhaliwal et al., 2006; Carcello et al., 2008), the study constructs dichotomous measures of the eight audit committee characteristics for each sample IPO company with a value of "1" demonstrating strong or effective IPO audit committee and a value of "O" demonstrating weak or ineffective IPO audit committee. That is, each sample company was coded "1" if the value of the corresponding audit committee characteristic was above the sample median and "0" otherwise. The process employed to dichotomize the eight characteristics of IPO audit committee is shown in Appendix A. Then, the eight dichotomous audit committee variables were summed up toward finding the summary audit committee score (AC\_SCORE) measure. Particularly, audit committee effectiveness would range from 0 to 8. The greater the value, the more effective is the audit committee. Finally, the measure of audit committee effectiveness (AC SCORE) is created, which is coded "1" if the summation of the new dichotomous measures for the eight characteristics of IPO audit committee of that company is greater than or equal to the median of the sample, and "0" if otherwise.

Likewise audit committee score and following Defond *et al.* (2005), Dhaliwal *et al.* (2006) and Carcello *et al.* (2008) to develop the BO\_SCORE measure, five dichotomous measures were created for the five attributes of board for every IPO company in the sample, where values of "1" indicate strong board governance and values of "0" indicate weak board governance. That is, each sample company was coded "1" if the value of the corresponding board attribute was above the sample

median and "0" otherwise. The utilized process to dichotomize the five attributes of board is illustrated in Appendix B. Then, the five dichotomous of board attributes variables were added together to get the BO\_SCORE. Thus, the board effectiveness would range from 0 to 5. The larger the value, the better the governance of the IPO board. Lastly, the measure of board governance effectiveness (BO\_SCORE) was created, which is coded "1" if the summation of the new dichotomous measures for the five attributes of IPO board of that company is greater than or equal to the median of the sample, and "0" if otherwise.

## **Results on Aggregated Audit Committee Score**

Table 7.1 reports the results of the relationship between AC\_SCORE and BO\_SCORE and IPO earnings forecasts accuracy. Surprisingly, AC\_SCORE has positive and significant relationship with AFER (t=1.78, *p*-value= 0.077) and SQFER (t=2.28, *p*-value= 0.024). These results suggest that audit committee is not effective in monitoring the IPO earnings forecasts accuracy. This finding does not confirm the previous conclusion that the audit committee will perform in the benefit of shareholders when it has the competence to do so. These findings indicate that audit committees are not better when they reveal all effective characteristics simultaneously and that the aggregated score is not a more powerful measure of effectiveness than any of the individual variables. This result is consistent with Sultana and Van der Zahn (2011), who failed to find evidence that more effective audit committees are more expected to encourage persistence of earnings conservatism. It is claimed by some scholars (e.g., Klein, 2002; Chen & Zhou, 2007) that an audit committee directors' effectiveness can be compromised unless independent of company management.

Variables	Model One (AFER)		Model Two (SQFER)	
	Coef.	t-stat	Coef.	t-stat
AC_SCORE	6.144	1.78*	2.939	2.28**
<b>BO_SCORE</b>	4.359	1.39	1.451	1.25
UNDERW	-0.244	-3.04***	-0.068	-2.31**
AUD	-1.156	-0.37	-2.720	-2.29**
CSIZE	2.309	1.31	1.544	2.39***
CAGE	-2.305	-1.30	-0.581	-0.88
FHORIZON	0.560	1.09	0.284	1.46
LEV	6.512	0.99	2.997	1.24
Constant	-14.894	-0.72	-16.814	-2.21**
n		184		174
$R^{2}(\%)$		9.53		12.93
Adjusted $R^2$ (%)		5.39		8.71
F-value		2.30**		3.06***

Table 7.1Multiple Regression Results of AFER and SQFER- using Audit Committee and Boardas Score

Likewise the score of audit committee, BO\_SCORE has positive relationship with both AFER and SQFER; however, the relationship is insignificant (t= 1.39, p-value= 0.166; t= 1.25, p-value= 0.214). This suggests that the board is ineffective in enhancing the accuracy of IPO earnings forecasts. These results are not in line with the evidence of Lara *et al.* (2007) that companies with strong boards score employ conservative accounting numbers as a tool of governance. One essential conclusion that could be drawn from the results of Table 7.1 is that regulators should enhance the role of audit committee and board when regulating corporate governance in new established companies in order to enable these two mechanisms to monitor the earnings forecasts accuracy.

The other results reported in Table 7.1 for the control variables confirm our previous conclusion results for both models (AFER and SQFER) except for the AUD, which
turned to have a positive effect on the accuracy of earnings forecasts in the case of AFER model.

Furthermore, this study constructed an aggregated index for the governance strength score (GOV\_SCORE) that includes the characteristics of both the audit committee and board of directors. By doing so, it is likely that this measure can better capture the strength of a company's overall governance setting than separate measures (DeFond *et al.*, 2005). Thus, it is hypothesized that GOV\_SCORE is positively associated with earnings forecasts accuracy (i.e., negatively with AFER and SQFER).

Table 7.2Multiple Regression Results of AFER and SQFER- using Strength of OverallGovernance (GOV SCORE)

Variables	Model Or	ne (AFER)	Model Two (SQFER)		
	Coef.	t-stat	Coef.	t-stat	
GOV_SCORE	2.863	0.93	1.589	1.38	
UNDERW	-0.246	-3.04***	-0.069	-2.31**	
AUD	-0.146	-0.05	-2.271	-1.92**	
CSIZE	2.107	1.24	1.567	2.51***	
CAGE	-2.334	-1.31	-0.625	-0.94	
FHORIZON	0.626	1.21	0.317	1.61	
LEV	6.093	0.92	2.754	1.13	
Constant	-7.971	-0.40	-15.352	-2.07**	
n		184		174	
$R^{2}(\%)$		7.37		10.48	
Adjusted R <sup>2</sup> (%)		3.69		6.70	
F-value		2.00**		2.78***	

The results in Table 7.2 indicate that the GOV\_SCORE has a positive relationship with both AFER and SQFER (t= 0.93, *p*-value= 0.353; t= 1.38, *p*-value= 0.168). These results are not in line with DeFond *et al.* (2005) and Carcello *et al.* (2008) who

concluded that strong corporate governance index (composite governance scores of board and audit committee) contributes positively to the quality of financial reporting.

## 7.3 Further Analysis on the Dependent Variable

In this section, the effect of modifications on the dependent variables (AFER and SQFER) are tested in the regression analysis. Specifically, the study tests whether the findings of regression analysis are sensitive to utilizing substitute measures of earnings forecasts accuracy. It has been pointed out by Patz (1989) that the proportion of forecast errors may be distorted by small earnings numbers in the denominator of forecasts accuracy metrics. Therefore, to overcome this issue, this study followed the method proposed by Firth and Smith (1992), and scaled down the metrics of forecast errors by the total assets and sales of IPO companies. Specifically, these methods include using: (1) total assets (e.g., Jelic *et al.*, 1998; Hartnett, 2006; Sun & Liu, 2009); and (2) sales (e.g., Sun & Liu, 2009), as a deflator in the calculation of AFER and SQFER.

The results in Table 7.3 show that the significance level of both models are similar to the initial results. For the associations of independent variables with AFER and SQFER, it is clear that results are sensitive to the employing of alternative proxies for earnings forecast accuracy.

