School of Accounting

Influence of Auditor Quality and Audit Committee Effectiveness on Earnings Conservatism of Malaysian Public Listed Firms

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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

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ABSTRACT

This study investigates whether earnings conservatism is significantly higher amongst Malaysian publicly listed firms subject to higher standards of ‗direct custodian excellence' of the financial reporting system relative to counterparts subject to lower direct custodian excellence standards. Drawing on agency theory, supplemented by tenets of key corporate governance reforms undertaken in Malaysia since the Asian financial crisis in 1997, it is expected that direct custodian excellence is positively associated with earnings conservatism.

For purposes of the main analysis, conservatism is defined in terms of both timeliness and persistence, and measured using models developed by Basu (1997). Direct custodian excellence, meanwhile, is derived as the function of audit quality (measured as a function of independence, specialization and brand name) and audit committee effectiveness (measured as a function of independence, financial expertise and diligence). Analysis is based on annual data (spanning the years 2002 to 2007) collected from 100 randomly selected Malaysian firms listed continuously on the Bursa Malaysia from January 1 2002 till December 31 2007) for each annual period from 2002 to 2007. Following exclusions for missing data points and outliers, empirical analysis is based on a final useable sample of 577 firm-year observations.

Findings from an extensive analytical analysis show limited support for the study's general proposition. Rather, findings show the level of earnings conservatism is likely to be equivalent for a Malaysian publicly listed firm subject to higher standards of direct custodian excellence than a counterpart facing lower levels of direct custodian excellence. There is some evidence, however, supporting the view that a Malaysian publicly listed firm engaging a higher quality auditor is more likely to have higher levels of persistent earnings conservatism than a counterpart using the services of a lower quality external auditor. Additional analysis, meanwhile, suggests a lack of association between audit committee effectiveness and (both the timeliness and persistence of) earnings conservatism within the Malaysian capital market setting. Overall, findings provide valuable insights and understanding, not only in respect to the direct custodian excellence/earnings conservatism linkage, but the individual dynamics and significance of corporate governance and earnings conservatism concepts."

ACKNOWLEDGEMENT

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LIST OF MAJOR ABBREVIATIONS

ACE	Audit committee effectiveness
AIMR	Association for Investment Management and Research
AQ	Auditor quality
ASX	Australian Securities Exchange
BRC	Blue Ribbon Committee
CCM	The Companies Commission of Malaysia
CFO	Cash flows from operating activities deflated by the market value of equity
CPA	Certified Public Accountant
DAC	Discretionary accruals
DCE	Direct custodian excellence
DEL	Deloitte and Touché
ERC	Earnings response coefficients
EY	Ernst and Young
FASB	Financial Accounting Standard Board
FPLC	The Federation of Public Listed Companies
FRF	Financial Reporting Foundation
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
GH	General Hypothesis
GLC	Government Linked Companies
HLFC	High Level Finance Committee
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IMS	Industry market share
IPO	Initial Public Offerings
KLSE	Kuala Lumpur Stock Exchange
KPMG	KPMG Peat Marwick
MACPA	Malaysian Association of Certified Public Accountants
MAICSA	Malaysian Institute of Chartered Secretaries and Administrators
MASB	Malaysian Accounting Standards Board
MIA	Malaysian Institute of Accountants
MICG	Malaysian Institute of Corporate Governance
MICPA	Malaysian Institute of Certified Public accountants
MID	Malaysian Institute of Directors

MRQ	Main Research Questions
MSQ	Main Secondary Question
MTB	Market-to-book value
NAS	Non-audit services
NYSE	New York Stock Exchange
PRC	People's Republic of China
PRQ	Primary Research Question
PS	Pooled-sample
PWC	PriceWaterhouseCoopers
ROA	Return on Assets
SARS	Severe acute respiratory syndrome
SEC	Securities and Exchange Commission
SC	The Securities Commission
SOX	Sarbanes–Oxley Act
UK	United Kingdom
US	United States

