# AUDIT COMMITTEE CHARACTERISTICS AND INTERNAL AUDIT BUDGET: MALAYSIAN EVIDENCE

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# AUDIT COMMITTEE CHARACTERISTICS AND INTERNAL AUDIT BUDGET: MALAYSIAN EVIDENCE

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# ABSTRACT

An audit committee is viewed as an essential self-regulatory internal governance instrument that is expected to provide an overseeing role over the entire process of financial reporting. An internal audit is also one of the corporate governance cornerstone that is essential for the effective monitoring of the operating performance of internal control. To ensure its effectiveness, the audit committee monitors the resources available to the internal audit, and internal control functions should be directly reported to the audit committee. This study is set out to explore the effect of audit committee characteristics (i.e independence, expertise, meeting and tenure) on internal audit budget in Malaysia, where governance mechanisms are suboptimal. The study also opens the door to an unanswered question, that is, whether an audit committee index is related to internal audit budget. Data of 96 companies listed on Bursa Malaysia for a three-year period, 2012-2014, was utilized to achieve this end. The regression result shows that there is audit committee meeting and index are significantly and positively associated with internal audit budget. They also indicate that audit committee tenure has a significant and negative impact on internal audit budget. The theoretical, practical, academic and regulatory implications of these findings were discussed in details. On one extreme, the findings of the study supports the recent policy initiatives in relation to audit committee and internal audit. On the other extreme, the result serves as a wake-up call to policy makers in requiring more committed, competent and skilled members on the audit committee.

**Keywords:** Audit committee characteristics; internal audit budget; Bursa Malaysia

## ABSTRAK

Jawatan kuasa audit dilihat sebagai salah satu alat kawal selia sendiri yang digunakan oleh tadbir urus dalaman untuk menyelia keseluruhan proses laporan kewangan. Jawatan kuasa audit dalaman juga merupakan salah satu asas tadbir urus korporat yang sangat penting untuk mengawasi prestasi operasi kawalan dalaman yang lebih cekap. Bagi menjamin kecekapan, jawatan kuasa audit akan menyelia setiap sumber yang disalurkan ke audit dalaman, dan fungsi kawalan dalaman perlu dilaporkan kepada jawatan kuasa audit secara langsung. Kajian ini dilakukan untuk mengkaji kesan daripada ciri-ciri jawatan kuasa audit (contoh: kebebasan, kemahiran, mesyuarat jawatan kuasa dan pemilikan) ke atas bajet audit dalaman di Malaysia, di mana mekanisme pengawasan adalah suboptimal. Kajian ini turut membuka laluan kepada persoalan yang timbul, iaitu sama ada indeks jawatan kuasa audit berkait rapat dengan bajet audit dalaman. Data daripada 96 buah syarikat yang tersenarai di Bursa Malaysia untuk tempoh 3 tahun, 2012-2014, digunakan untuk menjawab persoalan yang timbul. Keputusan analisis regresi menunjukkan bahawa mesyuarat jawatan kuasa audit dalaman dan indeks jawatan kuasa audit adalah signifikan dan berkait secara positif dengan bajet audit dalaman. Analisis regresi turut menunjukkan bahawa pemilikan jawatan kuasa audit adalah signifikan dan mempunyak impak negatif terhadap bajet audit dalaman. Dapatan kajian secara teoritikal, praktikal, akademik dan implikasi peraturan akan dibincangkan secara terperinci. Pada capaian ekstrim, hasil kajian turut menjumpai kajian-kajian yang menyokong inisiatif dasar terkini yang berkaitan dengan jawatan kuasa audit dan audit dalaman. Selain itu, hasil kajian juga dapat dijadikan asas permulaan kepada pembuat dasar untuk mendapatkan individu yang lebih berdedikasi, berdaya saing dan berkemahiran tinggi sebagai ahli jawatan kuasa audit.


**Kata kunci**: Ciri-ciri jawatan kuasa audit; bajet audit dalaman; Bursa Malaysia

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Sincerely,

Almahdi Ali Mohamed Saleh Almagdoub

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| | |
|---|---|
| MCCG | Malaysian Code of Corporate Governance |
| PCAOB | Public Accounting Oversight Board |
| IIAM | Institute of Internal Auditors Malaysia |
| BRC | Blue Ribbon Committee |
| MIA | Malaysian Institute of Accounting |
| PLCs | Board of Public Listed Companies |
| AOB | Audit Oversight Board |
| SEC | Securities and Exchange Commission |
| IAFNV | Investment in Internal Auditing |
| AC | Audit Committee |
| ACC | Audit Committee Characteristics |
| ACIND | Audit Committee Independence |
| ACEXP | Audit Committee Expertise |
| ACMEET | Audit Committee Meeting |
| ACTEN | Audit Committee Tenure |

| | |
|---|---|
| ACINDX | Audit Committee Index |
| ACSIZE | Audit committee size |
| LEV | Leverage |
| SIZE | Firm Size |
| INVEN | Inventory |
| OCF | Operating cash flow |
| IAFOS | Internal Auditing Source arrangement |
| OLS | Ordinary Least Square |
| CEO | Chief Executive Officer |

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Following recent accounting scandals, deliberate manipulations and fraudulent activities of some corporations such as Enron, Worldcom, and Satyam that lead to accounting failure, internal auditing has increasingly became relevant as an important corporate governance mechanism (Carcello, Hermanson & Raghunandan, 2005; Coram, Ferguson & Moroney, 2008; Sarens & Abdolmohammadi, 2008). In response to these accounting failures, the Congress of the United States passed into law the Sarbanes Oxley Act of 2002 (SOX, 2002). This significantly affected several issues related to corporate governance and corporate financial reporting. Particularly, it pushed for more focus on internal controls and internal auditing. Hence, it is likely that a number of companies have shifted their concentration towards internal auditing during this period. In addition, the Public Accounting Oversight Board (PCAOB) asserted that an outstanding benefit of its standard on auditing an internal control is encouraging companies to invest in competent and objective internal audit function (PCAOB, 2004). Moreover, statistics show that internal audit budgets and number of internal audit staff grew by over 10 percent between 2001 and 2002 in the US (Carcello et al., 2005).

In a same token, internal auditing has become a very crucial component of global businesses. It is a vital constituent of the risk management, internal control structure of the organization (Anderson, Christ, Johnstone & Rittenberg, 2012). Internal auditing is carried out in different legal and cultural environments within organizations that differ in size, aim and structure, and also by the individuals within or outside the organization (Fadzil, Haron & Jantan, 2005). In a survey carried out by the Malaysian Institute of Corporate Governance (MICG), the Institute of Internal Auditors Malaysia (IIAM) and Ernst and Young asserted that internal auditors are in the best position to comprehend and articulate the business practices of the organisation and they serve as consultants to lessen risk. The main objective of the internal audit is to protect the rights and interests of stockholders. By evaluating governance, control and risk management, internal audit can help an organization to fulfil its goal or improve its firm performance (Carcello, Hermanson & Raghunandan, 2005).

The agency theory suggests internal and external corporate governance mechanisms that lead to a reduction in the conflicts between managers and shareholders and reduce the agency costs (Jensen & Meckling, 1976). One of such corporate governance mechanisms is the audit committee (AC). The audit committee is viewed as an essential self-regulatory internal governance instrument and is expected to provide an overseeing role over the entire process of financial reporting, particularly the working of the systems of internal control and the auditors' work (Blue Ribbon Committee (BRC), 1999; Hermanson & Rittenberg, 2003). The audit committee is expected to be familiar with the criteria to assess internal control like assessment procedures and source of information (Godwin-Stewart & Kent, 2006).

Audit committee characteristics such as independence, expertise, diligence and tenure are variables that warrant investigation for current research. Following the agency theory and resource dependency theory, the presence of members who are independent in an audit committee improves the audit committee effectiveness in performing oversight duties. Independent audit committee directors are viewed by the market as professional members who are willing to facilitate advice and counsel (Sori et al., 2008). Chang and Sun (2010) posit that members of the audit committee with financial accounting knowledge could improve the financial reporting quality. The members of the audit committee with accounting background enhance the ability of audit committee in curbing management involvement earnings management activities to cover self-interest behaviour. Furthermore, the frequency of audit committee meetings is perceived to lead to transparent accounting information (Kent & Stewart, 2008). Finally, the members of the audit committee that have served for a shorter time have a higher tendency to perform oversight role effectively (Sharma & Iselin, 2006) as they are expected to challenge management decision (Barua et al., 2010; Boker & Goodstein, 1993).

In a move to guaranteeing the quality of financial reporting, the role of effective and audit committee and internal audit system in enhancing the corporate governance framework and financial reporting outlook of the firm has been highlighted by the Securities and Exchange Commission (SEC) and discussed in academic research (Mat Zain & Subaramaniam, 2007). An effective internal audit system aid the audit committee with: assertions concerning control; independent assessment of accounting procedures and practices; risk and fraud analysis (Hermanson & Rittenberg, 2003). Internal auditing also serves as a prized asset for the audit committee to reach its financial reporting obligation (Bishop, Hermanson, Lapides, & Rittenberg, 2000). On the other hand, the audit committee is responsible for reviewing the plan for internal audit and making sure the scope of the internal audit activity is adequate. (Mat Zain et al. 2006). Moreover, Carcello et al. (2005) argue that an audit committee must exact some sort of control over the internal audit function to make sure whether the internal audit system plays effectively monitors and assists the audit committee in carrying out their duties. This may be done by exercising control over the organization's resources set aside for internal audit.

However, Claessens, Djankov and Lang (2000) in a survey of 238 Malaysian firms found out that 67.2% of shareholding wad in the hands of family members and their descendants. Hence, there is likelihood that family members will involve in selection process of audit committee directors who are less likely to challenge their decision, as suggested by Ket de Vries (1993). Moreover, A-Hamid, Mohammed Sori, and M-Nassir (1999) argued that audit committee in Malaysia is still developing and as a matter of fact require more time and effort in order to gain the confidence of all stakeholders. They also suggest that the ineffectiveness of the audit committee stems from its inability to carry out its traditional roles and duties as well as maintain its relevance technically with respect to the accounting and other aspects dealing with the psychology of the internal audit profession. Zulkarnain and Shamsher (2007) argued that many Malaysian audit committees only act as a 'rubber stamp' and are only formed to comply with the requirement of Bursa Malaysia, as the Bursa Malaysia makes it compulsory for all public listed companies to have an audit committee. Additionally, in 2009, Malaysian firms are obliged to report information on internal audit budget. Therefore, Malaysian setting is well-suited to investigate in details the relationship between audit committee characteristics and investment in internal audit, where data on internal audit budget is available and also, how well audit committee monitors the internal audit function is questionable.

A number of studies on internal audit have examined the association between the characteristics of the audit committee and internal audit function other than resources available to internal audit department (Mat Zain, Subramaniam & Stewart, 2006; Abbott et al., 2010). The current research extends the above studies by relating audit committee characteristics to internal audit budget. Moreover, the research extends existing works that have made use of primary data on internal audit function (Abbott et al., 2010; Anderson et al., 2012) by emphasizing secondary data to explore the hypothesized relationship Finally, this research bears some similarities to the existing work of Barua et al. (2010) who link audit committee characteristics to internal audit budget. The present research differs from theirs as it introduces a composite variable capturing several audit committee characteristics used by the research (i.e. independency, expertise, diligence, as well as tenure) in the form of an index and examines the index relationship with internal audit budget along with the other audit committee variables.

## 1.2 Problem Statement

Nowadays, firms are continuously improving their corporate governance practices, risk management and internal control because of growing ethical business practices, transparent financial reporting, cost management accuracy and corporate accountability. Internal audit is indeed very crucial to companies as it offers services to its management such as monitoring compliance with government regulation and company policy, testing internal control as well as preventing fraud. However, some companies perceive the internal audit function as a non-earning unit and thus give least importance to the department. It is therefore necessary to ask how much internal audit is enough, how much budget should be allocated to internal audit functions (Diamond, 2002).

In Malaysia, there are rising incidents of company mismanagement and failures, which indicates that there is immediate need of effective internal auditing in both public and private sectors (Ali, Saidin, Sahden, Rasit, Rahim & Gloeck, 2012). Examples include Transmile group Berhad, Genting Malaysian Berhad, and Tai Kwong Yokohama. Ali, Chen and Radhakrishnan (2007) highlighted the serious deficiencies and shortcomings of internal auditing of Malaysian companies. They argue that public and private institutions lacks efficient internal audit personnel, internal audit competence and that the Malaysian government fails to provide adequate support and assistance for internal audit functions.



The primary role of the audit committee is to enhance the credibility of published accounting numbers via overseeing the financial reporting process (Bradbury, Mak, & Tan, 2006). The Blue Robin Committee (1999) considers the following characteristics expected from members of audit committee to be more active and diligent in overseeing financial reporting process and internal control: independent, financially educate, and meet regularly (BRC, 1999). Researchers argue that the independency of audit committee members increases the reliability and accuracy of financial reports of a firm (Abbott et al., 2004; P M Dechow, Sloan, & Sweeney, 1995; McMullen, 1996). Moreover, financial experts with high degree of accounting background and experience are likely to understand accounting numbers and monitor the self-interest behaviour of controlling managers (Chang & Sun, 2010). The BRC (1999) suggests an audit committee to meet frequently to effectively perform its oversight responsibilities. In addition, audit committee members with shorter tenure are less likely to acquiesce to top manager's pressure (Barua et al., 2010; Boker & Goodstein, 1993) also perform boor monitoring role (Sharma & Iselin, 2006).

However, financial reporting issues have led to several debates over the inability or failure of audit committee to provide the required oversight. This has led to several parties clamouring for better explanation of the impact audit committee on the entire process of financial reporting (De Zort & Salterio, 2001). Owing to the severe financial crises of the year 2008, the need for good corporate governance and efficient audit committee has been felt strongly (Bedard & Gedron, 2010). Furthermore, the role of audit committee characteristics such as its independence, expertise, diligence in the form of meetings, and the tenure spent towards internal audit function and fiduciary obligations also gained prominence during this era (Puri, Trehan , & Kakar, 2010). Soh and Martinov-Bennie (2011) argue that audit committee and the internal audit unit be aligned with top management, so that their activities can be synchronised for the good of the organization It is therefore crucial to explore the possible association existing between the characteristics of the audit committee and internal audit budget in Malaysia where the audit committee is perceived to characterise the “form” but not the “substance” of operative mechanisms (Abdullah, Yusof, & Nor, 2010).