Table 7.3			
Multiple Regression Results of AFER	and SQFER- using	Total Assets	and Sales as
Deflators			

Deficions									
Variables	Mod	el One	Mod	Model Two		el One	Model Two		
	(A)	FER)	(SQ	(FER)	(A)	FER)	(SQ	FER)	
	Т	otal Assets	as A defla	ator		Sales as A deflator			
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	
ACSIZE	-1.293	-2.21**	-0.082	-2.16**	-1.679	-1.25	-0.209	-0.80	
ACIND	0.058	2.22**	0.000	0.17	0.025	0.45	-0.001	-0.06	
ACFEX	0.014	1.08	0.000	0.37	0.074	2.58***	0.007	1.25	
ACGED	-0.007	-0.45	-0.001	-1.10	-0.032	-0.99	-0.004	-0.57	
ACETH	0.014	1.87*	0.001	1.88*	0.044	2.67***	0.010	3.12***	
ACSOW	0.046	2.00**	0.000	0.19	0.054	1.04	-0.014	-1.35	
ACEDU	-0.007	-0.96	-0.001	-1.85*	-0.017	-0.98	-0.005	-1.42	
ACEXP	-0.112	-1.62	-0.004	-0.82	-0.345	-2.22**	-0.046	-1.50	
BSIZE	0.128	0.94	0.019	2.06**	0.351	1.12	0.028	0.46	
BIND	-0.039	-1.34	-0.001	-0.30	-0.090	-1.34	-0.017	-1.30	
DUALITY	-0.858	-1.44	-0.075	-1.88*	0.411	0.31	-0.174	-0.66	
FOWN	0.011	0.77	0.002	1.55	0.075	2.27**	0.020	3.09***	
MOWN	-0.027	-1.57	0.000	0.32	-0.075	-1.88*	-0.006	-0.79	
UNDERW	-0.025	-2.17**	-0.001	-1.57	-0.042	-1.59	-0.001	-0.19	
AUD	0.335	0.74	0.009	0.30	0.045	0.04	-0.238	-1.18	
CSIZE	-0.285	-1.12	-0.013	-0.74	0.717	1.22	0.172	1.50	
CAGE	-0.271	-1.06	-0.028	-1.66*	-0.178	-0.31	-0.161	-1.40	
FHORIZON	0.095	1.32	0.012	2.49***	0.061	0.37	0.066	2.04**	
LEV	-0.547	-0.59	-0.013	-0.20	-3.601	-1.72*	-0.328	-0.80	
Constant	6.593	1.74*	0.358	1.39	0.706	0.08	-0.497	-0.29	
n		184		177		187		185	
$R^{2}(\%)$		17.15		18.69		16.32		17.95	
Adjusted R <sup>2</sup>		7.55		8.85		6.80		8.50	
(%)									
F-value		1.79**		1.89***		1.71**		1.90***	

Note: This table shows the results of multiple regressions of AFER and SQFER as the dependent variables when using both total assets and sales as deflators in calculating of AFER and SQFER. This study employed multivariate analysis using studentized residuals. Thus, when using total assets as a deflator, six cases in AFER model and 13 cases in SQFER model were considered as outliers and therefore removed from the sample. In the case of using sales as a deflator, three cases in AFER model and five cases in SQFER model were considered as outliers and therefore removed from the sample. In the case of using sales as a deflator, three cases in AFER model and five cases in SQFER model were considered as outliers and therefore removed from the sample. The experimental variables are the audit committee characteristics: size (ACSIZE), independence (ACIND), financial expertise (ACFEX), gender diversity (ACGED), ethnicity (ACETH), stock ownership (ACSOW), educational background (ACEDU), and experience (ACEXP). The control variables are: board size (BSIZE), board independence (BIND), duality (DUALITY), family ownership (FOWN), management ownership (MOWN), underwriters' reputation (UNDERW), auditors' quality (AUD), company size (CSIZE), company age (CAGE), forecast horizon (FHORIZON), and leverage (LEV).\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

As for the AFER, using assets as a deflator, the variable of audit committee independence (ACIND) became significant but had the unexpected sign. That is, the more independent directors on the audit committee, the more inaccurate the earnings forecasts. On the other hand, the audit committee experience (ACEXP) and audit committee financial expertise (ACFEX) turned to be insignificant. For the control variables, the family ownership (FOWN) and management ownership (MOWN) shifted to be insignificant when using assets as the denominator. In terms of SQFER, while audit committee ethnicity (ACETH), age (CAGE), and forecast horizon (FHORIZON) moved to be significant, the committee independence (ACIND), gender (ACGED), underwriters' reputation (UNDERW), auditors' quality (AUD), company size (CSIZE), and ACSOW turned to be insignificant.

Concerning the results of AFER and SQFER using sales as a deflator, it is obvious also in Table 7.3 that the results are also sensitive. For the AFER model, while ACSIZE, ACSOW, and UNDERW became insignificant, leverage (LEV) turned to be significantly related to AFER. Finally, the results of SQFER model using sales as the denominator were more sensitive than all prior regressions. In this regression ACSIZE, ACIND, ACGED, ACSOW, UNDERW, AUD, and CSIZE all turned to be insignificant. However, ACETH and FOWN turned to be significant. Further, FHORIZON became significant with the expected sign.

## 7.4 Transformation of Audit Committee Size

The prior diagnostic results in Table 6.16 of Chapter 6 present that the variable of audit committee size (ACSIZE) in both models (AFER and SQFER) is not normal as the skewness and kurtosis values are higher than  $\pm 3$  and  $\pm 10$ , while the normality assumption for other independent variables is not violated. Though the normality assumption can be relaxed when the size of sample is reasonably large - greater than 100 observations, this study confirms the initial results by conducting the regressions

with transformed ACSIZE. There are numerous alternatives available for transforming the data, for example; ranking, logging and normalizing. For the current study, the data sets of ACSIZE were transformed by normalizing via the Van Der Waerden method (e.g., Haniffa & Cooke, 2002)<sup>16</sup>.

Table 7.4Multiple Regression Results of AFER and SQFER- using Transformed Data ofACSIZE

Variables	Model Or	Model One (AFER)		(SQFER)
	Coef.	t-stat	Coef.	t-stat
ACSIZE-Transformed	-8.127	-2.28**	-2.201	-1.89*
ACIND	0.231	1.08	0.137	1.97**
ACFEX	0.196	1.92**	-0.013	-0.36
ACGED	-0.056	-0.47	0.068	1.76*
ACETH	0.102	1.73*	0.032	1.59
ACSOW	0.309	1.65	0.158	2.48***
ACEDU	-0.072	-1.15	0.013	0.61
ACEXP	-1.296	-2.32**	0.041	0.22
BSIZE	1.051	0.95	0.073	0.20
BIND	-0.231	-0.95	-0.060	-0.76
DUALITY	-2.284	-0.47	-0.254	-0.16
FOWN	0.198	1.69*	-0.036	-0.92
MOWN	-0.292	-2.04**	-0.056	-1.18
UNDERW	-0.231	-2.46***	-0.059	-1.95**
AUD	1.385	0.38	-2.460	-2.03**
CSIZE	0.623	0.30	1.171	1.73*
CAGE	-2.299	-1.11	-0.505	-0.74
FHORIZON	0.607	1.02	0.319	1.59
LEV	3.999	0.53	2.185	0.89
Constant	-2.535	-0.09	-19.189	-2.06**
n		186		174
$R^{2}(\%)$		15.86		19.14
Adjusted $R^{2}$ (%)		6.23		9.17
F-value		1.65**		1.92***

\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

<sup>&</sup>lt;sup>16</sup> The Van Der Waerden method of transformation can be summarized as = r/(n + 1) and it can be calculated by utilizing SPSS statistical software.

The results presented in Table 7.4 show that the transformation using Van Der Waerden method provides similar results for explaining the impact of audit committee size (ACSIZE) and other independent variables on AFER and SQFER. The only difference is that audit committee stock ownership (ACSOW) turned to be insignificant after the transformation of ACSIZE.

## 7.5 Audit Committee Independence as Cut-off Measures

The measurement used for the audit committee independence (ACIND) in the initial analysis in Section 6.6 of Chapter 6 was addressed as a continuous variable. The initial findings proposed that a greater percentage of independent directors on the audit committee resulted in more forecast errors. These results are not in line with the suggestion that independent directors who provide strong governance would employ more monitoring on the management to ensure the accuracy of earnings forecasts.