The independency of the audit committee members in Malaysian companies might also be doubtful, as the members are appointed by controlling managers who run the business (Abdullah et al., 2010). Academic researchers raise serious doubts on the appointment process of the independent members of the audit committee (Muhammad Sori, Mohamad Ramadili & Karbhari, 2009). Furthermore, in a study of Malaysian companies, Mohamad-Nor, Shafie and Wan-Hussin (2010) found out that barely 40% of the audit committee members had a background in accounting and finance. Frequent meetings by an audit committee of a Malaysian firm do not show any evidence of the extent of work done in course of the meeting (Shamsher & Zulkarnin, 2003). These attributes place a lot of doubt on the effectiveness of the AC of Malaysian companies.



Theoretically, prior studies have also looked at the role of audit committee characteristics in relation to audit fees (Abbott, Parker & Peters, 2003; Carcello et al. 2002), audit quality (Collier & Gregory, 1996), earnings management (Mohd Saleh, Mohd Iskandar & Mohd Rahman, 2007), audit report lag (Sultana, Singh, Mitchell & Van der Zahn, 2015; Hashim & Rahman, 2011), audit risks (Bliss, Muniandy, & Majid, 2007; Muniandy, 2007; Puan, 2009) and timeliness of corporate financial reports (Abdullah, 2006). The current study enriches the prior studies by exploring the influence of audit committee characteristics on internal audit budget.

### 1.3 Research Questions

The following research questions have been developed to accomplish the study:

1. What is the relationship between AC independence and investment in internal audit?
2. What is the relationship between AC expertise and investment in internal audit?
3. What is the relationship between AC meeting and investment in internal audit?
4. What is the relationship between AC tenure and investment in internal audit?
5. What is the relationship between AC Index and investment in internal audit?

### 1.4 Research Objectives

The broad objective of the study is to examine the relationship between audit committee characteristics and investment in internal auditing in Malaysia. The specific objectives of the study will include:

1. To examine the relationship between AC independence and investment in internal audit.
2. To examine the relationship between AC expertise and investment in internal audit.
3. To examine the relationship between AC meetings and investment in internal audit.
4. To examine the relationship between AC tenure and investment in internal audit.
5. To examine the relationship between AC Index and investment in internal audit.

### 1.5 Significance of the Study

The significance of current study stems from the fact that current study can contribute to internal audit and audit committee literature and practice in many ways. The present study offers empirical evidence from a developing country that may help in enriching the existing literature on internal audit as well as audit committee and understanding of the global configuration of the internal audit profession, especially in Malaysia where there is no study to the best of the researcher's knowledge that has investigated the association between AC characteristics and internal audit budget. Moreover, the present research will enhance the perceptions of organizers and policy makers to the role of the internal audit budget and AC characteristics in Malaysian environment, where the law enforcement to protect minority shareholders is suboptimal and role of internal audit function in enhancing the financial reporting process is still unknown.

The study of this issue is particularly important considering that the resources and backing the audit committee will need from the internal audit in place will depend largely on the quality of resources available such as expertise, diligence and independence these directors possess. It is therefore necessary to extend the academic research in the context of investment in internal audit (Harrison, 2015). Lastly, the study will be useful to academics and researchers whose area of interest is in audit committee and internal auditing particularly and financial reporting in general. The study brings to light the current issues and pinpoints area where further research can be carried out to enhance the quality of the audited accounting information amongst companies.

### 1.5.1 Theoretical Significance

Prior studies have looked at the role of audit committee characteristics in relation to audit fees (Abbott, Parker & Peters, 2003; Carcello et al. 2002), audit quality (Collier & Gregory, 1996), earnings management (Mohd Saleh, Mohd Iskandar & Mohd Rahman, 2007), audit report lag (Sultana, Singh, Mitchell & Van der Zahn, 2015; Hashim & Rahman, 2011), audit risks (Bliss, Muniandy, & Majid, 2007; Muniandy, 2007; Puan, 2009) and timeliness of corporate financial reports (Abdullah, 2006). The current research will extend the studies by empirically examining the potential association between audit committee characteristics and investment in internal audit function.

There is only one single study, to the best of the researcher's knowledge, which has investigated how the characteristics of the audit committee are related with the internal audit budget (Barua et al., 2010). The study has motivated the present research to be conducted. The current research differs from the study of Barua et al. (2010) in three ways. First, while they only related audit committee characteristics (i.e. audit committee expertise, audit committee composition, and audit committee meetings) to internal audit budget, this study relates audit committee variables and audit committee index to the investment in internal audit function. Second, while Barua et al. (2010) have conducted their study in the U.S., in which shareholding is commonly diffused and ownership is clearly separated from control, the current research is conducted in Malaysian context where stockholding is concentrated at hands of family members without clear separation of ownership and control. Finally, Barua et al. (2010) have utilized data from years 2001 to 2003 to conduct their research, while this study covers recent data (i.e. 2012-2014) to investigate the hypothesised relationships.



Methodologically, unlike previous studies relating the audit committee and the internal audit function that are largely survey based, making use of questionnaires to examine this relationship between the audit committee characteristics and internal audit (Abbott et al., 2010; Anderson et al., 2012), this research utilises secondary data to assemble a detailed explanation of how the internal audit system will be influenced by an effective and diligent audit committee. This study is considered to be one of the first investigating the association between the characteristics of the audit committee and internal audit budget in Malaysia and also serves as a basis for expanding the framework for future studies in other East Asian contexts.

### 1.5.2 Practical Significance

The study's findings have visible practical implications for enhancing the extent of corporate governance through ascertaining the inherent strengths and weaknesses in the relationship between audit committees and the internal audit function.



Next, the results from this study will provide a valuable input for the authorities (Bursa Malaysia and the Malaysian Institute of Corporate Governance (MICG)) to plan and design policies most suited for Malaysian public companies' internal audit. Further, the findings of the study support the suggestions of the Malaysian Code of Corporate Governance 2012 (MCCG 2012), that recommends that the board should set up an internal audit function which sends its reports straight up to the audit committee. The results also support the MCCG 2012 requirements in which Malaysian companies should disclose internal audit budget information on their annual report. The findings lend support to new amendment made by MCCG 2012 on audit committee. In addition the Global Institute of Internal Auditors can use this research to further improve their guidelines. Further, the market participants can use the results of this research to identify which factors should be considered when evaluating the financial reporting quality. Audit committee characteristics and internal audit function should be taken into consideration in evaluating process.

### 1.6 Scope of the Study

The aim of the study is to investigate the relationship between the characteristics of the audit committee and the investment in internal auditing in Malaysia. The study takes into consideration the Malaysian top 100 listed companies based on the 2014 market capitalization. The study period covers three years, 2012, 2013 and 2014. The reason for commencing with year 2012 was because it is considered as a recent year after Malaysian companies, in year 2009, are required to disclose information on internal audit function. Moreover, Malaysian Code of Corporate Governance has introduced new recommendations for audit committee in 2012. The reason for concluding with year 2014 is because it was the last year with available data as at the time this study was conducted.



### 1.7 Organization of the study

The other parts of the thesis is structured as follows: Chapter two discusses the theoretical concepts about audit committee characteristics and internal audit budget. Further it highlights the various approaches, theories, strategies and schools of thought related to internal audit and audit committee characteristics. This is followed by a discussion on the underpinning theories of agency theory in the same chapter.

Chapter three outlines the research framework, hypotheses development and explains the research methodology used in this study. The chapter also examines the sample selection, data collection, study period, the measurement of variables, and techniques of data analysis. Chapter four displays the descriptive statistics, and analysis of correlations, diagnostic tests, regression analysis, and sensitivity tests. Lastly, chapter five presents an overview of the study and provides a discussion of findings, implication, and limitation of the study. It also suggests possible areas for future research.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

The goal of this chapter is to review extant literatures on audit committee and internal audit function. Further, the chapter is structured as follows: Section 2.2 looks at the general overview of corporate governance and the development of corporate governance in Malaysia. Section 2.3 describes the functions of internal audit and reviews prior literatures on the investment in internal auditing. In section 2.4, prior studies on the characteristics of the audit committee (ACC), emphasizing the audit committee independence, audit committee meeting, audit committee expertise, audit committee tenure and audit committee index are reviewed. Section 2.5 discusses the possible impact of control variables on the investment on internal auditing. While Section 2.6 discusses the underpinning theory of the study, the chapter ends with a brief summary in Section 2.7.



## 2.2 Corporate Governance

The role of governance in disciplining management has been the topic of an active debate among regulators, corporate governance reformists and academics. Corporate governance is perceived as aiding in delineating the roles and duties of all categories of stakeholders in the organisation (Ho & Wong, 2001). Cadbury (1997) suggests that strong governance occurs if there is an appropriate level of monitoring in the company. Thus, the responsibility of corporate governance is to ensure the organisation's shareholders interest are safeguarded by overseeing and monitoring managers via several mechanisms of the corporate governance. In this regard, Tsui and Gul (2000) argue that corporate governance mechanisms are systems involving the standards of accounting and auditing that are set up to both keep track of managers and enhance the transparency of corporate information. Davis and Greeve (1997), Shleifer and Vishny (1997), and Chen et al. (2012) refer to corporate governance mechanisms as significant methods designed to force the management to act to ensure and protect the interests of the shareholders, which, in turn, leads to resolving the agency problem and minimizing its costs.

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 series of corporate failures, along with the financial fraud cases 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, 2008). 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 improve and reinforce corporate governance systems (Hashim & Devi, 2008). 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.



Comparable to other countries, Malaysia stimulates listed companies to engage in the best corporate governance practices. The important internal mechanisms for corporate governance debated in the Malaysia Code on Corporate Governance MCCG (2000, 2007, 2012) and Bursa Malaysia's Corporate Governance Guide (2007, 2009) are board of directors, audit committee, and internal audit function, according to their essential function in monitoring the process of financial reporting (Yatim et al., 2006; Mat Zain & Subramaniam, 2007; Che Haat et al., 2008).

With respect to the audit committee, the objective of MCCG 2000 was to bring to limelight the roles and responsibilities of the audit committee as parts of the roles highlighted in the rules. The MCCG 2000 brings out the responsibilities as spelt out under Bursa Malaysia listing conditions. The importance of a well set up audit committee in raising the corporate governance standards was stressed i.e. the effectiveness being contingent on the existence of an active chairman having the backing of the board, the auditors and the independent directors. One major issue the audit committee was asked to take care of was the problem arising as a result of the activities of dominant and controlling shareholders, also playing their role as non-executive directors in the organisation. These persons having vested interest in the financials of the company will serve as an effective tool carrying out the monitoring function and ensuring that management's interest are not at variance with the interest of the owners. It was therefore recommended that such group of directors should be inculcated into the committees (Malaysian Code of Corporate Governance, 2000).

Further, following the changes in the local and foreign business environments, there was the need to revisit the 2000 code of corporate governance to supplement and tighten the existing governance practices in corporations. It was mentioned in the 2008 budget speech by thee Prime Minister Dato' Seri Abdullah Ahmad Badawi that there has been a review of the MCCG 2000 in order to lift the existing quality exhibited by the board of directors of public listed companies (PLCs), by setting aside the requirements of directors to hold positions in the audit committee as well as strengthen the audit committee and the internal audit function. In order to attain PLCs audit committee efficiency and effectiveness, executive directors have been prohibited from taking up roles in the audit committee. Also it has become mandatory for all PLCs to set up an internal audit function and the board of directors have been given this role to ensure the organisation's stick to the scope of the internal audit finctions (Malaysian Code of Corporate Governance, 2000).

The MCCG was revised, in 2007, to provide for a better working of the board of directors and audit committee, and to certify that the two governance mechanisms effectively discharge their duties. Malaysian public companies, among other things, are compulsorily obliged to consist of audit committee members with a mix of 2/3 independent directors and at least one of this mix should be an active member of an accounting association or body (Revised MCCG 2007). The Audit Oversight Board (AOB) was established by Security Commission in April 2010 to enhance the reliability and credibility of financial reporting process in Malaysia. In 2012, the Security Commission comes up with a new revision of the code to achieve excellence in corporate governance through reinforcing the responsibilities of the board and audit committee members (Revised MCCG 2012).

Moreover, the revised MCCG 2012 emphasized the need for reviewing and monitoring how suitable and independent the external auditors are as the auditor's independence can be distorted negatively when they embark on non-audit services with the company. It is the duty of the audit committee to obtain an assurance duly endorsed by the external auditors clearly stating that they have maintained high level of independence and professionalism in the conduct of the audit assignment in line with the conditions specified in regulatory and professional requirements. Also, regarding the internal audit function, the board should identify a head, who will head the chain and brief the audit committee directly. This individual is therefore required to show a high degree of responsibility and have the necessary and relevant qualifications as the duty for providing assurance to the board lies with this person.

## 2.3 Investment in Internal Auditing

Financial reporting problems exhibit more risks related to the financial report or its complexity and thus require internal monitoring (Carcello et al., 2005). An effective internal audit function is  a major part of the foundation of internal corporate governance monitoring mechanisms, alongside the board of directors and the audit committee, which contribute towards the quality of corporate governance, through its oversight role (Coram et al., 2008; Prawitt et al., 2009; Soh & Martinov-Bennie, 2011). In order to improve the function of internal audit, internal auditors must possess a suitable degree of experience and communication competence (Gramling & Hermanson, 2006). The Institute of Internal Auditors Attribute Standards stipulates that internal auditors should have skills, knowledge, as well as other competencies considered necessary to effectively fulfil their duties (IIA, 2005; 2008). It is important for the internal audit function to be adequately detailed to carry out its monitoring role and contributions in the area of corporate governance. Hence, for the internal audit function to be sophisticated it should have greater resources to enhance the competence and cognitive abilities for the internal auditors; and increase the ability to access the complexities of the independent firm that has as its specialty provision of audit services. All these highlight the need for investment in the internal audit function to improve its effective monitoring role.

The costs incurred (investment) for the internal audit function typically comprise manpower, training, out-sourced service provider and travelling. Malaysian Corporate Governance Code (2012) requires that listed companies to disclose the incurred costs for the internal audit over the financial year. As such, it could be perceived that the financial resources are crucial for enabling an effective internal audit function.



The investment in the internal audit function enhances the competence of all those who work in the department of internal audit, which, in turn, helps companies to set up a firm control in the course of financial reporting and improve the effectiveness of the internal audit activities. This eventually may result in a reduction in the existence of the control problems (Lin et al., 2011). Ge and McVay (2005) posit that the strength of internal control is usually related to sufficient resources being allocated to internal audit department. Thus, internal audit resources and capabilities make it possible for internal auditors to acquire a better understanding of their roles in corporate governance; and assist top management in their corporate governance roles (Schneider, 2008). Moreover, Carcello et al. (2005) document that a company that faces significant risks will increase the effectiveness of the internal audit monitoring through greater commitment to the internal audit function. As such, the company would therefore require monitoring of the internal audit and would possess the financial will power to invest in such a venture (Carcello et al., 2005).

Some related empirical studies are available. For instance, Wallace and Kreutzfeldt (1991) utilized the US audit firms and found that internal auditing is significantly related to client characteristics including presence of audit committee, industry, financial condition and size. Sarens and Abdolmohammadi (2011) suggested some determinants of internal audit function size. They found that number of reporting levels, ownership structure and firm size are crucial factors determining how big the internal audit function is in Belgian firms. Similar study conducted in company by Gronewold and Heerlein (2009) shows that decentralization of industry and internal auditing, variety of audit assignments covered by the internal audit, importance of the capital market for the company and company size are the significant factors effecting internal audit staff capacity. A study by Carello et al. (2005) is also available regarding the determinants of investment in internal auditing. The study revealed that industry type, operating cash flows, inventory intensity, leverage and company size are positively associated with internal audit budgets.

There is only one study available in previous academic literature which has ensured the association existing between Audit Committee Characteristics and investment in Internal

Audit (Barua et al., 2010). Barua et al. (2010) analyzed a sample of 181 US listed firms and provided evidence that investment in internal audit is inversely related with audit committee tenure and audit members' expertise, but positively related to AC meetings. The current research extends Barua et al. (2010) study by introducing a composite index as an aggregate variable to proxy for the audit committee effectiveness. It also considered as a first attempt investigate the association existing between audit committee characteristics and internal audit budget in Malaysian context.

## 2.4 Audit Committee Characteristics

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 securities commission (SC) introduced the establishment of audit committees back in 1993. Since 1994, the Bursa Malaysia has required 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 revised MCCG (2007) recommends 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 revised 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.

Parker (1992) perceived 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.



According to the agency theory, audit committees are crucial mechanisms that ensure that the agent is working to increase the wealth of all shareholders. The role of the audit committee in the internal corporate governance is to minimize the information asymmetry that could in turn, result in decreased agency problems. More importantly, investors make use of corporate financial statements as their source of financial information. However, it is suggested that audit committees should possess some crucial characteristics, such as independent members, sufficient size, expert members, and frequent meetings, to perform its duties more effectively (DeZoort et al., 2002).

Hashim and Rahman (2011) suggested that audit committee expertise and its independence are key factors that can remove lag and thus enhance timeliness. Additionally, Turley and Zaman (2004) pointed out that effective audit committee's oversight protects the interests of shareholders in light of financial reporting, external auditing activity and internal control. Bedard and Gendron (2010) documented that financial reporting quality is impacted by independence, competency, size and number of meetings of the audit committee.

### 2.4.1 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 factor that determines the efficiency of the committee in the course of the financial reporting process. Beasley (1996), Xie et al. (2003) and Bédard et al. (2004) define an independent non-executive director as a member who does not have an association with the organisation except for the singular fact of being a member of the board.



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 truly independent. This recommendation is in line with the advantage of having non-executive directors, who could find solutions for the problems of inconsistency among internal managers and mitigate the conflict between internal managers and shareholders (Fama & Jensen, 1983).

Generally, how independent the audit committee is has been extensively investigated in several previous research. While there is limited literature investigating audit committee independence with investment in internal audit, there are a number of research works that have investigated the association existing between audit committee independence and earnings management practices, earnings quality and financial reporting as well. 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 WanHussin (2010); Siagian and Tresnaningsih (2011); Hamdan et al. (2013); Baccouche et al. (2013); Amar (2014); and Salleh and Haat (2014).

Focusing on the literature of the association existing between the audit committee independence and earnings management, Amar (2014) and Salleh and Haat (2014) pointed out that the proportion audit committee personnel that are independent is found to exhibit a negative effect on earnings management. Similarly, Klein (2002) documented that the independence of the audit committee is inversely related with earnings management. Klein (2002) argued that independent directors operating in the audit committee are in the best position to be good monitors for the process of financial reporting quality; since they can resist the stress of management to undertake earnings manipulation.

Moreover, Xie et al. (2003) provide evidence showing that there is a slim chance of earnings management occurring in companies whose audit committee include non-executive directors. The authors argue that since it is the responsibility of the audit committee to monitor the entire financial reporting process, having non-executive members is related with the ability of the committee to monitor the management self-interest action. Similarly, Klein (2002) found a negative association between the independence of the audit nd abnormal accruals. Furthermore, Bédard et al. (2004) showed that when 100% of the members are independent, there is a significant decrease in the possibility of a destructive earnings management.

Regarding literature on audit committee independence and earnings quality, Bradbury et al. (2006) reported that an independent audit committee is associated with greater earnings quality. Their results explain the reasons why the efficacy of audit committees will be increased when they comprise independent directors, which agrees with the voice of regulators clamouring for more independent audit committees. Further, the study of Siagian and Tresnaningsih (2011) found that the quality of earnings reporting can be improved 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. However, Hamdan et al. (2013) and Lin et al. (2006) found no associations between audit committee independence and the quality of earnings.

In the literature on audit fees, Vafeas and Waegelein (2007) and Carcello et al. (2002) provide evidence revealing that the independence of the audit committee directors as a positive association to audit fees, agreeing with the view that the audit committees assist the work of the external auditors in ensuring that the actions of management is monitored as well as the entire financial reporting process. Similarly, Abbott, Parker, Klein (2003) found that audit committee independence, measured as an audit committee consisting absolutely of independent directors not holding any executive positions was found to be moving in the same direction with the audit fees.

### 2.4.2 Audit Committee Expertise

As is the case with audit committee independence, expertise is generally regarded as a critical characteristic for an audit committee's effective operation (Baxter & Cotter, 2009). The MCCG requires for the directors of the audit committee to possess knowledge in financial matters and a minimum of one director must be associated with a professional accounting body (Revised MCCG, 2007). Furthermore, the Corporate Governance Guide (2009) define financial literacy of audit committee directors as the capability to read and make sense of the financial reports, the capability to criticise the reports and raise significant queries about the company's activities on internal controls and risk factors, and capability to recognize and understand the using of accepted standards of 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 resource dependence theory, which posits that the directors' responsibility as a basis of counsel and guidance for the Chief Executive Officer (CEO) is significant in providing appreciated means to 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.



Barua et al. (2010) found that internal audit budget decreases as the number of financially expertise directors in AC increases. Reviewing the studies on audit committee financial expertise and its relationship with managing earnings, Xie et al. (2003) reported an inverse relationship between other non-accounting financial experts (e.g. corporate or investment banking backgrounds) and practices of earnings management. Similarly, Bédard et al. (2004) concluded that an audit committee comprising a minimum of one director with financial and governance expertise will surely lead to a reduction in the practice of managing earnings. The results support the SOX Act's assertion that financial expertise is a significant characteristic of an audit committee to undertake its responsibility in ensuring all activities involved in the process of financial reporting are monitored. Further, the findings also largely support the assertions of the Blue Ribbon

Committee (BRC, 1999) in that that audit committee personnel with financial expertise are more likely to perform an active role.

Moreover, Xie et al. (2003) also provided evidence supporting the position that an audit committee with adequate background in financial matters will also lead to lesser earnings management. Similarly, Badolato, Donalson and Ege (2014) documented that audit committees knowledgeable in financial matters provide for a reduced levels of earning management as measured by abnormal accruals. In Malaysia, Salleh and Haat (2014) reported a negative but insignificant relationship existing between audit committee financial expertise and earnings management. They attributed the result to the existence of audit committee directors with accounting expertise after the revised MCCG (2007) that led to lessening the earnings management although the result is not significant.

In earnings quality literature, Dhaliwal et al. (2006) found out that an audit committee with accounting expertise is positively related to earnings quality. However, for the finance and supervisory experts in the audit committees, there is an insignificant relationship between their presence and earnings quality. In addition, Carcello et al. (2006) found that for companies with weak overall governance framework, an audit committees with accounting and financial expertise leads to a higher level of earnings quality. They indicated that the advantages of good oversight by the audit committee's accounting/financial knowlege may directly increase the improvement of financial reporting quality. The finding is in line with extant work of Baxter and Cotter (2009) who found that higher quality of reported earnings is related to audit committees that comprise accounting experts. However, Lin et al. (2006) and Mohammed Ali (2006) found no associations between the audit committee financial expertise and the quality of earnings. Their results suggest audit committees with financial experts fail to prevent the occurrence of earnings management and improving earnings quality.

In financial fraud context, the studies of Abbott et al. (2004) and Huang and Thiruvadi (2010) provide evidence that an audit committee that comprises a minimum of one individual with financial knowledge is significantly and negatively associated with the restating of financial reports. Their findings explain that financial experts possess the capability to comprehend and make sense of basic financial statements, understand the issues related to auditing and risks and the suggested ways to detect these problems and risks. On the other hand, among other things, Lin et al. (2006) showed that there is no relationship between audit committee expertise and earnings restatements. One possible reason for investigate findings is that their study 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 data.

Prior research have also investigated the association existing between audit committee expertise and audit fees (Vafeas & Waegelein , 2007; Abbott et al., 2003; Goodwin-Stewart & Kent, 2006). Vafeas and Waegelein (2007) as well as Goodwin-Stewart and Kent (2006) provide evidence showing audit committee with financial knowledge is positively related with the amount of audit fees. The study show evidence supporting the complementary hypothesis argument that in the monitoring of the organisation's management, the audit committees can be used in lieu of the external auditors. Similarly, Abbott et al. (2003) found that an audit committee comprising a minimum of a member with knowledge in financial reporting has a positive relationship with the fees paid to the external auditor.

### 2.4.3 Audit Committee Meetings

It is argued that the effectiveness of AC in performing its duties depend on the frequency of meeting held amongst audit committee members (Farber, 2005). When the meeting is held frequently, more company' issues, including risk profile issues, can be discussed in detail and decisions made (Abbott, Parker, Peters & Raghunandan, 2003). Conger, Finegold and Lawler (1998) indicated that frequent board meeting is likely to improve the board functions.



Furthermore, as the board agrees on the charter of the audit committee, the board can influence the rate at which the committee meets and the duties of the committee. Therefore, the more the board of directors' meetings, the more the audit committee will also meet in order to discuss the issues related to the financial report and other issues indicated by the board (Xie et al., 2003). Saleh et al. (2007) pointed out that audit committee directors who have financial expertise and attend meetings will improve how effective the audit committee is in increasing the quality of the financial report.

Audit committee meetings was operationalized in the literature as the number of times the audit committee met in the course of the financial year. Using the audit committee meetings to stand in for audit committee diligence, Xie et al. (2003) disclosed an inverse association between the committee diligence and qualified audit report. In similar vein, Farinha and Viana (2009) documented that the more diligent the audit committee is the lesser will be the chances of the company receiving modified audit opinion. Moreover, Pucheta-Martinez and Fuentes (2007) concluded that the company with higher audit committee meetings reduces the possibility of the company receiving a qualified audit opinion. Barua (2010) found positive relationship between AC meetings and investment in internal auditing.

Existing studies have investigated the association between the number of times the audit committee meets and the quality of earnings (Xie et al., 2003; Lin et al. 2006). Xie et al. (2003) found evidence revealing that the more the times the audit committee meets the lesser will be the discretionary current accruals. However, Lin et al. (2006) failed to show a significant association between the diligence of audit committee and earnings quality.

A review of audit fees literature show that there is no evidence of a relationship between audit committee meeting and audit fees (Abbott et al., 2003; Goodwin-Stewart & Kent, 2006). In the contrary, Goodwin-Stewart and Kent (2006) provided empirical evidence that more frequent audit committee meetings is associated with higher audit fees. This finding is in line with complementary hypothesis allegation that an active audit committee, to provide more assurance about financial reporting quality, is more likely to hire a high quality external auditor with higher audit fees.

### 2.4.4 Audit Committee Tenure

There are two contradictory views with respect of the effectiveness of audit committee tenure. Boone, Khurana and Raman (2008) argued that a long-term relationship with client is crucial for the audit committee to understand specific knowledge about the client's accounting system, internal control, operations as well as the client's industry features. Furthermore, Deis and Giroux (1992) and Copley and Doucet (1993) posited that a long audit committee tenure improves the audit quality performed by external auditors. Shafie, Wan Hussin, Md. Yusof and Md Hussain (2009) provided empirical backing that audit committee tenure is positively related to the auditor reporting quality as a clean audit report will be issued with long tenure of engagement with the same audit committee.

In addition, Dezoort, Hermanson and Houston (2003) suggested that future research to address how audit committee members tenure affects overall audit committee effectiveness. Yang and Krishnan (2005) found evidence revealing that earnings management has a lower tendency of occurring with more time spent by the audit committee members. Similarly, Dhaliwal, Naiker and Navissi (2010) also provide evidence that shorter tenure of the member of the committee with knowledge in financial matters is related to lower quality of accruals. These findings indicate that an audit committee with less tenure members is less effective in attenuating earnings management activities and enhancing earrings quality.

In audit literature, Chan, Liu and Sun (2012) examined the relationship between the tenure of independent audit committee members and audit fees. The study found a negative association for firms with more board members spending time in the audit committee. The result suggests that auditors attach a price to the experience gained from more time spent serving in the committee. The result further suggests that the longer the time spent on the audit committee the lower the demand there will be for audit effort.