In order to scrutinize the effect of the independence of the audit committee (ACIND) on the effectiveness of the committee, and then its influence on earnings forecasts accuracy, the level of the independence was measured in another way. In initial analysis, the measure of independence of the audit committee was the percentage of directors who are independent (Abdul Rahman & Ali, 2006; Salleh *et al.*, 2006; Yunos *et al.*, 2012). In this section, the measure is that all audit committee members are fully independent directors. Bradbury *et al.* (2006), Saleh *et al.* (2007), and Amar (2014) employed the 100% threshold by utilizing a dummy variable that equal to "1" if the audit committee contains 100% independent directors and "0" otherwise. Another alternative measure is the majority threshold (independence=> 51%), which

was used by Klein (2002), Bédard *et al.* (2004), and Amar (2014) and is in line with the MCCG. This alternative is measured as a dummy variable coded "1" if the committee comprises 51% to 99% of independent directors and "0" otherwise.

For the 100% threshold measurement, the findings presented in the first part of Table 7.5 maintain the initial results that ACIND has no positive impact on the accuracy of earnings forecasts (i.e., positive association with AFER and SQFER). In particular, IPO companies with 100% independent directors working on their audit committees issued less accurate earnings forecasts.

Concerning the second alternative measure, it is interesting to note that utilizing dummy variable as a majority threshold to measure audit committee independence, to some extent, changes the results of the relationship between audit committee independence and earnings forecasts accuracy. Findings reported in the second part of Table 7.5 indicate that ACIND has the expected relationship with AFRE and SQFER. However, the results are insignificant. These tests findings provide little support for Malaysian corporate governance recommendations (Revised Code, 2007) that audit committees have to be formed entirely of non-executive director with most of them being independent directors.

Variables	Model One (AFER) Model Two (SQF)			vo (SQFER)	Model O	Model One (AFER) Model Ty		
	Ι	Dummy = 1 (All In	ndependent 1009	%)	Dummy = 1 (Majority Independent, 51-99%)			
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
ACSIZE	-10.482	-2.17**	-2.721	-1.73*	-10.481	-2.17**	-2.721	-1.73*
ACIND-100%	6.281	1.24	2.314	1.39	-	-	-	-
ACIND-51-99%	-	-	-	-	-6.281	-1.24	-2.314	-1.39
ACFEX	0.198	1.95**	-0.008	-0.23	0.198	1.95**	-0.008	-0.23
ACGED	-0.047	-0.40	0.072	1.85*	-0.047	-0.40	0.072	1.85*
ACETH	0.091	1.69*	0.035	1.75*	0.091	1.69*	0.035	1.75*
ACSOW	0.329	1.75*	0.152	2.37***	0.329	1.75*	0.152	2.37***
ACEDU	-0.075	-1.20	0.010	0.48	-0.075	-1.20	0.010	0.48
ACEXP	-1.341	-2.40***	0.009	0.05	-1.341	-2.40*	0.009	0.05
BSIZE	1.215	1.10	0.163	0.44	1.215	1.10	0.163	0.44
BIND	-0.191	-0.84	-0.027	-0.36	-0.191	-0.84	-0.027	-0.36
DUALITY	-2.045	-0.42	-0.164	-0.10	-2.045	-0.42	-0.164	-0.10
FOWN	0.199	1.71*	-0.021	-0.76	0.199	1.71*	-0.021	-0.76
MOWN	-0.319	-2.20**	-0.065	-1.32	-0.319	-2.20**	-0.065	-1.32
UNDERW	-0.221	-2.46***	-0.051	-1.95**	-0.221	-2.46***	-0.051	-1.95**
AUD	1.291	0.35	-2.636	-2.16**	1.291	0.35	-2.636	-2.16**
CSIZE	-0.209	-0.09	0.841	1.17	-0.209	-0.09	0.841	1.17
CAGE	-2.344	-1.13	-0.568	-0.83	-2.344	-1.13	-0.568	-0.83
FHORIZON	0.654	1.10	0.354	1.76*	0.654	1.10	0.354	1.76*
LEV	4.588	0.61	2.421	0.98	4.588	0.61	2.421	0.98
Constant	51.675	1.69*	0.211	0.02	57.956	1.80*	2.525	0.24
n		186		174		186		174
$R^{2}(\%)$		16.16		18.20		16.16		18.20
Adjusted R <sup>2</sup> (%)		6.56		8.11		6.56		8.11
F-value		1.68**		1.80**		1.68**		1.80**

Multiple Regression Results of AFER and SQFER- Audit Committee Independence (ACIND) using Binary Variables

\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

Table 7.5

These results are inconsistent with Bédard *et al.* (2004), Bradbury *et al.* (2006), and Saleh *et al.* (2007) who found that a completely independent audit committee can reduce earnings management. However, these findings are comparable to the study of Klein (2002) and Amar (2014). They found that while the majority of independent directors on audit committee are negatively related to the level of earnings management, no negative and significant relationship was reported for the audit committees that consist of 100% independent directors. Overall, these findings suggest that it is not necessary for Malaysian IPO companies to have an audit committee comprising entirely of independent directors. This proposes that due to the small pool of skilled and experienced directors available in the Malaysian market, there is possibly a trade-off among independence and other characteristics, like financial expertise, which jointly could improve the audit committee effectiveness.

## 7.6 Audit Committee Financial Expertise using Binary Variable

The primary analysis indicated that audit committee financial expertise (ACFEX) had the wrong sign in its relationship with AFER and the expected sign with SQFER. However, both relationships were insignificant. This finding is not in line with the expected governance role of financial expertise on audit committee. In addition, it does not support the results of Bédard *et al.* (2004), and Mangena and Pike (2005) that financial expertise on audit committee is an important mechanism of governance.

With the purpose of confirming the credibility of the results, this study conducted the regression analysis for both models using alternative measurement of financial expertise. The measurement is dummy variable coded "1" if the audit committee

financial expertise is independent directors and "0" otherwise. Audit committee financial expertise is classified by distinguishing between the kinds of directors working on the committee. This study adopts this measurement since the using of dummy variable coded "1" if there is at least one financial expertise will not show any changes as all Malaysian companies strictly follow the MCCG, which insists on having at least one director with financial expertise on the audit committee.

Table 7.6

Multiple Regression Results of AFER and SQFER- Audit Committee Financial Expertise (ACFEX) using Binary Variable

Variables	Model O	ne (AFER)	Model Two	(SQFER)
	Coef.	t-stat	Coef.	t-stat
ACSIZE	-12.875	-2.70***	-2.882	-1.88*
ACIND	0.188	0.86	0.125	1.77*
ACFEX-Dummy	6.028	1.00	1.182	0.59
ACGED	-0.054	-0.45	0.063	1.62
ACETH	0.119	1.92**	0.035	1.71*
ACSOW	0.260	1.37	0.155	2.41***
ACEDU	-0.031	-0.64	0.012	0.61
ACEXP	-0.819	-1.69*	-0.015	-0.10
BSIZE	1.249	1.11	0.085	0.23
BIND	-0.212	-0.87	-0.062	-0.79
DUALITY	-2.052	-0.42	-0.257	-0.16
FOWN	0.181	1.54	-0.033	-0.84
MOWN	-0.272	-1.89*	-0.060	-1.27
UNDERW	-0.233	-2.45***	-0.060	-1.99**
AUD	0.984	0.27	-2.311	-1.91**
CSIZE	0.621	0.29	1.124	1.66
CAGE	-2.125	-1.01	-0.487	-0.71
FHORIZON	0.635	1.06	0.328	1.63
LEV	3.745	0.49	2.541	1.03
Constant	36.561	1.18	-10.546	-1.04
n		186		174
$R^{2}(\%)$		14.54		19.25
Adjusted $R^2$ (%)		4.75		9.28
F-value		1.49*		1.93***

\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

As shown in Table 7.6, the positive relationship of ACFEX-DUMMY with AFER and SQFER affirmed that financial expertise is not important characteristic to improve the accuracy of earnings forecasts in IPO prospectus. The results thus support the findings of Ahmad-Zaluki and Wan-Hussin (2010) that financial expertise on the audit committee of IPO companies does not play a significant role in monitoring the quality of the information contained in the IPO prospectus. These findings propose that it is not necessary to have as a minimum of one independent director with financial expertise on the audit committee to increase the accuracy of IPO earnings forecasts.

# 7.7 Audit Committee Gender Diversity using Dummy Variable and Natural Log

In the previous analysis, the audit committee gender diversity (ACGED) variable is treated as a continuous variable. It is clear that employing the proportion of female directors on the audit committee to the total number of directors to measure gender diversity does not have the positive and significant impact on earnings forecasts accuracy. Therefore, in this section the current study conducted the analysis with alternative measurements for gender diversity.

Following Adams and Ferreira (2009), Darmadi (2011) and Gul *et al.* (2011), dummy variable is used to measure the gender diversity, which equal to "1" if there is at least one female director on audit committee and "0" otherwise. Further, the current study utilizes another measurement, which is the natural logarithm of the number of female directors on audit committee plus 1 (Gul *et al.*, 2011)<sup>17</sup>.

<sup>&</sup>lt;sup>17</sup> So that the log of ACGED equals zero when there are no female directors on the audit committee.

Variables	Model One (AFER) Model		Model Tv	vo (SQFER)	Model O	ne (AFER)	Model Tw	ro (SQFER)
		ACGED-	DUMMY			ACGED-N	atural Log	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
ACSIZE	-10.928	-2.27**	-3.163	-2.04**	-10.956	-2.28**	-3.026	-1.94**
ACIND	0.216	1.01	0.136	1.97**	0.2149	1.01	0.140	2.00**
ACFEX	0.197	1.93**	-0.015	-0.44	0.193	1.90**	-0.007	-0.19
ACGED-Dummy	-1.767	-0.41	2.957	2.09**	-	-	-	-
ACGED-Log	-	-	-	-	-4.076	-0.69	2.476	1.26
ACETH	0.102	1.73*	0.030	1.52	0.103	1.75*	0.031	1.58
ACSOW	0.317	1.69*	0.162	2.56***	0.311	1.66*	0.158	2.46***
ACEDU	-0.072	-1.15	0.014	0.65	-0.072	-1.15	0.014	0.66
ACEXP	-1.292	-2.32**	0.044	0.24	-1.290	-2.32**	0.017	0.09
BSIZE	1.095	0.98	0.110	0.30	1.081	0.98	0.086	0.23
BIND	-0.232	-0.96	-0.054	-0.68	-0.235	-0.97	-0.062	-0.77
DUALITY	-2.391	-0.49	-0.342	-0.22	-2.281	-0.47	-0.220	-0.14
FOWN	0.194	1.65	-0.042	-1.06	0.202	1.72*	-0.033	-0.83
MOWN	-0.295	-2.06**	-0.055	-1.15	-0.299	-2.09**	-0.060	-1.25
UNDERW	-0.232	-2.47***	-0.059	-1.94**	-0.231	-2.46***	-0.057	-1.87*
AUD	1.619	0.44	-2.521	-2.08**	1.802	0.49	-2.305	-1.88*
CSIZE	0.622	0.30	1.246	1.83*	0.613	0.29	1.113	1.64
CAGE	-2.365	-1.14	-0.576	-0.85	-2.245	-1.08	-0.538	-0.78
FHORIZON	0.629	1.06	0.313	1.56	0.632	1.06	0.318	1.58
LEV	4.600	0.60	2.182	0.89	4.675	0.62	2.309	0.93
Constant	31.311	1.01	-10.563	-1.04	31.743	1.03	-9.585	-0.94
n		186		174		186		174
$R^{2}(\%)$		15.87		19.80		16.03		18.38
Adjusted $R^2(\%)$		6.25		9.91		6.42		8.31
F-value		1.65**		2.00***		1.67**		1.83**

Multiple Regression Results of AFER and SQFER- Audit Committee Gender Diversity (ACGED) using Binary Variable and Natural Log

\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

Table 7.7

Table 7.7 indicates that there is no change in the impact of gender diversity on the accuracy of earnings forecasts since the results are similar to the initial analysis.

# 7.8 Audit Committee Ethnicity as Dummy, Creating New Audit Committee Chinese Ethnicity (ACETH-CH), and by using both Malay and Chinese

In the previous analysis, the ethnic diversity (ACETH) variable is addressed as a continuous variable. In the results reported in Section 6.6 of Chapter 6, this study did not find any positive impact for Malay directors working on audit committee on the accuracy of IPO earnings forecasts.

To further examine this issue, this study used alternative measure for the ethnicity by using dummy variable equal to "1" if there is at least one Malay director on the audit committee and "0" otherwise. The results presented in first part of Table 7.8 confirm that the presence of Malay directors on the audit committee of IPO companies has no positive influence on the accuracy of earnings forecasts.

In addition, since the Malay directors have no effect on earnings forecasts accuracy, audit committee Chinese director variable (ACETH-CH) was created. ACETH-CH was measured as the percentage of Chinese directors on the audit committee (Yunos *et al.*, 2012). Interestingly, the results reported in the second part of Table 7.8 indicate that Chinese directors have a positive effect on the accuracy of earnings forecasts. However, this effect is insignificant.

# Table 7.8

Multiple Regression Results of AFER and SQFER- Audit Committee Ethnicity (ACETH) using Dummy Variable, Audit Committee Chinese (ACETH-CH), and both ACETH and ECETH-CH

Variables	Mode (AF	el One ER)	Model (SQF	Two ER)	Mod (A	el One FER)	Mode (SQ	el Two FER)	M (	odel One (AFER)	Me (S	odel Two SQFER)
		ACETH-	Dummy		ACETH-CH			ACETH and ACETH-CH				
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
ACSIZE	-9.906	-2.07**	-2.729	-1.76*	-10.530	-2.17**	-2.706	-1.72*	-10.349	-2.14**	-2.635	-1.69*
ACIND	0.257	1.20	0.147	2.13**	0.221	1.07	0.142	2.02**	0.243	1.13	0.144	2.07**
ACFEX	0.192	1.87*	-0.016	-0.47*	0.192	1.88*	-0.015	-0.43	0.209	2.04**	-0.008	-0.22
ACGED	-0.058	-0.49	0.068	1.74	-0.049	-0.42	0.071	1.83*	-0.079	-0.67	0.051	1.53
ACETH	-	-	-	-	-	-	-	-	0.271	1.82*	0.099	2.07**
ACETH-Dummy	2.981	0.81	1.447	1.19	-	-	-	-	-	-	-	-
ACETH-CH	-	-	-	-	-0.064	-1.09	-0.016	-0.81	0.183	1.24	0.074	1.55
ACSOW	0.331	1.76*	0.167	2.61***	0.308	1.63	0.162	2.51***	0.341	1.85*	0.171	2.67***
ACEDU	-0.069	-1.10	0.015	0.69	-0.072	-1.14	0.013	0.63	-0.070	-1.12	0.013	0.64
ACEXP	-1.356	-2.42***	0.041	0.22	-1.367	-2.45***	0.028	0.15	-1.223	-2.18**	0.070	0.38
BSIZE	1.085	0.95	0.111	0.30	1.083	0.96	0.061	0.16	0.919	0.82	0.012	0.03
BIND	2143	-0.88	-0.053	-0.66	-0.211	-0.87	-0.055	-0.69	-0.261	-1.11	-0.075	-0.94
DUALITY	-2.356	-0.48	-0.271	-0.17	-2.337	-0.48	-0.309	-0.19	-2.616	-0.54	-0.394	-0.25
FOWN	0.178	1.52	-0.043	-1.08	0.187	1.59	-0.042	-1.06	0.194	1.66*	-0.039	-0.98
MOWN	-0.282	-1.96**	-0.053	-1.10	-0.285	-1.98**	-0.053	-1.11	-0.311	-2.17**	-0.061	-1.28
UNDERW	-0.233	-2.46***	-0.059	-1.92**	-0.236	-2.50***	-0.061	-2.01**	-0.228	-2.44***	-0.059	-1.94**
AUD	1.446	0.39	-2.454	-2.01**	1.357	0.37	-2.464	-2.01**	2.318	0.62	-2.097	-1.71*
CSIZE	0.987	0.47	1.245	1.83*	0.665	0.31	1.237	1.76*	1.343	0.62	1.472	2.09**
CAGE	-2.231	-1.07	-0.483	-0.71	-2.348	-1.13	-0.495	-0.72	-2.266	-1.10	-0.516	-0.76
FHORIZON	0.543	0.91	0.303	1.51	0.564	0.95	0.292	1.45	0.641	1.08	0.327	1.64
LEV	4.721	0.62	2.440	0.99	4.476	0.59	2.310	0.93	4.761	0.63	2.403	0.98
Constant	22.740	0.74	-12.778	-1.28	36.595	1.08	-9.727	-0.86	3.218	0.08	-21.642	-1.72*
n		186		174		186		174		186		174
$R^{2}(\%)$		14.74		18.54		15.01		18.15		16.69		20.38
Adjusted R <sup>2</sup> (%)		4.98		8.49		5.28		8.05		6.59		9.97
F-value		1.51*		1.85**		1.54*		1.80**		1.65**		1.96***