However, Li (2010) also argued that audit committee tenure threatens auditor independence, especially in smaller firms. Rickling (2014) concluded that too long a service on the committee have a strong tendency of making audit committee members less vigilant or more permissive of earnings management. Similarly, the results of Sharma and Isselin (2012) showed an affirmative relationship between the time spent by the independent members serving on the audit committee and misstatements of the financials which suggests that directors that have served for a longer time might have their judgement impaired and not be truly independent. In internal audit studies, Barua (2010) provide evidence showing a negative association between average audit committee tenure and investment in internal audit.

### 2.4.5 Audit Committee index

Recently, a number of studies on corporate governance have been motivated to use composite indexes to evaluate the quality of governance mechanisms (Gul, Srinidhi, & Ng, 2011; Jiang & Anandarajan, 2009; Lara, Osma, & Penalva, 2007; Pergola & Joseph, 2011; Yu, 2011). The common conclusion from these studies is that composite indexes can take into cognisance the ability of corporate governance mechanisms to improve the quality of earnings. It has been argued that traditional methods of measuring how effective the audit committee is, such as (e.g audit committee independence, audit committee expertise, audit committee meeting and audit committee tenure) do not guarantee an effective audit committee as these variables are complementary to each other and taking one variable and ignoring the other will render it ineffective (Connelly, Limpaphyom, & Nagarjan, 2012; Lara et al., 2007).

A review of related studies highlight that extant studies have developed an index as an aggregate measure of the effectiveness of the audit committee. Zaman, Hudaib and Haniffa (2011) defined their audit committee index as consisting of audit committee independence, expertise, diligence and size. They investigated the association between the effectiveness of the audit committee and audit fees. The study found that the effectiveness of the committees was usually associated in more monitoring which of course involves a wider scope and more audit fees. Furthermore, Lisic (2014) developed an index for audit committee using six characteristics: the audit committee size, frequency of meetings, has a chair with management expertise, more members knowledgeable in financial matters, holds other board positions, and has stayed longer in the board. The study results demonstrated that auditors provided tax services are less likely to indulge in earnings management activities through tax expense when audit committee effectiveness increases.

Observably, the existing literatures indicate limited empirical studies on the existing relationship between audit committee characteristics and internal audit budget (to the best knowledge of the researcher). Though there is only one study that investigates how audit committee characteristics of U.S companies influence the resources available to internal audit department (Barua et al., 2010), no study that yet to investigate the relationship between audit committee index and the commitment towards internal audit. In other words, the current research intends to extend the prior research and fill the gap by taking a look at the positive effect of audit committee characteristics along with audit committee index on internal audit budget in Malaysia, where the protection of minority shareholders is relatively low and audit committees have suboptimal monitoring role.



## 2.5 Control Variables

There are many factors that could affect investment in internal audit. These factors that are not the focus of this study but serve as controlling variables. The factors include audit committee size, leverage, inventory, operating cash flow, firm size and internal audit sourcing arrangement. These control variables are incorporated in the current research's models because they were found by previous studies t significantly affect investment in internal audit or internal auditing budget (e.g. Al-Rassas & Kamardin, 2015; Alzeban, 2015; Barua et al., 2010; Carcello et al., 2005; Zhang et al., 2007). Therefore, if these factors are not controlled for, it would probably lead to bias in the ultimate outcome of the models that addresses the direct relationship between the characteristics of the audit committee and investment in internal audit.

The debt profile of a company creates the urgency for better monitoring of the company for the benefits of debt holders (Chow 1982; Francis & Wilson, 1998). Although, catering for debt holders is outside the purview of the board of directors, they will ensure that the managers possess a good relationship with the debt holders such as bank who also have a key role to play. It is therefore assumed that the higher the debt profile, the greater the tendency of the board to invest in internal audit function. Carcello Hermanson & Raghunadan (2005) reported that the greater the percentage of debt the higher will be the investment in internal audit function.

Also, in response to accounting scandals and East Asia financial crisis, Bursa Malaysia demands that public companies should set up an audit committee that is composed of at least three directors. This implies that the audit committee size shows its ability to fulfil its governance duties (Anderson, Christ, Johnstone & Rittenberg, 2012). This characteristic of the audit committee provides a view of the organization's commitment to establishing effective corporate governance system which manifests in a greater investment in internal audit function.

As for firm size, Carcello et al., (2005) pointed out that large firms invest more in internal audit function. Also, the results of previous research indicate a positive association between the size of the firm and internal audit budget (Abbott et al., 2010; Goodwin-

Stewart & Kent, 2006; Anderson et al., 2010). Consequently, the study predicts a positive association between the size of the firm size and investment in internal audit.

Another issue that may have influence on the internal auditing budget is the issue of sourcing arrangement of internal audit function, which has received more attention in the audit literature (Rittenberg and Covaleski, 1999). The quality of internal audit services provided by third-party is considered to be at least as high as that of internal auditing performed in-house (Glover, Prawitt & Wood, 2008). Further, Barr and Chang (1993) highlighted the benefits of outside internal audit providers that comprise a higher perception of independence, flexibility, saving cost and improving the overall quality. Therefore, it is expected that firms with outsiders performing internal audit services to invest less in internal audit. Prior research documented that outsourcing of internal audit function is negatively related to the internal audit budget (Carcello et al., 2005; Anderson et al., 2012; Barua et al., 2010).



Invention ratio has been used by literature to proxy for complexity for operations (Abbott et al., 2010). It has been argued that the need for better monitoring by an effective internal audit increases with firm complexity (Ramamoorti, 2003). The results of Carcello et al., (2005) show that the firm complexity has a positive association with the investment in internal audit function. Finally, extant works provided empirical evidence that operating cash flow is positively related to internal audit budget (carcello et al., 2005; Abbott et al., 2010).

## 2.6 Underpinning Theory

The underpinning theory for this research is the agency theory. The agency theory was chosen in the study because it predicts the impact of organizational changes on internal audit effectiveness (Adams, 1994), and have been unitized in academic literature (Sarens and Abdolmohammadi, 2011).

### 2.6.1 Agency Theory

The agency posits that the separation of ownership from the control of the organization encourages managers to maximize their benefits and pursue interests at variance with the desires of the shareholders (Jensen & Meckling, 1976). The shareholders lack accesses to all relevant information necessary to assess what the managers are doing (Evans & Weir, 1995). The problem if not addressed adequately could lead to conflicts such as differing objectives as the main concern of the shareholders is to ensure maximum wealth, while on the other hand, managers have various psychological and economic needs ranging from higher salaries and emoluments to power enrichment. It is therefore important that the owners ensure that control is enforced to alleviate the information asymmetry and conflicts between the owners (shareholders) and mangers (agents) (Fama & Jensen, 1983).

A major source of the agency problem in Malaysia is the concentration of the ownership. As against the ownership structure in the UK and US, with highly disperse shareholder network, the Malaysian case is characterised by shares being domiciled in the hands of a closed group who often possess a long term relationship with the company (Abdul

Rahman & Mohammed Ali, 2006). In some cases they could comprise of the founding families of the company or a small cluster of shareholders such as banks or government (Claessens, Djannklov & Lang, 2000). The concentrated ownership leads to the domination of minority shareholders by the majority group, a term referred to as tunnelling (La Porta, Lopez-de-Silanes & Schleifer, 2000).

Prior studies suggest effective corporate governance framework to solve the agency problems (Akhtarruddin, Hossain, Hossain & Yao, 2009; Fama & Jensen, 1983). Corporate governance has focused on identifying the procedures that apply to decisions regarding shaping the relationship among board of directors, shareholders and managers alongside resolving the agency conflicts (Gill, 2008). Examples of the internal governance mechanisms available to reduce agency costs are the audit committee and internal audit function. Both mechanisms are responsible for overseeing financial reporting process, which eventually may lead lower information asymmetry. The association existing between the internal audit function and the audit committee is brought under light in academic works, with a working committee amplifying the position of the internal audit and the internal audit function assisting audit committees in disallowing financial misstatements (Krishnan, 2005; Verschoor, 2002). Moreover, researchers have made assertions that the association between the audit committee and internal audit function, in situations when there is likelihood of hiding significant information by majority shareholders, is significant (Raghunandan, Read, and Rama, 2001). Carcello et al., (2005) suggest the audit committee to monitor and control internal audit function to ensure the internal audit function provides valuable assistant to the audit committee. The most effective way the audit committee exercises control over the internal audit function is to monitor the inflow of resources utilised by the internal audit function (Barua et al., 2010; Carcello et al., 2005).

The potential relationship that exists between audit committee characteristics and internal audit budget can also be described from complementary and substitution hypothesis prospective. From complementary hypothesis prospective, there is a higher tendency for a working audit committee to request for greater assurance in order to achieve higher financial reporting quality. As such, firms with a working audit committees may be required to invest more in internal audit function to send a sign to external users the firms possess effective internal governance mechanisms and report higher quality financial information. Sarens, De Beelde, and Everaet (2009) found the audit committee and internal audit function to have complementary role within firms' governance system. Moreover, Sarens, Abdolmohammadi, and Lenz (2012) pointed out the effectiveness of internal audit function increases when the resources coming into the audit committee is taken into consideration in planning the audit. On the other hand, the substitution hypothesis argues that bringing in an efficient will have a resultant positive effect on the internal controls of the firm and, therefore, reduces the need for assurance provided by internal auditors (Barua et al., 2010). Because of the monitoring activities of audit committee, the resources available to an internal audit department may be minimal.

**2.7 Summary of the Chapter**

This chapter briefly discuss about corporate governance, the importance of corporate governance. Moreover, the efforts and initiatives have been done by Malaysian government towards developing a corporate governance framework and boosting the confidence of shareholders in Malaysian capital markets have also been reviewed. The chapter has reviewed literature on internal audit function and audit committee characteristics. It also discusses the possible underpinning theories that can be adopted in the current study to link AC characteristics to internal audit investment.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

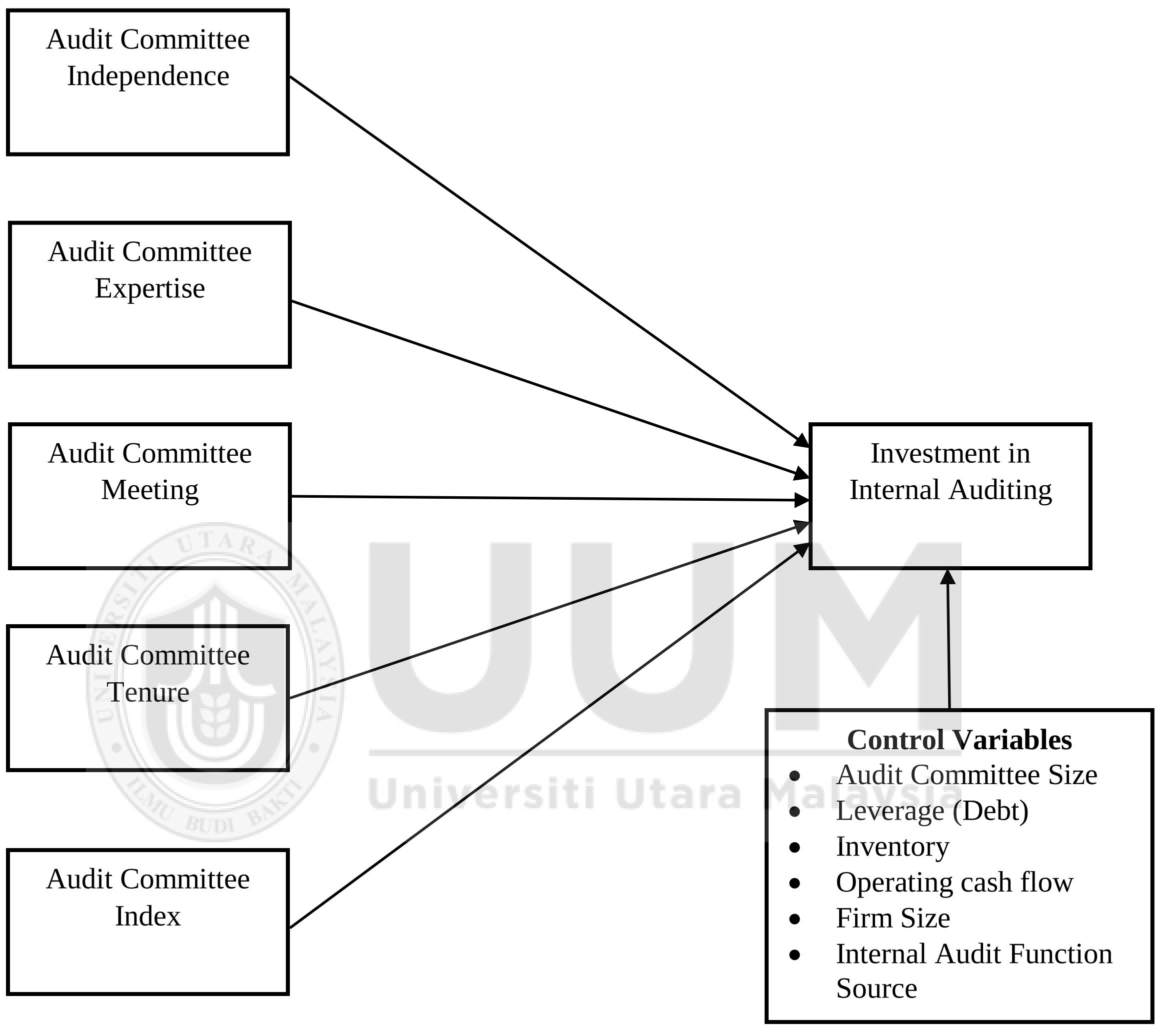
The purposes of this chapter are to develop testable hypotheses and disuse the methodological aspect of the study. The rest of this chapter proceeds as follows. Section 3.2 depicts the research framework. Section 3.3 develops the hypotheses. While Section 3.4 describes the data collection procedures, Section 3.5 deals with how the sample is selected. Section 3.6 presents the measurement of dependent, independent and control variables. While Section 3.7 provides a discussion on the analytical procedures undertaken to test the hypotheses, Section 3.8 present the research model. The chapter ends with brief summary and conclusion in Section 3.9.