\*\*\*significant at 0.01 level; \*\*significant at 0.05 level; \*significant at 0.10 level.

Finally, in the third part of Table 7.8, both Malay directors variable (ACETH) and Chinese directors variable (ACETH-CH) are used together in one model, to help in identifying the level of consistency of results over the two ethnic groups. Surprisingly, the results of both variables show that the ethnic diversity is not associated with the accuracy of earnings forecasts published in the IPO prospectuses.

## 7.9 Summary and Conclusion

To confirm the initial results, additional analysis was conducted on the aggregated audit committee score, the dependent variables (AFER and SQFER), transformed audit committee size (ACSIZE), audit committee independence (ACIND), audit committee financial expertise (ACFEX), audit committee gender diversity (ACGED) and audit committee ethnicity (ACETH).

For the audit committee as score, the results show that IPO audit committee is not effective in determining the accuracy of earnings forecasts. Concerning the dependent variables, the study used total assets and sales as deflators for both AFER and SQFER instead of forecasts earnings. The findings of associations of independent variables with the AFER and SQFER were sensitive to the use of alternative proxies for earnings forecast accuracy. In terms of ACSIZE, the transformation of ACSIZE using Van Der Waerden technique produced similar findings to initial analysis.

Whilst ACIND, ACFEX, and ACGED remained insignificant in the additional analysis, the strong negative coefficient on the size of audit committee confirmed the previous results that more directors on the audit committee lead to lower earnings forecasts errors. Further, when regressing both audit committee Malay (ACETH) and audit committee Chinese (ACETH-CH) together, the Malay directors (ACETH) had positive and significant association with both AFER and SQFER leading to more forecasts errors.

## **CHAPTER EIGHT**

# SUMMARY AND CONCLUSION

## **8.1 Introduction**

The current study investigates the impact of audit committee characteristics on the accuracy of management earnings forecasts included in the Malaysian IPO prospectuses, with a focus on the earnings forecasts regulatory changes, as well as the provided reasons behind the errors of earnings forecasts. Particularly, this study presents a review of the literature, develops testable hypotheses, discusses the methods of research, and reports empirical results concerning the association between the characteristics of IPO audit committees and earnings forecasts accuracy. The aim of this chapter is to present the summary of results besides illustrating and discussing the limitations and the contributions of this study. Over and above, it provides suggestions for future research.

Specifically, this chapter is structured as follows. Section 8.2 presents the recapitulation of the study. Section 8.3 presents the potential implications of the current study. Section 8.4 addresses some recommendations that may help in enhancing the accuracy of IPO earnings forecasts. Then, Section 8.5 illustrates the limitations of this research and highlights some avenues for future research. Lastly, this chapter ends with Section 8.6 with the concluding remarks.

### 8.2 Recapitulation of the Study

Gallery *et al.* (2011) and Chiyachantana and Hong (2012) indicated that information concerning the expected future earnings, which is disclosed in the prospectuses of IPOs, is deemed to be deeply relevant to inform investors regarding investments in the new issues of shares. In addition, these IPO forecasts of earnings are considered as a critical assessment tool by the investors in identifying their concern in offered shares and by underwriters in order to set the price of offer (Chen & Hou, 2011). Earnings forecasts may mitigate the degree of information asymmetry between the insiders of the company and its external investors, besides decreasing the problems of adverse selection in the IPO market (Firth *et al.*, 2012). Nonetheless, for the earnings forecasts to be valuable, it has to be accurate and this is essential for it to be considered as a reliable signal (Gounopoulos, 2003). The credibility of such information is regarded as an ongoing concern of regulators, whether in Malaysia or elsewhere.

Therefore, earnings forecasts errors are likely to decrease the quality of reported earnings, their value for investment decisions, and investor confidence in the financial reports. However, when management earnings forecasts is constrained by monitoring systems, earnings forecasts are more reliable and of higher quality. Specifically, audit committees as internal mechanisms of corporate governance, are suggested to undertake an effective monitoring role in aligning the interests of managers and shareholders, reducing managers' opportunistic behavior, therefore enhancing the quality of disclosed IPO earnings forecasts.

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The audit committee is accountable for monitoring the process of corporate reporting and eventually the quality of disclosed financial information. This study is based on issues concerning the accuracy of management earnings forecasts included in IPO prospectus and the effectiveness of audit committees among Malaysian IPO companies to enhance this accuracy. It is claimed that the characteristics of audit committees might be better indicators of committee effectiveness (Carcello & Neal, 2000; Bédard *et al.*, 2004; Lin & Hwang, 2010). Simply put, recognizing the characteristics is vital to understand the effectiveness of audit committee (Bédard & Gendron, 2010). The motivation behind this study is the importance of earnings forecasts especially for investors as well as the emphasis of the Malaysian authorities on the affirmative contribution of good practices of corporate governance structures (i.e., audit committee) on the quality of financial disclosure and reporting.

Based on this, the first and second objectives of this study are to determine the level of Malaysian IPO earnings forecasts accuracy in general as well as within different regulations concerning the issuing of IPO earnings forecasts. Importantly, the third objective in this study is to test the impact of the audit committee characteristics on the accuracy of management earnings forecasts. The fourth objective seeks to explore the explanations reported by directors of IPO companies as reasons behind the errors of earnings forecasts.

A quick return to the objectives of this study has revealed that this study is mainly conducted to find answers to four research questions, namely: (1) What is the level of accuracy of management earnings forecasts that are included in Malaysian IPO prospectuses? (2) Do mandated IPO management earnings forecasts provide the market with more accurate and conservative information than is provided within an unregulated market (voluntary regime)? (3) What is the relationship between audit committee characteristics, namely, size, independence, financial expertise, gender diversity, ethnicity, stock ownership, educational background and experience, and the accuracy of management earnings forecasts? (4) What explanations have been provided in the first published annual reports by the management when the earnings forecasts made in their IPO prospectuses have deviated outside  $\pm 10\%$ ?

This study employed two proxies to determine the accuracy of management earnings forecasts, which are absolute forecasts errors and squared forecasts errors. To observe the influence of the audit committee characteristics on earnings forecasts accuracy, a total of 190 non-financial IPO companies listed on the Main Market of Bursa Malaysia, during the period 2002-2012, with complete and disclosed data for earnings forecasts and actual earnings in IPO prospectus and annual report, were chosen. A quantitative research approach was employed to answer eight specific hypotheses developed in this study regarding the characteristics of audit committee and one hypothesis concerning the comparison between the current voluntary regime of earnings forecasts and former mandatory regime. Furthermore, a qualitative research based on the manual content analysis method is adopted to explore the provided explanations in annual reports regarding the deviations of IPO earnings forecasts. Within the three alternative significance levels that is available for researchers (0.01, 0.05, 0.10), this study used all levels of significance as the critical levels in order to determine the acceptability or rejection of the hypotheses tested.