## 3.2 Research Framework

The research framework shown in Figure 3.1. The figure explicates the relationship between the independent variables and dependent variable. Audit committee mechanisms (audit committee independence, expertise, meeting and tenure) and audit committee index are the independent variables while investment in internal auditing is dependent variable in the study. Moreover, factors such as firm size, leverage, inventory, audit committee size, operation cash flow and internal audit Source arrangement are controlled for in the study. These control variables have been found to have an effect on the internal audit budget. The potential underpinning theories for the research framework were discussed in the chapter two.

Figure 3.1: *Research Framework Author's Own Demonstration*



## 3.3 Hypotheses Development

### 3.3.1 Audit Committee Independence and Investment in Internal Auditing

The independence of the audit committee members is a crucial characteristic that influences the efficiency of the committee in overseeing the process of financial reporting. According to Sharma and Iselin (2006) and Al-Mamun et al., (2014), audit committee should be composed of multiple independent directors because they are care about their reputation and prestige. Moreover, Ye, Carson, and Simnett (2011) argue that independent audit committee members are keystone for the process of financial reporting as they improve on the overall quality of the firm's financial statements. Prior studies indicate that the independence of the audit committee improves the financial information quality through mitigating earnings management activities (e.g Siagian & Tresnaningsih, 2011; Mohd Saleh et al., 2007; Bradbury et al., 2006; Amar, 2014; Salleh & Haat, 2014).

Consequently, there are two competing views concerning the potential relationship between the independence of the audit committee and internal audit budget. Proponents of complementary Hypothesis argue that directors in the audit committee that are truly independent may seek for more assurance for financial reporting process as they are more interested in building up their reputation and avoiding litigation risk (Barua et al., 2010). Therefore, a positive relationship between the independency and internal audit budget is expected. Audit fees literature suggest firms with effect audit committees would push for a higher audit quality to effectively monitor the process of financial reporting (e.g Abbott et al., 2003; Carcello et al., 2002; Vafeas & Waegelein, 2007).

On the other hand, opponents of complementary hypothesis consider audit committee with independent directors as effective governance system that can monitor the laid down internal control mechanisms and process of financial reporting. Therefore, there would be less need for a detailed assurance service from the internal auditor (Sarens et al., 2011) and also the relationship between the independency of the audit committee and internal audit is expected. Because of these two competing arguments, the following non-directional hypothesis is stated:

***H1:*** *There is relationship between Audit Committee Independence and the investment in internal auditing.*

### 3.3.2 Audit Committee Expertise and Investment in Internal Auditing

In addition to audit committee independence, expertise is generally regarded as a critical characteristic for an audit committee's effective operation (Baxter & Cotter, 2009). Researchers argue that investors are attracted towards firms which comprise of higher number of financial and accounting experts in the audit committee. This is due to audit committee directors with such expertise have capability to analyze financial statements and to recognize and understand the using of accepted standards of accounting (Carcello, Hermanson, & Ye, 2011). Schimdt and Wilkins (2012) posit that financial experts in audit committee provide significant value to customers by eliminating deceitful activities from the organization. The Sarbanes Oxely Act (2002) made it mandatory for US listed companies to include a minimum of one member with financial reporting knowledge in the audit committee. Moreover, the MCCG (2012) required Malaysian companies to have an audit committee with a minimum of one member who should be an active member of Malaysian Institute of Accounting (MIA).

In another related study, Persons (2009) asserts that there is a stronger tendency for independent members in the audit committee with a background in financial reporting to discover anomalies in the financial reports or fraudulent manipulations as they would strive to attain this in order to satisfy their professional acceptable codes of ethics and permissible behaviour so as to maintain their reputation. Extant literature document that audit committee with a vast background in financial matters ensures a better earnings quality (e.g Baxter and Cotter 2009; Carcello et al., 2006; Dhaliwal et al., 2006) and attenuate earning management activities (e.g Badolato et al., 2014; Salleh & Haat, 2014; Bédard et al., 2004). These results are in tandem with the agency theory argument that posits that the existence of a financial expert in the audit committee reduces the likelihood of agency-principal conflicts and enhance the quality of financial reports.

However, there are two competing arguments on how an audit committee with a background in financial reporting may exert their influence in the resources available to internal audit department. Proponents of complementary hypothesis argue that such an audit committee with accounting expertise, in order to protect their reputation, are more vibrant in safeguarding and keeping watch of the financial reporting process (Persons, 2009). Since audit committee directors with accounting expertise are more likely to understand accounting figures and uncover management fraud, the presence of such members the audit committee may result in more work for the internal audit function

(Barua et al., 2010). Extant studies provide evidence of firms which comprise of audit committee members with accounting background and therefore solicit more quality audit quality and, therefore, will need to pay more fees (Vafeas & Waegelein , 2007; Abbott et al., 2003; Goodwin-Stewart & Kent, 2006). Therefore, a positive association between audit committee expertise and internal audit budget is expected.

Advocators of substitution hypothesis argue that accounting expert members in an audit committee improves the effectiveness of the system of internal control and quality of financial report. Therefore, the presence of such members in the audit committee may minimize the need for more assurance provided by internal auditors. Zhang, Zhou and Zhou (2007) and Hoitash, Hoitash and bedard (2009) assert that situations where there exists members with expertise in accounting domiciled in the audit committee, there is bound to be fewer cases of internal control problems, suggesting that further commitment to the internal audit function might not be necessary. Moreover, Barua et al. (2010) provided empirical evidence that internal audit budget decreases as the number of audit expertise directors in audit committee increases. Given these two competing viewpoints, this study states the following non-directional hypothesis:

***H2:*** *There is relationship between Audit committee expertise and investment in internal auditing**.***

### 3.3.3 Audit Committee Meeting and Investment in Internal Auditing

Theoretically, the agency theory posits that the agency conflicts between principal and agent can be addressed through increased activity by the audit committee (Kent & Stewart, 2008; Li, Mangena & Pike, 2012). The greater frequency of audit committee meeting allows for better liaison between the members of the audit committee and external auditors, thereby making the audit committee to be more effective (Zaman et al., 2011; BRC, 1999). Moreover, when the meetings are held frequently, more issues such as risk management, internal accounting controls and financial reporting process can be discussed in detail (Abbott et al., 2003; Saleh et al., 2007; Rashidah, 2006). Prior studies found that such organisations with frequent audit committee meetings to indulge less in earnings manipulating activities. They also pointed out that meeting frequently by the audit committee reduces the possibility of receiving a qualified audit opinion (e.g Pucheta-Martinez & Fuentes, 2009; Farinha & Viana 2009; Xie et al., 2003).



However, there are two contradicting arguments on the relationship between audit committee meeting and the investment in internal audit function. Proponents of complementary hypothesis argue that a diligent audit committee (i.e the committee that meets frequently) is anticipated to support the internal audit activities as it is more focussed on the internal control procedures in place and the process of financial reporting (Raghunandan & Rama, 2007; Barua et al., 2010). Barua et al., (2010) and Anderson et al. (2012) posits that an audit committee with frequent meetings will be able to control the tendency of financial misreporting and as such will demand more in the internal audit budget. Morover, Raghunandan, Read and Rama (2001) and Sarens (2009) argue that a vibrant audit committee could make use of the internal audit function as part of its resource for carrying out effective monitoring duties, thus it is imperative for the audit committee to ensure a working internal audit function. As such, audit committee meeting is projected to be positively related to the internal audit budget.

On the other hand, advocators of substitution hypothesis allege that an audit committee that meets often is perceived to effectively cater for internal control problems and issues with the financial report (Sarens et al., 2011). Therefore, the need for internal auditors to provide more assurance about financial reporting quality is minimized. Because of these competing arguments, the following non-directional hypothesis is stated:

***H3:*** *There is relationship between Audit committee meeting and investment in internal auditing.*



### 3.3.4 Audit Committee Tenure and Investment in Internal Auditing

There are two contradictory arguments with respect of the effect of audit committee tenure on investment in internal audit function. The first argument is that a larger tenure will enable audit committee personnel to gather more knowledge specifically focussing on the firm which will boost its ability to effectively address the risks and challengers the company is faced with (Kor & Mahoney, 2000) and ensure voluntary ethics disclosure (Othman, 2014). A long-term relationship with client is crucial for the audit committee to understand firm-specific knowledge about the client's accounting system, internal control, operations as well as the client's industry features (Boone et al., 2008). A review of literature indicates that firms with longer audit committee tenure have a higher tendency to receive a clean audit report (e.g Copley & Doucet, 1993; Deis & Giroux, 1992; Shaife et al., 2009) and report higher financial reporting quality (e.g Dhaliwal et al., 2010; Yang & Krishnan, 2005). Given that the presence of directors with longer tenure may enhance the monitoring roles of the audit committee, the need for internal auditing to attain effective internal controls and financial reporting issues would be less likely. Chan et al. (2012) concluded that audit committee members that have served for an elongated period have a lower need for audit effort. Moreover, Barua (2010) provided evidence that there is an inverse association between average audit committee tenure and investment in internal audit.

A counter-argument is that too long a service on the audit committee may result in audit committee members becoming less vigilant or more permissive of management self-interest actions (Rickling, 2014). Sharma and Isselin (2012) documented a significant positive relationship between the time spent by the independent audit committee members and financial statement anomalies suggesting that directors with longer tenure may not exercise independent judgment. Because of these contradictory arguments, this study states the following non-directional hypothesis:

***H4:*** *There is relationship between Audit committee tenure and investment in internal auditing.*

### 3.3.5 Audit Committee Index and Investment in Internal Auditing

Academic scholars argued that traditional measures of audit committee effectiveness (e.g audit committee independence, audit committee expertise, audit committee meeting and audit committee tenure) do not guarantee an effective audit committee as these mechanisms complement each other and any attempt to individually assess their quality is not appropriate (Connelly, Limpaphyom, & Nagarjan, 2012; Lara et al., 2007). Provided empirical evidence the independency of audit committee alone could not deter earnings management activities conducted by Malaysian firms, unless the audit committee meets frequently (Saleh, Iskandar, & Rahmat, 2007). Moreover, a number of studies on audit fees have been motivated to use a composite index to assess the effectiveness of audit committee (Zaman et al., 2011; Lisic, 2014). The common conclusion from the studies is that the composite index can capture the effectiveness of audit committee to monitor financial reporting process and reduce audit fees.



This study adopts four characteristics (i.e independency, expertise, vigilance, and tenure) to represent the effectiveness of audit committee. An audit committee with such characteristics would be expected to provide more effective monitoring role over internal controls and financial reporting issues. This may lead to place a greater demand on internal auditing to mitigate control and financial risk that may encounter the firm. However, based on the substitution hypothesis, the presence of audit committee with independent, expert, vigilant and less tenure may reduce the need for assurance provided by internal auditors. Hence, given these two competing viewpoints, the following non-directional hypothesis is stated:

***H5:*** *There is relationship between audit committee index and investment in internal auditing.*

## 3.4 Method of Data Collection

Data pertaining to audit committee and internal audit variables were hand collected from respective annual reports of public companies listed on Bursa Malaysia. Finical data (i.e. firm size, leverage, inventory and operation cash flow) was extracted from financial database “DataStream”.

## 3.5 Population and Sampling Selection

The initial sample of this research consists of top 100 companies listed on Bursa Malaysia based on the 2014 market capitalization. This study observes the firms over a three-year period (i.e. from 2012 to 2014). These firms were selected because they are more likely to have complete internal audit and audit committee data. . The reason for commencing with year 2012 was because it is considered as a recent year after Malaysian companies, in year 2009, are required to disclose information on internal audit function. Moreover, Malaysian Code of Corporate Governance has introduced new recommendations for audit committee in 2012. The reason for concluding with year 2014 is because it was the last year with available data as at the time this study was conducted. Firms with missing financial and internal audit data for sample periods are excluded. This results in a final sample of 96 companies (i.e 288 firm-year observations).

While Table 3.1 summarizes the sample selection procedure, Table 3.2 presents the distribution of sample firms according to Bursa Malaysia classification.

Table 3.1
*Derivation of Sample*

| **Criteria** | **No. of firms** |
|---|---|
| Top100 companies based on market capitalization for 2014 | 100 |
| Less: | |
| companies with incomplete data on firm size | (1) |
| Companies with incomplete data on internal audit function | (1) |
| companies with incomplete data on inventory | (2) |
| year * 3 | 3 |
| **Final Observations** | 288 |

The study deliberately did not disregard financial data to avoid dealing with small sample size data. Moreover, prior academic works have included financial firms as they found the firms to have internal audit function (Carcello et al., 2005; Sarens et al., 2012). However, this study controls for financial companies to ensure the study results are not driven by the companies.

Table 3.2

*Bursa Malaysia Sector Representation of the Sample Firms*

| **Industry** | **No. of firms** | **No. of firm- years** | **Percentage (%)** |
|---|---|---|---|
| Consumer product | 13 | 39 | 14 |
| IPC | 1 | 3 | 1 |
| Construction | 1 | 3 | 1 |
| Trading/services | 31 | 93 | 32 |
| Properties | 5 | 15 | 5 |
| Plantation | 14 | 42 | 15 |
| Reits | 7 | 21 | 7 |
| Hotels | 1 | 3 | 1 |
| Finical | 13 | 39 | 14 |
| Industrial products | 10 | 30 | 10 |
| **Total** | 96 | 288 | 100 |



### 3.6 Measurement of the Variables

The measurement of dependent, independent and control variables are as follows:

#### 3.6.1 Dependent Variable:

**Investment in Internal Audit (IAFNV)** was operationalized by the cost born by internal audit function (Barua et al., 2010).

#### 3.6.2 Independent Variables

**Audit Committee Independence (ACIND)** was measured as the percentage of number of independent audit committee members to the total number of audit committee members (Abdul Rahman & Ali, 2006; Mohamad et al., 2012).

**Audit Committee Expertise (ACEXP)** was measured as the percentage of committee members who have an accounting or auditing qualification to the total number of audit committee members. Audit committee members with accounting or auditing expertise are those with experience on preparing or auditing financial statements (Abbott et al., 2004; Bédard et al., 2004).

**Audit Committee Meetings (ACMEET)** was operationalized by the frequency of Audit committee meetings in a year (DeZoort et al., 2002; Zhang et al., 2007).

**Audit Committee Tenure (ACTEN)** was measured by the average tenure of audit committee directors (Abbott et al., 2004; Barua et al., 2010).