Answering the first research question, this empirical study found that the mean forecast error was positive, which particularly means that earnings forecasts of Malaysian IPO were pessimistic (under-forecasting). This result is inconsistent with the last evidences on Malaysia, that management of IPOs generally issues more optimistic earnings forecasts. For the accuracy of earnings forecasts included in IPO prospectus, the study reported low means for both proxies. This practically means that Malaysian IPO companies issue, to some extent, earnings forecasts with improved accuracy.

Answering the second research question, this empirical study found that Malaysian IPO earnings forecasts were more pessimistic under the voluntary regulation environment than mandatory environment, which is inconsistent with the first stated hypothesis under this research question. Similarly, the results concerning the accuracy of earnings forecasts did not provide support for the second hypothesis under this research question. Specifically, the study found that the accuracy of earnings forecasts was lower under the voluntary forecasts environment than in mandatory forecasts environment.

Concerning the answer to research question three, from the analyses undertaken on the first model (AFER), it was found that five out of the eight characteristics of audit committee tested in this study were significantly related to the accuracy of earnings forecasts. The findings indicate significant relationships with the positive impact between audit committee size, audit committee experience and accuracy of earnings forecasts. Further, the results reveal significant relationships with the negative impact between audit committee financial expertise, audit committee ethnicity, and audit committee stockownership and accuracy of earnings forecasts. In terms of the second model (SQFER), it was found that four out of the eight characteristics of audit committee were significantly related to the accuracy of earnings forecasts. The results indicate significant relationships with the positive impact between audit committee size and earnings forecasts accuracy. In addition, the findings show significant associations with the negative impact between audit committee independence, audit committee gender diversity, and audit committee stock ownership and accuracy of earnings forecasts. Table 8.1 provides summary of hypotheses and results.

For research question four, this study found that the number of provided comments and explanations in the first published annual report of IPO company is greater when the management of IPO companies were more optimistic in making their earnings forecasts (i.e., the difference between actual earning and the forecasts is negative) and the forecasts errors were large. Interestingly, the majority of comments were provided when the forecast errors were in line with the tolerance level of  $\pm 10$  issued by the SC. In case of pessimistic forecasts, the provided explanations were few and general compared to the case of optimistic earnings forecasts where higher number of general and specific explanations were provided. The explanations provided for negative deviation (optimistic forecasts), generally indicate that the reasons for the deviations of forecasts were due to circumstances and events that were outside the control of the management of IPO companies and consequently the accountability cannot be placed on management.

Table 8.1

Summary of Hypotheses and Results

	Hypothesis					Conclusion
H1a	IPO management					Not
	earnings forecasts have					supported
	been more optimistic					
	under the voluntary					
	regime than mandatory					
	regime.					
H1b	IPO management					Not
	earnings forecasts have					supported
	been more accurate					
	under the voluntary					
	regime than mandatory					
	regime.			Eindir	200	
	Urmothesis		Mod	rilluli al Ona	igs Mode	
	Hypothesis	Expected		Canalusian		Conclusion
110	A 1'. ' ' '	Sign	AFEK	Conclusion	SQFER	Conclusion
H2	Audit committee size is	-	-	Supported	-	Supported
	the accuracy of		(S1g)		(S1g)	
	management earnings					
	forecasts included in the					
	IPO prospectuses					
H3	Audit committee	_	+	Not	+	Not
110	independence is		(Not	supported	(Sig)	supported
	positively associated with		Sig)		(* 8)	II
	the accuracy of		U,			
	management earnings					
	forecasts included in the					
	IPO prospectuses.					
H4	Audit committee	-	+	Not	-	Not
	financial expertise is		(Sig)	supported	(Not	supported
	positively associated with				Sig)	
	the accuracy of					
	management earnings					
	Included in the					
Ц5	Audit committee gender			Not		Not
пз	diversity is positively	-	- (Not	supported	+ (Sig)	supported
	associated with the		(NOL Sig)	supported	(Sig)	supported
	accuracy of management		DIg)			
	earnings forecasts					
	included in the IPO					
	prospectuses.					
H6	Audit committee	-	+	Not	+	Not
	ethnicity is positively		(Sig)	supported	(Not	supported
	associated with the				Sig)	
	accuracy of management					
	earnings forecasts					
	included in the IPO					
	prospectuses.					

# Table 8.1 (Continued)

		Findings					
	Hypothesis	Expected	Mod	el One	Mode	el Two	
		Sign	AFER	Conclusion	SQFER	Conclusion	
H7	Audit committee stock ownership is associated with the accuracy of management earnings forecasts included in the IPO prospectuses.	±	+ (Sig)	Supported	+ (Sig)	Supported	
H8	Audit committee educational background is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.	-	(Not Sig)	Not supported	+ (Not Sig)	Not supported	
H9	Audit committee experience is positively associated with the accuracy of management earnings forecasts included in the IPO prospectuses.	_	(Sig)	Supported	+ (Not Sig)	Not supported	

Summary of Hypotheses and Results

Notes: Sig= Significant and Not Sig= Not Significant. The said positively associated with the accuracy of management earnings forecasts in the hypotheses means that the expected relationship with AFER and SQFER is negative.

# 8.3 Implications of the Study

The theoretical and empirical implications of this study as well as the implications for

the researchers are discussed in the following sections.

# 8.3.1 Implications for Theory

The agency theory, resource-dependence theory and signaling theory are the three main theories that underpin the hypotheses development of this study. The current study contributes to these theories by adding additional understanding concerning the audit committee and its effect on the accuracy of management earnings forecasts of IPOs in the Malaysian environment.

It is observed that, in both models the results of audit committee size provide support for the resource-dependence theory, which suggests that companies with large size of directors can obtain varied and essential resources onto the board that may result in a positive effect on the quality of financial monitoring. This practically means that the higher the number of directors on audit committee, the more accurate the earnings forecast will be. This study however fails to support the agency theory in terms of the relationship between audit committee independence and IPO earnings forecasts accuracy. In fact, this study reports a positive relationship between committee independence and AFER and positive significant relationship in case of SQFER. It is obvious that the finding regarding to audit committee independence is more consistent with the stewardship theory which suggests that executive directors are more valuable than non-executive directors and the boards should be controlled by inside directors (Nicholson & Kiel, 2004; Koerniadi & Tourani-Rad, 2012).

Furthermore, the findings of model one (AFER) and two (SQFER) indicate that the audit committee financial expertise did not provide support to the argument of resource-dependence theory that the resources should be provided by the directors to effectively support the financial reporting quality (Bédard et al., 2004). Similarly, the results of audit committee gender diversity in both models did not provide support to the resource-dependence theory and signaling theory. Likewise, the findings illustrate that audit committee ethnicity is not associated with accuracy of IPO earnings forecasts which contradict the perspective of resource-dependence theory.

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For the audit committee stock ownership, the results show that the shareholding of audit committee is related to accuracy of IPO earnings forecasts. However, these results are not in line with the agency theory, which posits that directors who own great stock ownership will have interests that are more consistent with the interests of shareholders. Thus, they may have more motivations to oversee the activities of management (e.g., Karamanou & Vafeas, 2005; Mangena & Pike, 2005). Nevertheless, the results appear to support the theoretical assumption by scholars like Carcello and Neal (2003) and Mangena and Pike (2005) that high stock ownership may result in entrenchment. They indicated that higher ownership might affect the independence of committee members and reduce their monitoring abilities.

Concerning the audit committee education, the results of this study show that the educational background of the IPO audit committee members is not related to the accuracy of IPO earnings forecast. Therefore, this study fails to provide support to the resource-dependence theory with regards to the relationship between educational background and IPO earnings forecasts accuracy. However, the results about the experience of audit committee directors provide support for the resource-dependence theory in model one (AFER) but no support is provided in model two (SQFER).