**Audit Committee Index (ACINDX)** this study develops an Audit Committee Index (ACINDX), aggregating scores of audit committee mechanisms. The incorporated mechanisms and scores attached to them are presented in Table 3.3

Table 3.3
*Audit committee Index (ACINDX) components*

| Items | Score |
|---|---|
| ACIND | 1 for firms with above sample median ACIND for the year and 0 otherwise |
| ACMEET | 1 for firms with above sample median ACMEET for the year and 0 otherwise |
| ACEXP | 1 for firms with above sample median ACEXP for the year and 0 otherwise |
| ACTEN | 1 for firms with below sample median ACTEN for the year and 0 otherwise |

The index ranges from zero to four. A higher index score indicates audit committee effectiveness, with an ACINDX of four being the highest.



**3.6.3 Control variables:**

This study includes audit committee size, leverage (debt), inventory, operation cash flow, firm size and internal audit source arrangement as control variables in the regression models. These variables are considered because previous studies provided evidence of a significant impact of these variables on internal auditing budget (e.g. Barua, et al., 2010; Carcello, et al., 2005). A discussion of these variables is covered as follows:

**Audit Committee Size (ACSIZE)** was measured by the number of member in audit committee (Klein, 2002; Zhang et al., 2007). Audit committee size is an important element that impacts the effectiveness of the audit committee oversight duties. Large audit committees are viewed as having a better link with environment, more capabilities, more experience and varied expertise (Anderson et al., 2012). This characteristic of the audit committee provides a view of the organization's commitment to establishing effective corporate governance system which manifests in a greater investment in internal audit function. Therefore, this study expects audit committee size to have a positive association with internal audit budget.

**Leverage (LEVG)** was operationalized by total debt to total assets (e.g. Gul et al., 2009; Gul & Wah, 2002; Jenkins et al., 2006). It has been argued that highly leveraged firms report financial information of low quality as mangers of these firms manipulate earnings to hide the true performance of the firms (Sweeney, 1994). It is therefore expected that audit committees invest more in internal audit function to protect the debt holders' interest. Academic literature provides evidence that an increased proportion of debt may lead to higher investment in internal audit function (Carcello et al., 2005). The study expects leverage to have a positive relationship with internal audit budget.



**Inventory (INVT)** was measured through ratio of total inventory to total asset (Goodwin-Stewart & Kent, 2006). Invention ratio has been used by literature to represent complexity of firm operations (Abbott et al. 2010). It has been argued that the need for better monitoring by an effective internal audit increases with firm complexity (Ramamoorti, 2003). Carcello et al. (2005) documented that firm complexity is positively related to the investment in internal audit function. Therefore, the present research predicts a positive association between inventory and internal audit budget.

**Operating Cash flow (OPCF)** was operationalized by cash flow ratio, i.e. cash from operations divided by total assets (Barua et al., 2010). A higher level of operating cash flow may raise agency problem as managers of higher cash flow firm are expected squander the cash in projects that only serve the managers' self-interest and secure their control over the firm resources (Jensen, 1986). As such, an audit committee of firm with higher cash flows is more likely encourage and support the monitoring role of internal audit over the firm cash. Prior literature provided empirical evidence that operating cash flow is positively related to internal audit budget (carcello et al., 2005; Abbott et al., 2010). This study expects operating cash flow to have a positive impact on internal audit budget.

**Firm Size (FSIZE)** extant literature found that firm size to be positively related to the extent to which firms invest in their internal audit function (Carcello et al., 2005; Goodwin-Stewart & Kent, 2006). Therefore, this study predicts firm size to have a positive influence on internal audit function. The study also measures firm size as the book value of the total assets of the company.

**Internal Auditing Source arrangement (IAFSOU)** was measured by the dummy variable, which takes the value of 1 if the IAF is outsourced and 0 otherwise (Barua et al., 2010). Barr and Chang (1993) highlighted the advantages of outside internal audit providers that include greater perceived independence, flexibility, cost savings and improved quality. Therefore, it is expected that firms with outsiders performing internal audit services to invest less in internal audit. Prior research documented that outsourcing of internal audit function is negatively associated with internal audit budget (Carcello et al., 2005; Anderson et al. 2012; Barua et al., 2010).

The study also includes industry (INDS) and year (YER) dummy variables to represent industry and year effect. A dummy variable coded one if a firm is included in specific sector was used to represent industry fixed effect. While the year 2012 is considered as base year, this study includes two year dummy variables (i.e. 2013 and 2014) to control for potential year fixed effect. However, no prediction is made on the effect of industry and year dummy variables on internal audit budget. Table 3.4 provides a summary of the operationalization of variables utilized by the current study.

Table 3.4
*Summary of the operationalization of the Variables Used in the Study*

| **Variables** | **Acronym** | **Operationalization** |
|---|---|---|
| Investment in internal Audit | IAFNV | the cost born by internal audit function |
| Audit committee independence | ACIND | The percentage of total number of independent audit committee members of the firm divided by the total number of audit committee members |
| Audit committee expertise | ACEXP | The percentage of committee members who have an accounting or auditing qualification of the firm to the total number of audit committee members. |
| Audit committee meeting | ACMEET | The frequency of Audit committee meetings in a year |
| Audit committee tenure | ACTEN | The average tenure of audit committee member |
| Audit committee index | ACINDX | 1 for firms with above sample median ACIND for the year and 0 otherwise<br>1 for firms with above sample median ACMEET for the year and 0 otherwise<br>1 for firms with above sample median ACEXP for the year and 0 otherwise<br>1 for firms with below sample median ACTEN for the year and 0 otherwise |
| Audit committee size | ACSIZE | The number of directors in audit committee of the firm |
| Leverage | LEVG | Total debt to total assets at the year end |
| Inventory | INVT | inventory to total asset at the year end |
| Operating cash flow | OPCF | cash from operations divided by total assets at the year end |
| Firm size | FSIZE | The book value of the total assets of the company at the year end |
| Internal auditing source arrangement | IAFSOU | dummy with the value of 1 if the IAF is outsourced and 0 otherwise |

### 3.7 Analytical procedures

The purpose of this study is to investigate the relationship between audit committee characteristics and investment in internal auditing. To achieve this end, cross sectional- time series Ordinary Least Square (OLS) regressions were conducted. Several assumption of normality, multicollinearity, heteroscedasticity and autocorrelation are tested to determine whether OLS regression is the best liner unbiased estimator. These assumption are discussed in detail in the following chapter.

Moreover, the study presents descriptive analysis of the variables tested to profile the data. It also presents correlation matrix to test the correlation among variables utilized in the study. Data was analyzed and processed using Stata software version 12.



### 3.8 Operational Model

The following cross sectional-time series OLS regression has been utilized to investigate the potential impact of various audit committee characteristics (independence, expertise, meeting, tenure and audit committee index) on investment in internal auditing:

$$IAFNV = \beta_0 + \beta_1 ACIND_{it} + \beta_2 ACEXP_{it} + \beta_3 ACMEET_{it} + \beta_4 ACTEN_{it} + \beta_5 ACINDX_{it} + \beta_6 ACSIZE_{it} + \beta_7 LEVG_{it} + \beta_8 INVT_{it} + \beta_9 OPCF_{it} + \beta_{10} FSIZE_{it} + \beta_{11} IAFSOU_{it} + \beta_{12} INDS_{it} + \beta 13 YERit + \varepsilon_{it}$$

Where:

**IAFNV =** the natural log of the cost born by internal audit function

**ACIND =** Audit committee independence.

**ACEXP =** Audit committee expertise

**ACMEET=** audit committee meetings

**ACTEN=** Audit committee tenure

**ACINDX=** Audit committee index

**ACSIZE=** Audit committee size

**LEVG=** Leverage

**INVT=** Inventory

**OPCF=** Operating cash flow

**FSIZE=** firm size

**IAFSOU=** Internal Audit Source arrangement

**INDS=** industry

**YER**= year

**ε=** error terms

**3.9 Summary for the Chapter**

In the nutshell, this chapter highlighted the theoretical framework of the study. Moreover, five hypotheses have been developed to link independent variables with dependent variable. The chapter also deals with how independent variable, dependent variable and control variables are measured. Last but not the least, the method of data collection, population and sample and data analyses techniques are briefly discussed in the chapter.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## 4.1 Introduction

This chapter presents the findings of this study. The rest of this chapter is arranged as follow. Section 4.2 presents the descriptive statistics. Section 4.3 discusses the multivariate classical assumptions which include; Normality, Multicollinearity, Heteroscedasticity and Autocorrelation. Section 4.4 reports and discusses the results of the main analysis. Section 4.5 provides a discussion on additional tests that were carried out to ensure the robustness of the main analysis. Finally, Section 4.6 summarizes the whole chapter.

## 4.2 Descriptive Statistics

This section presents information regarding the descriptive analysis for each variable investigated in the present study. The descriptive analysis enables the researcher to understand and profile the data. Table 4.1 below presents the descriptive statistics for all variables tested. The table shows the mean internal audit budget (IAFNV) is Ringgit Malaysian (RM) 3,985,917. The minimum (Maximum) values of audit committee independence (ACIND) are 50% (100%) with an average value of 86%. While the average number of audit committee meetings (ACMET) is 6, the mean audit committee size (ACSIZE) of sample firms is 4. The mean value of audit committee expertise (ACEXP) is 33% with a minimum (maximum) of 0 (80%). The mean (median) tenure of audit committee directors (ACTEN) is 8.18 (7.67). Audit committee index (ACINDX) ranges between 0 and 4 with an average value of 2.34. Leverage (LEV) has an average of

20.76% with a minimum (maximum) of 0 (78.65). As for inventory (INVEN), the mean value is 7%, while cash flows from operations (OCF) has an average of 11%. The size of sample firms (SIZE) ranges between 345507 million and 639398 million. Approximately, 17% of the sample firms have outsourced internal audit function (IAFSOU).

Table 4.1
*Descriptive Statistics of Continuous Variables*

| Variable | Min | Max | Mean | Sd | P75 | Median | P25 |
|---|---|---|---|---|---|---|---|
| IAFNV(*RM'000*) | 15 | 65000 | 3985.917 | 7969.947 | 3029 | 1145.5 | 399 |
| ACIND | 0.5 | 1 | 0.859 | 0.152 | 1 | 1 | 0.75 |
| ACMET | 3 | 18 | 5.840 | 2.473 | 6 | 5 | 4 |
| ACEXP | 0 | 0.8 | 0.332 | 0.188 | .4 | .33 | 0.25 |
| ACTEN | 1.25 | 28.333 | 8.178 | 4.506 | 10.75 | 7.667 | 4.667 |
| ACINDX | 0 | 4 | 2.337 | 0.945 | 3 | 2 | 2 |
| ACSIZE | 3 | 6 | 3.667 | 0.783 | 4 | 3 | 3 |
| LEV (%) | 0 | 78.65 | 20.759 | 16.515 | 30.635 | 19.825 | 6.74 |
| SIZE (*RM'000*) | 345507 | 639398006 | 29935886.8 | 93213864.3 | 14908202.8 | 52533478 | 2407680 |
| INVEN | 0 | 0.545 | 0.069 | 0.090 | .1115543 | 0.035 | 0.0003 |
| OCF | - 1.672 | 1.757 | 0.109 | 0.201 | 0.141 | 0.754 | 0.383 |
| | | | **N(mean)** | | | | |
| IAFSOU | 0 | 1 | 240 (83) 48(17) | 0.373 | 0 | 0 | 0 |

Notes: IAFNV: the cost born by internal audit function, ACIND: the percentage of independent audit committee members, ACMEET: the number of audit committee meetings, ACEXP: the percentage of audit committee members with an accounting or auditing qualification, ACTEN: the average tenure of audit committee member, ACINDX: audit committee index, ACSIZE: total number of audit committee directors, IAFSOU: 1 if internal audit function is outsourced and 0 otherwise, LEV: total debt to total assets, SIZE: total assets, INVEN: total inventory to total assets, OCF: operation cash flow to total assets.

### 4.3 Classical Assumption Tests

Ideally, before delving into the main statistical analysis, it is conventional to ensure some classical assumptions were met in order to avoid misleading result. The classical assumptions include normality, multicollinearity, heteroskedasticity, and autocorrelation. The following subsections present result of the assumptions and discuss how the assumptions were met in this study.

#### 4.3.1 Normality

Statistically, normality is referred to as the normal distribution of the error terms also known as residual. According to Hair et al., (2006) testing for normality is required for hypothesis testing, although is not necessary for the regression coefficients estimation. In the cause of ensuring the normality of the data used in this study, the examination of the skewness and kurtosis values were employed in this study.

Table 4.2
*Results of Normality Test*

| | Before transformation | | After transformation | |
|---|---|---|---|---|
| **Variables** | **Skewness** | **kurtosis** | **Skewness** | **kurtosis** |
| IAFNV | 3.877 | 21.262 | 0.102 | 2.741 |
| ACIND | -0.322 | 1.465 | - 0.322 | 1.465 |
| ACMEET | 2.356 | 9.090 | 1.299 | 4.635 |
| ACEXP | 0.220 | 2.973 | 0.087 | 2.806 |
| ACTEN | 1.076 | 5.009 | 0.457 | 2.172 |
| ACINDEX | - 0.244 | 2.675 | - 0.244 | 2.675 |
| ACSIZE | 0.964 | 3.236 | 0.649 | 2.316 |
| IAFSOU | 1.789 | 4.2 | 1.789 | 4.2 |
| LEV | 0.783 | 3.362 | 0.516 | 2.461 |
| SIZE | 4.902 | 27.2482 | 0.934 | 4.022 |
| INVEN | 2.101 | 8.991 | 1.155 | 3.357 |
| OCF | 0.480 | 42.374 | 1.088 | 3.377 |

Notes: please see Table 4.2 for variable definitions



Table 4.2 above presents the skewness and kurtosis values of the variables understudied in this research before and after transformation. Apparently, from the result presented above, the data needs to be transformed as most of the variables recorded high skewness and kurtosis values. Therefore, the natural logarithm of IAFNV, ACMEET, ACSIZE, and SIZE was used in current study to normalize the variables. Moreover, the study winsorizes ACEXP, ACTEN, LEV, INVEN, and OCF at 5% and 95% to mitigate the potential normality problem.

### 4.3.2 Multicollinearity

Multicollinearity occurs when there is strong correlation between the independent variables. Multicollinearity is a significant concern especially in a regression based study. The presence of multicollinearity in a regression model is said to undermine the reliability of the estimated regression coefficient (Tabachnick et al., 2001; Hair et al., 2006). In this regard, multicollonearity is examined in this study using different types of techniques including; Variance Inflation Factor (VIF) and correlation matrix. Table 4.3 demonstrates the result of the VIF. According to Hair et al. (2006), multicollonearity is considered present when the VIF value is higher than 10. The result presented in Table 4.3 below shows the VIF values of the independent and the control variables are entirely below the threshold (10). Hence, the result confirms the absence of multicollinearity in the dataset used for analysis in this study. Moreover, in order to affirm the absence of multicollinearity, both Spearman and Pearson correlation matrix are utilized. According to scholars, when the correlation coefficient between independent variables is higher than 0.80, it's indicate the presence of multicolloneairty (Hair et al, 2006). The results of the correlation matrix presented in Table 4.4 below show that the absolute values of correlation among the variables are lower than 0.80. As such, the multicollinearity problem is not a major concern of this research.

Table 4.3
*Results of VIF Test*

| **Variable** | **Model 1** | | **Model 2** | |
|---|---|---|---|---|
| | **VIF** | **1/ VIF** | **VIF** | **1/ VIF** |
| ACIND | 1.36 | 0.736 | - | - |
| ACMEET | 1.48 | 0.675 | - | - |
| ACEXPR | 1.17 | 0.852 | - | - |
| ACTEN | 1.35 | 0.742 | - | - |
| ACINDX | - | - | 1.16 | 0.866 |
| ACSIZE | 1.22 | 0.821 | 1.20 | 0.835 |
| IAFSOU | 1.24 | 0.809 | 1.18 | 0.848 |
| LEV | 1.43 | 0.701 | 1.27 | 0.786 |
| SIZE | 1.48 | 0.544 | 1.56 | 0.643 |
| INVEN | 1.60 | 0.623 | 1.54 | 0.651 |
| OCF | 1.50 | 0.667 | 1.46 | 0.686 |
| Mean VIF | 1.60 | | 1.57 | |

Notes: ACMEET: the natural log of audit committee meetings, ACSIZE: the natural log of total number of audit committee directors, SIZE: the natural log of total assets. Other variables are previously defined.

Table 4.4
*Correlation Matrix*

**Spearman**

**Pearson**

| | IAFNV | ACIND | ACMEET | ACEXP | ACTEN | ACINDX | ACSIZE | IAFSOU | LEV | SIZE | INVEN | OCF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IAFNV** | **1** | - 0.103 | **0.327** | - 0.078 | **- 0.158** | 0.000 | **0.352** | **- 0.436** | 0.056 | **0.588** | **- 0.149** | 0.032 |
| **ACIND** | - 0.106 | **1** | 0.086 | 0.010 | **0.335** | **0.460** | **- 0.201** | **0.124** | **0.210** | - 0.099 | **0.160** | - 0.056 |
| **ACMEET** | **0.432** | 0.057 | **1** | - 0.011 | **- 0.163** | **0.450** | **0.150** | - 0.059 | - 0.015 | **0.282** | **- 0.189** | - 0.075 |
| **ACEXP** | - 0.098 | 0.084 | - 0.061 | **1** | 0.107 | **0.414** | **- 0.253** | - 0.062 | - 0.019 | - 0.089 | 0.049 | 0.051 |
| **ACTEN** | **- 0.181** | **0.327** | **- 0.189** | 0.1082 | **1** | **- 0.227** | **- 0.149** | - 0.086 | **0.232** | - 0.069 | 0.059 | - 0.100 |
| **ACINDX** | - 0.002 | **0.468** | **0.327** | **0.340** | **- 0.236** | **1** | **- 0.303** | **0.123** | 0.006 | - 0.021 | 0.047 | 0.034 |
| **AC SIZE** | **0.365** | **- 0.249** | **0.188** | **- 0.174** | **- 0.169** | **- 0.301** | **1** | **- 0.170** | - 0.060 | **0.141** | - 0.038 | - 0.019 |
| **IAFSOU** | **- 0.433** | **0.130** | - 0.105 | - 0.072 | - 0.094 | **0.117** | **- 0.170** | **1** | - 0.024 | **- 0.261** | 0.048 | - 0.077 |
| **LEV** | 0.018 | **0.202** | - 0.031 | 0.006 | **0.262** | - 0.012 | - 0.093 | - 0.039 | **1** | **0.252** | 0.027 | **- 0.258** |
| **SIZE** | **0.562** | - 0.073 | **0.419** | **- 0.132** | - 0.059 | - 0.044 | **0.151** | **- 0.222** | **0.199** | **1** | **-0.216** | **-0.427** |
| **INVEN** | - 0.097 | **0.142** | **- 0.195** | **0.129** | 0.003 | 0.094 | - 0.093 | 0.048 | - 0.055 | **- 0.254** | **1** | **0.129** |
| **OCF** | 0.099 | - 0.080 | - 0.035 | 0.040 | - 0.097 | 0.011 | 0.011 | - 0.098 | **- 0.269** | **- 0.404** | 0.043 | **1** |

Notes: the upper diagonal of the matrix shows Spearman correlations and the lower diagonal demonstrates Pearson correlations. Bolds indicate significance at the 5 percent level or better. Please see Table 4.2 for variable definitions.

### 4.3.3 Heteroscedasticity

Heteroskedasticity occurs when there are no constant variances for error terms of a regression model. This is a concern as such inconsistency affects the estimation of the coefficients and the significance of the relationship between variables (Gujarati, 1988). In view of this, Heteroskedasticity is examined in this study using the Cook-Weisberg Test. The null hypothesis in which the variance of the error terms is homogenous was tested. A p-value greater than 0.05 indicates the study fails to reject the null hypothesis and, thus, the variance of error terms is considered homogenous (Green, 2003).

Table 4.5
*Results of Cook-Weisberg test for heteroscedasticity*

| | **Model 1** | **Model 2** |
|---|---|---|
| **$Chi^2$ (P-value)** | 0.01 (0.936) | 0.02 (0.887) |
| **H0 (null):** | Supported | Supported |



The results of the Cook-Weisberg are presented in Table 4.5 above. The results show that value of p-value is greater than 0.05 in the two models. This affirms the absence of heteroscedasity is the present study.

### 4.3.5 Autocorrelation

Autocorrelation means that the error terms are correlated and not independent. It is expected that data analysis is not heavily dependent on whether the residuals are independently distributed as long as the data does not have large time period. In fact, having correlated and dependent residuals is not a serious problem in this study since the study involves only three years (2012 - 2014).

Table 4.6

*Results of Wooldridge test for autocorrelation*

| | **Model 1** | **Model 2** |
|---|---|---|
| **$Chi^2$ (P-value)** | 0.840 (0.362) | 1.004 (0.319) |
| **H0 (null):** | Supported | Supported |

However, Wooldridge test was in this study to assess the autocorrelation problem. The null hypothesis that the error terms are not correlated was tested. A p-value greater than 0.05 indicates that the study fills to deny the null hypothesis and, therefore, the error terms deemed to be independent (Wooldridge, 2003). Table 4.6 shows the results of Wooldridge test. The figure of P-value is higher than 0.05, indicating the absence of autocorrelation problem in the regression models.

## 4.4 Regression Analysis

Regression analysis is a set of statistical procedures used to predict and explain the value of dependent variable based on the value of one or more independent variables (Kleinbaum, Kupper, Nizam, & Rosenberg, 2013). Multiple regression analysis is used in this study to analyze the relationship between audit committee characteristics and internal audit budget. The results of the OLS regressions are presented in Table 4.7 below. Evidently, the adjusted $R^2$ are 65% and 64% in the model 1 and 2, respectively. The F ratio is significant ($P<0.00001$) in the two models. The results shows that the independent and control variables could explain about 65% of changes in internal audit budget. They also indicate that overall regression model fits the regression equation and there is a linear relationship between the dependent variable and the independent variables.

From Model 1 of the table, the result shows that there is a positive and significant relationship between ACMEET and investment in internal auditing ($\beta = 2.07$, $P<0.05$). This finding suggests that firms with frequent audit committee meeting invest more in internal audit function. It also consistent with the argument that an effective audit committee (an audit committee that meets frequently) increases the demand for more assurance required from the internal audit. This result is in conformity with Barua et al., (2010) who found that an effective audit committee may demand a higher internal audit budget. Moreover, ACTEN is significantly and negatively related to investment in internal auditing ($\beta = -2.50$, $P<0.05$). This result suggests that audit committee members with increased firm-specific knowledge reduce the need for having greater assurance from internal audit function. The finding is in line with Barua et al., (2010) who concluded that audit committee tenure is associated with lower internal audit budget. As appeared in Model 2 of the table, ACINDEX has a negative and significant impact on internal audit budget ($\beta = -2.51$, $P<0.05$). The result suggests firms with effective audit committee invest less in internal audit. An effective audit committee manages financial misreporting risk and, therefore, may reduce the demand for obtaining greater assurance from internal audit budget.

However, other audit committee characteristics including ACIND and ACEXP do not appear to have a significant impact on internal audit budget. The results suggest that audit committee independence and expertise have no monitoring role over internal audit function and resources, which is in contradiction to agency theory. However, these findings are in line with Barua et al., (2010) who found that audit committee independence and accounting expertise are not significantly related to internal audit budget. A possible explanation for the insignificant association between audit committee independence and internal audit budget may be due to

Table 4.7
*Results of Regression Analysis*

| | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| | Dependent variable: IAFNV | | | Dependent variable: IAFNV | | |
| **Variable** | **Coefficient** | **t-Statistic** | **P-Val** | **Coefficient** | **t-Statistic** | **P-Val** |
| ACIND | 0.228 | 0.54 | 0.590 | | | |
| ACMEET | 0.416 | 2.07 | 0.039 | | | |
| ACEXP | - 0.145 | - 0.44 | 0.657 | | | |
| ACTEN | - 0.039 | - 2.50 | 0.013 | | | |
| ACINDEX | | | | 0.158 | 2.51 | 0.013 |
| ACSIZE | 1.488 | 4.91 | 0.000 | 1.886 | 6.23 | 0.000 |
| IAFSOU | - 0.907 | - 5.54 | 0.000 | - 0.837 | - 5.19 | 0.000 |
| LEV | 0.006 | 1.35 | 0.178 | 0.003 | 0.70 | 0.486 |
| SIZE | 0.560 | 10.86 | 0.000 | 0.617 | 12.91 | 0.000 |
| INVEN | 3.143 | 3.41 | 0.001 | 3.073 | 3.38 | 0.001 |
| OCF | 4.443 | 6.58 | 0.000 | 4.744 | 7.07 | 0.000 |
| **INDUSTRY** | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| **YEAR** | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| | | | | | | |
| Number of obs | | 288 | | | 288 | |
| F( 17, 270) | | 31.70 | | F( 14, 273) | 37..45 | |
| Prob > F | | 0.0000 | | | 0.0000 | |
| R-squared | | 0.666 | | | 0.658 | |
| Adjusted R-squared | | 0.645 | | | 0.6400 | |

Note: IAFNV: the natural log of cost born by internal audit department; ACMEET: the natural log of audit committee meetings; ACSIZE; the natural log of total number of audit committee directors, SIZE: the natural log of total assets, YEAR: is the year 2013 and 2014. Only five industry sectors are included into regression analysis. These sectors are consumer product, trading and services, finance, plantation and industrial product. The study excludes the remaining sectors reprehensive of the sample firms to avoid the dummy variable trap. Other variables are previously defined.

Independent directorsof audit committeeare nominated and elected by the firm management. As such, the directors might not take deceive action against the management. Wan Ismail and Dunstan (2009) argue that audit committee independence is not effective governance mechanisms in Malaysia because family members involvement in the appointment of audit committee members. Moreover, Chen and Nowland (2010) assert that outside directors in Asian family-owned firms are not truly independent monitor because the involvement of family group in the selection of outside directors.

Another plausible reason of insignificant results may be due that most public firms in Malaysia tend to comply with the requirements only with the intention to avoid any punishment by the regulators who favour independent members. Abdullah et al., (2010) argue that audit committee of Malaysian firms' lacks rigor as the establishment of the audit committee is simply to comply with Bursa Malaysia's requirements. Therefore, an audit committee with such characteristics is less expected to effectively work together with internal audit department so as to provide assurance about internal controls and monitor financial reporting process.

As for audit committee expertise, the possible explanation for insignificant finding may be the dominance of audit committee members without accounting and audit qualification. In this study, the majority of cases have only one or two audit committee member who is certified accountant or a member of a professional accounting body. This is evident by Table 4.1 which reports that only 33% of audit committee members have accounting and audit qualification. Audit committee members who do not understand financial reporting details may not be helpful in detecting financial misstatement and effectively communicating with external as well as internal auditors to enhance the quality of financial reports.

Evidently, most of control variables have a significant impact on internal audit budget across the two models with the expected sign. For example, ACSIZE is positively and significantly associated with internal audit budget. This result is the argument that large audit committees have a better link with environment, more capabilities, more experience and expertise which may increase the effective of the committees (Anderson et al., 2012) .Such audit committees may demand greater assurance from internal audit. Furthermore, SIZE has a significant and positive effect on internal audit budget. The result suggests that large firm invest more in internal audit. IAFSOU is negatively and significantly related to internal audit budget. The result implies that firms with outside internal audit providers invest less in internal audit. INVEN and OCF have a positive and significant related to internal audit budget. The results suggest that firms with higher level of inventory and operating cash flow are considered complex and, thus, demand greater monitoring by internal audit. LEV is the only control variable that has no significant effect on internal audit budget, although it has the expected direction.