Overall, the findings of this study propose that audit committee could be used as a reliable signal in the IPO company's signaling strategy as well as the findings provide enhancing for the monitoring function of IPO board of directors, as suggested by the agency theory. Further, the significant impact of some of the audit committee characteristics on the IPO earnings forecasts accuracy proposes that this internal governance mechanism plays, to some extent, an important role in determining the

accuracy of earnings forecasts. Thus, there is no one superior theory to provide support to the attitude of the audit committee practices in Malaysian IPO companies. Therefore, implementing a multi-theoretical approach that comprises several theories, such as the resource-dependence theory, signaling theory, stewardship theory, and agency theory is an important step to gain deeper understanding of the relationship between audit committee characteristics and the accuracy of IPO earnings forecasts.

# **8.3.2 Implications for Policy Makers**

The Malaysian authorities of corporate governance may draw on this study as empirical support for improving their regulations and building additional recommendations on corporate governance. The positive influence that the number of audit committee directors has on IPO earnings forecasts accuracy confirms the hypothesized role of committee size in enhancing accuracy of earnings forecasts. Therefore, findings of this study do not require the obligation of stringent limits on the maximum number of directors sitting on IPO audit committee.

The inverse impact of some characteristics of audit committee (i.e., independence and expertise) on earnings forecasts accuracy proposes that these characteristics do not undertake an active position in enhancing the quality of financial disclosure concerning the earnings forecasts issued in IPO prospectus. To ascertain the linkage between audit committee effectiveness and accuracy of IPO management earnings forecasts, the results of this study justify additional examination of the nature of the responsibilities undertaken by independent directors, and financial experts of IPO companies in the financial disclosure and reporting process. Therefore, the Malaysian

Institute of Corporate Governance or Bursa Malaysia should instruct and provide knowledge to the directors on audit committees regarding their significance to demand for enhanced financial disclosure. The outsiders need to be dependent on the quality of financial reports to undertake their investment decisions since they are not involved with the company's management to have access to the private information. The wealth of outsiders relies on the accuracy of the information disclosed in the financial reports. Therefore, they should require more accurate disclosure to guarantee that the presented figures reveal the exact value of the company.

Similarly, gender diversity is insignificantly associated with IPO earnings forecasts accuracy. Therefore, this increases the concerns of the benefits of recruiting more females on the boards of Malaysian companies, (as recommended by MCCG 2012). This proposes that this procedure has not improved the accuracy of IPO earnings forecasts. Based on this result, the policy implication is that more investigation is required to recognize whether female directors face difficulties in promoting better practices of corporate governance and adding value to the accuracy of earnings forecasts.

The results of this study show that a great level of audit committee shareholding may restrain the accuracy of IPO earnings forecasts. This in turn may impair the value of IPO companies and interests of shareholders. This implies that policy makers, besides regulators, need to consider the unfavorable effect of the audit committee stock ownership on the quality of disclosed financial information. Further, the positive insignificant effect of educational background on earnings forecasts accuracy in model one and negative impact in model two proposes that a varied level of academic qualifications that offer various skills of research and analysis, does not enhance the IPO earnings forecasts accuracy. Nevertheless, there is a necessity for recognizing the significance of audit committee-relevant skill sets, which are suitable for Malaysian IPO companies.

In terms of audit committee proficiency, this study reports that only work experience of audit committee directors results in more accurate earnings forecasts. Therefore, the Malaysian Institute of Corporate Governance and Bursa Malaysia should stringently put emphasis on a balance of the expertise and skills of the directors sitting on audit committees. Thus, to improve the competencies of audit committee members, the prepared programs by Bursa Malaysia, such as Mandatory Accreditation Program and continuing education program are suitable methods to do that. Further, the contents of such programs should be adjusted frequently to represent the current situation in Malaysia as documented by empirical evidence.

Additionally, it is expected that the findings of this study can provide insight on the improvements to the accuracy and trend of the forecasts (i.e., optimistic or pessimistic) after the change from mandatory to voluntary disclosure. Thus, the Malaysian authorities may learn whether this change is an effective policy or whether the regime of mandatory disclosure was better for IPO companies and should be reversed. The results will also show the IPO companies that felt confident to disclose earnings forecasts in their prospectuses after the regulatory change.

Overall, the results suggest that the IPO audit committees still need to be more effective in monitoring; thus the tasks of audit committees need to be strengthened. Further, this underlines the need to modify the adopted practices concerning audit committees in Malaysian IPOs. Perhaps raising the lawful protection for investors and imposing more harsh punishment on the audit committee directors who do not perform their monitoring tasks with appropriate diligence, may develop better corporate governance practices in Malaysian IPOs.

#### **8.3.3 Implications for the Researchers**

The findings of the current research will be of significance to the academic community and researchers, because of a lack of literature addressing the accuracy of management earnings forecast weather in the Malaysian context or elsewhere. Thus, the present study adds to the growing empirical literature and body of knowledge about the quality of management earnings forecasts, and motivates additional studies on the relationship between corporate governance and IPO earnings forecasts accuracy. Specifically, the results of this study are practical in establishing a starting point for further empirical examination of the significance of the audit committee characteristics in Malaysian IPOs. In addition, the findings reported in this study might be valuable to academic researchers examining IPO related issues, earnings reporting quality and corporate governance.

Moreover, the inverse impact of independent directors and financial expertise of audit committees on the accuracy of earnings forecasts needs more investigation by the researchers. Finally, rather than concentrating only on the task of audit committee and earnings forecasts accuracy, this study provides evidence that other factors, such as family ownership and management ownership, have an impact on the accuracy of IPO earnings forecasts. Finally, it is worth to extend this study in the future to further markets, particularly in emerging markets and transition economies.

## 8.3.4 Implications for Management and Stakeholders

The findings revealed in this study might be valuable to management and shareholders of IPO companies who are interested in enhancing the quality of financial reporting and disclosure. It is expected to provide them with understanding concerning the significance of best corporate governance practices in improving the quality, transparency and reliability of their financial disclosure and reporting process. Specifically, the results of this study provide information regarding audit committee characteristics found to significantly influence the accuracy of earnings forecasts. Thus, if the IPO management desires to improve the issued earnings forecasts in their prospectuses, these characteristics should be considered. Measuring the impact of monitoring systems, such as audit committees, could permit decision makers to assess the responsibility of this monitoring mechanism in supporting shareholders' awareness of the quality of financial information. When shareholders are capable of acquiring trustworthy information concerning the performance of company, their financial decisions can turn out to be more precise and efficient.

In terms of investors, they should check the governance characteristics of IPOs and consider consequences for earnings forecasts errors. The results of this study present valuable information to investors who seek to invest in Malaysian IPOs. By doing so, investors can evaluate the accuracy of the disclosed earnings forecasts in the prospectuses by Malaysian IPO companies. Reliability of such information is important for establishing and maintaining investors' confidence about the credibility of financial disclosures.

Finally, financial analysts who help investors to make investment decisions, would like to analyze the financial reported information in the IPO prospectuses. Therefore, the findings of this study will be important to them since it will highlight factors that contribute to the disclosure accuracy of earnings forecasts and then help them to assess the prospectuses more effectively. Further, the results of this study could provide some inputs for financial analysts in Malaysia to carry out a great role in overseeing the companies.

## **8.4 Recommendations**

Based on the results of the current study, it can be indicated that the errors exist in earnings forecasts included in Malaysian IPOs prospectuses, whether during the previous regime of mandatory earnings forecasts or current voluntary regime. As a result, the audit committee can be employed by the regulators to constrain these errors in IPO earnings forecasts. Regulators may ask the IPO companies to enhance and promote the responsibility of audit committee as a crucial internal corporate governance mechanism. On the whole, the subsequent recommendation could help in restraining the errors of earnings forecasts and improve the best practices of corporate governance.