### 4.5 Robustness checks

Two tests were conducted in this research to ensure the sensitivity and robustness of the main results reported earlier. Thus far, the independency of audit committee has been measured by represented by the proportion of independent directors to the total number of directors on an audit committee. Moreover, the percentage of audit committee members with qualification in accounting or auditing is used to represent an audit committee expertise. In the main analysis, the findings show that both audit committee independence and expertise are not significantly related to internal audit budget. As alternative measurement for audit committee independence, Models 1 and 2 were re-run with independent variable ACIND, operationalized by the dummy variable taking the value of 1 if audit committee 100% independence and 0 otherwise. The models were also re-estimated with independent variable ACEXP, measured by the dummy variable assigned the value of 1 if audit committee has at least one member of accounting or auditing expertise and 0 otherwise. Table 4.7 demonstrates the results of the re-estimated models.

Table 4.8
*Results of Regression Analysis using alternative measurement of audit committee independence and expertise*

| | MODEL 1 | | | MODEL 2 | | |
|---|---|---|---|---|---|---|
| **Variable** | **Coefficient** | **t-Statistic** | **P-Val** | **Coefficient** | **t-Statistic** | **P-Val** |
| ACIND | 0.048 | 0.37 | 0.711 | - | - | - |
| ACMEET | 0.455 | 2.25 | 0.025 | - | - | - |
| ACEXP | - 0.216 | - 1.14 | 0.256 | - | - | - |
| ACTEN | - 0.036 | - 2.28 | 0.023 | - | - | - |
| ACINDEX | - | - | - | 0.141 | 2.09 | 0.037 |
| ACSIZE | 1.539 | 5.01 | 0.000 | 1.687 | 5.79 | 0.000 |
| IAFSOU | - 0.918 | - 5.62 | 0.000 | - 0.828 | - 5.12 | 0.000 |
| LEV | 0.006 | 1.37 | 0.173 | 0.003 | 0.67 | 0.501 |
| SIZE | 0.557 | 10.87 | 0.000 | 0.607 | 12.58 | 0.000 |
| INVEN | 3.190 | 3.53 | 0.000 | 3.183 | 3.51 | 0.001 |
| OCF | 4.417 | 6.57 | 0.000 | 4.675 | 6.92 | 0.000 |
| **INDUSTRY** | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| **YEAR** | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| Number of obs | | 288 | | | 288 | |
| F( 17, 270) | | 31.89 | | F( 14, 273) | 37.06 | |
| Prob > F | | 0.0000 | | | 0.0000 | |
| R-squared | | 0.668 | | | 0.655 | |
| Adjusted R-squared | | 0.647 | | | 0.638 | |

Note: IAFNV: the natural log of cost born by internal audit department; ACMEET: the natural log of audit committee meetings; ACSIZE; the natural log of total number of audit committee directors, SIZE: the natural log of total assets, ACIND: 1 if audit committee is 100% independent and 0 otherwise; ACEXP: 1 if audit committee has at least one accounting or audit expert and 0 otherwise; YEAR: is the year 2013 and 2014. Only five industry sectors are included into regression analysis. These sectors are consumer product, trading and services, finance, plantation and industrial product. The study excludes the remaining sectors reprehensive of the sample firms to avoid the dummy variable trap. Other variables are previously defined.

Evidently, the results reported in the table lend further support to those shown in the main analysis. For example, ACTEN has a negative and significant influence on internal audit budget, whereas ACMEET and ACINDEX are positively and significantly related to internal audit budget. As for ACIND and ACEXP, the two variables still have no significant impact on internal audit budget, indicating that the study results are robust and not sensitive to using of the new measurement of ACIND and ACEXP. Secondly, in the main analysis, the natural logarithm of audit committee meeting and size was utilized to mitigate the normality problem. As a test of sensitivity, Models 1 and 2 were re-estimated with winsorizing ACMEET as well as ACSIZE at 5% and 95% to ensure that the study's findings are not driven by the type of transformation. The results of the re-estimated models are reported on Table 4.9. The table shows findings that are approximately the same as those from using the natural logarithm of ACMEET and ACSIZE. The results presented in the table also are in line with the study conclusion that ACTEN and (ACINDEX) are negatively (positively) associated with internal audit budget. Other variables still have equivalent significant level as the one reported in 4.7.

Table 4.9 *Results of Regression Analysis using winsorization of audit committee meeting and size*

| | MODEL 1 | | | MODEL 2 | | |
|---|---|---|---|---|---|---|
| **Variable** | **Coefficient** | **t-Statistic** | **P-Val** | **Coefficient** | **t-Statistic** | **P-Val** |
| ACIND | 0.277 | 0.66 | 0.508 | - | - | - |
| ACMEET | 0.066 | 1.90 | 0.058 | - | - | - |
| ACEXP | - 0.143 | - 0.44 | 0.663 | - | - | - |
| ACTEN | - 0.039 | - 2.48 | 0.014 | - | - | - |
| ACINDEX | - | - | - | 0.154 | 2.45 | 0.015 |
| ACSIZE | 0.427 | 5.13 | 0.000 | 0.521 | 6.24 | 0.000 |
| IAFSOU | - 0.899 | - 5.48 | 0.000 | - 0.837 | - 5.19 | 0.000 |
| LEV | 0.006 | 1.36 | 0.176 | 0.003 | 0.75 | 0.455 |
| SIZE | 0.565 | 11.00 | 0.000 | 0.619 | 12.96 | 0.000 |
| INVEN | 3.177 | 3.45 | 0.001 | 3.103 | 3.42 | 0.001 |
| OCF | 4.492 | 6.65 | 0.000 | 4.796 | 7.14 | 0.000 |
| **INDUSTRY** | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| **YEAR** | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| Number of obs | | 288 | | | 288 | |
| F( 17, 270) | | 31.67 | | F( 14, 273) | 37.46 | |
| Prob > F | | 0.0000 | | | 0.0000 | |
| R-squared | | 0.6660 | | | 0.6576 | |
| Adjusted R-squared | | 0.6450 | | | 0.6401 | |

Note: IAFNV: the natural log of cost born by internal audit department; ACMEET: audit committee meetings; ACSIZE; the total number of audit committee directors, SIZE: the natural log of total assets; YEAR: is the year 2013 and 2014. Only five industry sectors are included into regression analysis. These sectors are consumer product, trading and services, finance, plantation and industrial product. The study excludes the remaining sectors reprehensive of the sample firms to avoid the dummy variable trap. Other variables are previously defined.

## 4.6 Summary of the Chapter

In this chapter, summary statistics of and correlation matrix for the variable tested have been presented. After checking for multivariate analysis assumption, regression models were run using OLS estimator. Then, two additional analyses were conducted to test the robustness of the main findings.

The regression results show that while audit committee tenure has a negative and significant effect on internal audit budget, both audit committee meeting and index are positively and significantly associated with internal audit budget. On the other hand, audit committee expertise and independence have no statistically significant influence on internal audit budget. The additional analyses indicate that the main results are robust to the alternative measures of audit committee independence and expertise. The additional analyses also point out that the main findings are not driven by the type of transformation utilized in the present study.

# CHAPTER FIVE

# CONCLUSION AND RECOMMENDATION

## 5.1 Introduction

This chapter is the conclusive chapter of the study. The overview of the research findings is presented in this chapter. The chapter also discusses limitations and provides recommendation for future researchers. As such, this chapter is structured as follows. Section 5.2 provides overview of the study's findings. Section 5.3 addresses the implication of the research findings. Section 5.4 discusses the limitations of the study. Section 5.5 provides possible avenues for future research. Finally, section 5.6 summarizes and concludes the study.

## 5.2 Overview of the Study Findings

This study basically sets out to examine the relationship between audit committee characteristics and investment in internal auditing in Malaysia. It also aims to explore the possible influence of audit committee index on the investment on internal audit. Data on 96 public companies listed on Bursa Malaysia for the years 2012 through 2014 were collected to examine the proposed relationships. Five hypotheses derived from the theoretical framework were tested and analysed. Table 5.1 below presents a summary of the findings.

Table 5.1
*Summary of Hypotheses Testing*

| | Hypotheses | Remarks |
|---|---|---|
| **H1** | There is relationship between Audit Committee Independence and investment in internal auditing. | Not Supported |
| **H2** | There is relationship between Audit committee expertise and investment in internal auditing**.** | Not Supported |
| **H3** | There is relationship between Audit committee meeting and investment in internal auditing. | Supported |
| **H4** | There is relationship between Audit committee tenure and investment in internal auditing. | Supported |
| **H5** | There is relationship between audit committee index and investment in internal auditing. | Supported |



With regard to the objective in relation to the impact of audit committee characteristics on the investment on internal audit, the present research finds that audit committee meeting (tenure) are positively (negatively) related to internal audit budget. Both audit committee independence and expertise have no statistically significant influence on internal audit budget. In terms of audit committee index, the study reveals that audit committee index is positively and significantly associated with internal audit budget. Generally, based on the results, it can be concluded that audit committees of Malaysian companies have monitoring role over resources available to internal audit department.

## 5.3 Implications of the Study

The findings reported in this study have the following implications

### 5.3.1 Theoretical Implications

The findings presented in this study have significant theoretical contribution in validating the theoretical perspective of the agency theory. The significant relationship revealed between audit committee characteristics (i.e. meeting, index and tenure) and investment in internal auditing can be explained with the agency theoretical perspective as well as complementary and substitution hypotheses. For instance, at one extreme, the proponents of complementary hypothesis believe that the effectiveness of internal audit function increases when input from the audit committee is taken into consideration for audit plans (Carcello et al., 2005). At the other extreme, based on substitution hypothesis, it can also be argued that the involvement of an effective audit committee is bound to strengthen the internal controls of the firm and, therefore, reduces the need for assurance provided by internal auditors (Barua et al., 2010). Invariably, this study validates the theoretical perspective of agency theory in Malaysia context.

### 5.3.2 Regulatory Implications



The findings presented in this study also offer invaluable implication for regulators on important factors that should be taken seriously before investing in internal auditing. The insignificant results on audit committee independence and expertise have remarkable implications on the performance of audit committee in Malaysia. The findings indicate that audit committee members are not truly independent from the firm management due to the involvement of management in the selection of members which may jeopardize the expected monitoring role of audit committee. The results of the current study suggest policy makers in Malaysia to emphasize the commitment of audit committee members rather than their independence. As such, regulators should encourage public firms in Malaysia to appoint audit committee members who have more time to spend on overseeing financial reporting process. Moreover, regulators may require public companies in Malaysia to appoint more audit committee member with accounting auditing qualification.

### 5.4.3 Practical Implications

The findings presented in this study implies that the authorities (Bursa Malaysia and the Malaysian Institute of Corporate Governance (MICG) should pay cognisant attention to factors such as average tenure and committee meeting when planning and designing policies most suited for Malaysian public companies' internal audit. In addition, the Global Institute of Internal Auditors can use this research to further improve their guidelines. Further, the market participants can also use the results presented in this research to identify which factors should be considered when evaluating the monitoring activities of internal audit function. The findings of the present research enable investors to assess the role of internal audit function in improving financial reporting process through assisting audit committee and external auditors. Finally, the study findings, to some extent, support the recent requirements on internal audit and audit committee.



### 5.3.4 Academic Research Implications

The academic implication of this study is evident by providing significant factors that are important to investment on internal auditing in Malaysian public companies. The findings presented in this study are quite telling on the importance of audit committee size, tenure and index on the functional effectiveness of the investment done on internal audit committee.

Ultimately, this study extends the array of academic discussions in understanding and paying serious attention to the factors that are important in investing on internal auditing.

### 5.5 Limitations of the Study

Like every other studies, this research has inevitable limitations. First, the current study revolves around only the top 100 companies in Malaysia. As such, the results found in the study may not be generalized to small companies. Second, the study only emphasizes the role of audit committee over the resources available to internal audit function due to Malaysian companies are only required to disclose information pertaining to the cost of and sourcing arrangement of internal audit in their annual report. There are other factors that may affect the function of an internal audit which may, in turn, be linked to the effectiveness of audit committee. These factors that the audit committee can monitor include size of internal audit department, qualification of internal audit staff, availability of internal audit staff, internal audit organisational independence and internal audit department meetings. Third, there may be other factors that influence internal audit budget but are not considered by this research, in addition to audit committee and firm specific characteristics included in the study models.  Barua et al., (2010) and Carcello et al., (2005) suggest the following factors to be taken into consideration when investigating the internal audit budget: whether the audit committee reviewed the internal audit budget and restatement. However, since the purpose of the current study is to explore the association between audit committee characteristics and internal audit budget; but not to test the causality, the potential effect of the limitation on the results found in the study may not be of major concern. Finally, the present study only observes Malaysian companies due to the time limitation. The question of whether the study findings hold consistent in countries with similar environment remain unanswered.

### 5.6 Avenues for Future Research

Based on limitations presented above, several avenues for future research can be suggested. First, future research can include larger sample size to allow for generalizable conclusions. Second, future research may test the relationships hypothesized in our study in other East Asian counties with same environment. Third, it has been suggested that relative to countries where establishing an internal audit function is not required by law, companies invest more extensive budgets for their internal audit function in countries where establishing internal audit function is not required by the law. As such, future studies may investigate the association between audit committee characteristics and internal audit budget in countries where (where not) internal audit function is required by the law. Fourth, future studies may explore the possible influence of audit committee characteristics tested in the present paper on other internal audit function proxies using primary data. Theses proxies, among other things, include sourcing arrangements of internal audit function, size of internal audit department, qualification of internal audit staff, availability of internal audit staff, internal audit organisational independence and internal audit department meetings. Finally, Raghunandan, Read, and Rama (2001) suggest that the interaction between the audit committee and internal audit function, especially when avoiding scope restrictions, is significant. Therefore, future research may investigate the interactive effect of audit committee and internal audit function on audit quality or financial reporting quality.

### 5.7 Conclusions

Extant research empirically documents that audit committee characteristics monitor resources available to internal audit department (Barua et al., 2010). Here, the study went one step further by exploring the association between audit committee index and internal audit budget. The findings of the study have some interesting practical and theoretical implications. First, audit committee meeting and audit committee index were found to increase the internal audit budget. Second, resources available to internal audit department decreases as the average tenure of audit committee members increases. Third, audit committee expertise and independence have no significant impact on internal audit budget. The study results, to some extent, support the agency theory, complementary and substitution hypothesis. They also serve as alarm to regulators in Malaysia for requiring more independent and qualified audit committee members. Nevertheless, the overall results support the recent Malaysian requirements on internal audit and audit committee.

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