- Enhancing the understanding of the concept of audit committee as a significant internal mechanism as well as its responsibility in improving financial reporting and disclosure of IPO earnings forecasts.
- 2- Revising the requirements concerning the composition of audit committee and developing practical guidelines in order to activate the supposed role of independent directors sitting on the committee.
- 3- Developing the responsibilities of audit committees by improving the expertise and skills of its directors through undertaking some training workshops. These workshops should describe their proposed roles and tasks that lead to more quality of financial reporting and earnings forecasts as well as enhancing their knowledge on the magnitude of protecting the rights of investors.
- 4- Eradicating the barriers and limitations related to the achievement of the recommendations of MCCG concerning the audit committee.
- 5- The results of audit committee experience provide evidence to the regulators to emphasize on the requirement that audit committee directors should have some years of experience in assigned corporate oversight responsibilities.
- 6- The SC needs to motivate the IPO companies to issue earnings forecasts due to its importance for investors. When regulators move to reinforce the practices of corporate governance, they should be conscious that a side influence could be that companies turn to be more unwilling to issue voluntary

earnings forecasts in favor of investors in documents like the prospectuses of IPOs (Cormier *et al.*, 2014).

# 8.5 Limitations and Future Research Directions

This section discusses the possible theoretical and methodological limitations of this current study that are worth noting, and thus the results are supposed to be explained with knowledge of these possible limitations. Further, this section presents some suggestion for studies to be carried out in the future.

### 8.5.1 Limitations

This current study has considerably added further understanding that some audit committee attributes have led to increasing the accuracy of earnings forecasts included in IPO prospectus and some have led to decreasing it. Thus, it provided consciousness concerning the efficiency of the audit committee as internal governance mechanism in Malaysian IPOs. However, as with any study, this current study is subject to several limitations that should be highlighted to warrant a fair explanation of the findings.

Firstly, the sample of this study excluded all financial IPO companies, real estate companies, closed-end funds companies, and infrastructure companies since they have different regulations. Thus, the results from this study are not suitable to be generalized to these excluded IPOs. Furthermore, the size of sample regarding the IPO companies that went public under voluntary earnings forecasts regime was small. Secondly, this study essentially focused on investigating the attributes of audit committee as an important internal governance mechanism. Further, it explored another internal mechanism, which is the board of directors as control variables of the study. Therefore, the accuracy of management earnings forecasts can be determined by the non-investigated external governance mechanism (i.e., company valuations, the managerial labor market, and the legal implications).

Thirdly, this study employs Malaysian data. That is, the concern supposed to be taken in generalizing its findings to stock markets in other countries, in which their capital markets might reveal different attributes regarding size, number of IPO companies and the valuation of market. Further, other IPO markets may have dissimilar regulations, practices, and economic characteristics. In addition, the focus of this study was on the IPO companies listed on the Main Market of Bursa Malaysia. The reason for this is that, under ACE market listings, IPO companies are not bound to disclose their forecast earnings results by SC. Thus, the awareness is needed when generalizing the results of this research to non-Main Market IPO companies.

Finally, the earnings forecasts and audit committee attributes data in this study covers only the period spanning from 2002 to 2012, which may not be generalized for other before-and-after periods. The generalizing of the findings of this study to cover other periods is supposed to be observed with some consciousness.

Although these limitations are recognized, they do not detract from the strengths of this study and the importance of its results. The aforementioned limitations merely present platforms and encourage the need for the future studies, some of which are presented in the next section.

# **8.5.2 Future Research Direction**

Notwithstanding the aforementioned limitations, this current study adds some unique contributions to the growing body of literature on the examination of earnings forecasts errors in Malaysian IPO prospectuses and the role of audit committee in hindering these forecasts errors. Nevertheless, there are a number of areas that can be valuable for improvement in the future of IPO earnings forecasts studies. Thus, extension to the current study is feasible in the following areas:

- 1- This study described the issue of earnings forecasts bias but it did not examine the association between audit committee characteristics and the bias of these forecasts. Thus, future studies can conduct investigation concerning such issue.
- 2- One potential avenue for future research is examining additional audit committee characteristics, which may affect earnings forecasts accuracy. Examples for such additional characteristics are the age of directors and the family directors on the audit committee. Therefore, it is recommended that further research should give attention to these variables for better understanding of variables that actually affect the accuracy of management earnings forecasts in IPO prospectus.
- 3- The results of this study indicated that audit committee independence is related to higher earnings forecasts errors. This result is not in line with the
agency theory where outside directors should be independent from the affect of management to be an efficient monitor. Thus, due to this unsatisfactory result, further examination is required to evaluate the effectiveness of the independent directors' monitoring responsibility. Future studies could perhaps differentiate between 'independent' and 'grey' directors in the Malaysian context, such as the study of Beasley (1996). This is to present a more defined measure of audit committee independence and its association with earnings forecasts accuracy.

4- To guarantee greater overseeing, the MCCG indicates that Malaysian companies should follow the best practices of corporate governance. Nonetheless, prior research claimed that corporate governance system in Asian countries is not performing efficiently because of the impact of the concentrated shareholders. This evidence was reported by Hu, Tam, and Tan (2010) and Chen, Li, and Shapiro (2011) that concentrated shareholders restrict the efficiency of the governance mechanisms of the company. The results of this study indicate that some audit committee attributes are found to have negative impact on the accuracy of earnings forecasts. Therefore, the performance of the IPO company governance mechanism possibly will be negatively influenced by the impact of the concentrated shareholders. Thus, it is of interest for future studies to test the moderating impact of ownership concentration on the effectiveness of the audit committee and its impact on the accuracy of IPO management earnings forecasts.

- 5- An additional area worthy of further research is the investigation if the religiosity of directors on audit committee determines accuracy of earnings forecasts since none such investigation presently exists in the literature of IPO and management earnings forecasts. The expected results may provide an insight to reach harmonization of financial disclosure and reporting.
- 6- Haniffa and Cooke (2002) found that ethnicity is significantly related to the level of voluntary disclosure. They explained that companies directed by Malay directors are premised on Islamic business ethics that support transparency in business. Thus, it will be of interest to examine the impact of audit committee on the earnings forecasts accuracy of both IPOs for *shariah*-compliant companies and IPOs for non *shariah*-compliant companies.
- 7- The results showed that financial expertise was associated with more earnings forecasts errors in case of absolute forecast error model and insignificant in case of squared forecast error model. Therefore, it is of importance for future studies to conduct examination on the other diverse professional background of audit committee directors (i.e., lawyers, governance experts, bankers, politicians and government officials).
- 8- Lastly, another interesting avenue for future studies would be undertaking a comparative study between some Asia-Pacific countries and Malaysian IPO companies in terms of the influence of audit committee characteristics in determining the IPO earnings forecasts accuracy.

## 8.6 Concluding Remarks

This current study has contributed to the field of IPO related studies, mainly in terms of the determinants of IPO earnings forecasts accuracy. It specifically examines the responsibilities of the audit committees in enhancing the accuracy of management earnings forecasts included in Malaysian IPO prospectus.

This study found that practices of good governance concerning the mechanism of audit committee can, to some extent, enhance the accuracy of IPO management earnings forecasts. The results indicate that some attributes of audit committee, like size and experience are found to have significant and positive influence on the earnings forecasts accuracy. Further, the direction of association on some other examined characteristics (e.g., gender diversity and educational background in model one and financial expertise in model two) signal that they are positively affected by the accuracy of earnings forecasts but the effects are insignificant. In general, this study proposes that audit committee does matter in Malaysian IPO companies. Additionally, the study indicated that the accuracy of earnings forecasts was better under the previous mandatory disclosure of earnings forecasts rather than the current voluntary regime. For the earnings forecasts errors explanations, most IPO companies provided comments and reasons behind the deviations of forecasts errors. The study found that the more detailed explanations were provided when the deviation is optimistic and the errors are large.

In conclusion, the results of this study are considered as a wake-up call for supporting the process of reform towards enhancing IPO management and more responsible audit

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committee. The study has revealed that some practices of corporate governance concerning audit committee that were put into place still need to be improved in order to greatly enhance the earnings forecasts accuracy. The Malaysian regulators may depend on these results to bring about some kind of reform process with respect to designing the audit committees in a way that improves the quality of internal governance. In addition, they will be able to utilize the findings to define efficient governance characteristics as well as assess the preceding governance recommendations and the requirements of disclosure.

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