CHAPTER 1   INTRODUCTION

1.1   Background and motivation

Conservatism[1], considered by some (Sterling 1970; Basu 1997) as the most influential principle underpinning accounting valuation, has a lengthy historical application to financial accounting exceeding, five centuries. Nonetheless, the concept of conservatism faces major criticism by capital market regulators, standards-setters and academics. Critics argue conservatism leads to the understatement of net assets in the current period leading to the overstatement of earnings in future periods due to the understatement of future expenses (LaFond and Watts 2008). Despite heavy criticism, empirical research indicates conservatism has increased during the past decades (Givoly and Hayn 2000, 2002; Kim and Kross 2005; Lobo and Zhou 2006). This suggests critics may overlook significant benefits of conservatism. The lengthy persistence and resilience to criticism of conservatism are intriguing empirical dilemmas producing a number of important unanswered questions.

The importance of conservatism to accounting is thought to have various facets. One area receiving much attention is associated with earnings quality. Kung, James and Cheng (2008), for example, argue conservatism is an important underlying attribute of reporting quality often used by capital market participants to benchmark the quality of a firm's earnings. Ball and Shivakumar (2005), meanwhile, suggest conservatism is an important attribute of earnings quality because it makes financial statements more informative and useful; therefore, stakeholders are better able to monitor a firm's performance. Also, conservative accounting practices are thought to provide more timely information giving shareholders and creditors better opportunities to make key decisions on loss making projects (Ball, Robin and Wu 2003).

Others suggest conservatism is an effective mechanism for constraining managerial opportunistic behaviour (Kung et al. 2008) such as the manipulation of earnings. It is argued (e.g. Watts 2003a; Chen, Hemmer and Zhang 2007;Kung et al. 2008) pressure to adhere to the underlying tenets of conservatism provides an important disincentive for corporate management to actively seek to manipulate earnings. Whilst it may be argued conservatism acts as a natural deterrent to earnings manipulation, the mere existence of this principle is unlikely in practice to be a complete constraint. Rather, the degree to which conservatism

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[1]Conservatism encompasses a number of important dimensions such as earnings conservatism and balance sheet conservatism. Whilst acknowledging this, the proposed study will examine conservatism purely from an earnings conservatism point of view and if conservatism is used without a prefixed word in this thesis, then it refers only to earnings conservatism and to no other form of conservatism. For the purposes of this study, earnings conservatism is defined as earnings reflecting bad news more quickly than good news, where a higher degree of verification if preferred by accountants to recognized good news as gains than to recognized bad news as losses. For further discussion, please refer to Chapter 2.

constrains earnings manipulation is likely to be a function of pivotal ‗human-driven'
corporate governance[2] mechanisms that enact and enforce the principle.

The past decade has witnessed unprecedented discussion on the role of numerous
mechanisms for enhancing a firm's corporate governance structure and financial reporting
system (McMullen and Raghunandan 1996; Becker, DeFond, Jiambalvo and Subamanyam
1998; Abbott and Parker 2000; Beasley and Salterio 2001; Abbott, Parker, Peters and
Raghunandan 2003a; Vera-Munoz 2005; Jenkins, Kane and Velury 2006; Lennox and Park
2007). From this intense debate it is recognized that the external auditor and audit committee
are the most direct[3] and immediate custodians[4] responsible for the key role of enforcing
pivotal financial reporting principles including conservatism. Respective corporate
governance codes, or recommendations of best practice (see Blue Ribbon Committee 1999;
Malaysian Code of Corporate Governance 2000; Council on Corporate Disclosure and
Governance 2001; ASX Corporate Governance Council 2003; Council on Corporate
Disclosure and Governance 2005), enacted in numerous nations during the past several
decades have highlighted the role and responsibilities of the external auditor and audit
committee for monitoring and oversight of a firm's financial reporting system. Also, these
roles and responsibilities have continued to expand.

Though entrusted with enormous authority and responsibility, the simple
engagement of the external auditor and establishment of the audit committee is unlikely to
necessarily prompt better monitoring of a firm's financial reporting system, enforcement of
fundamental accounting principles, or improvements in the quality of financial information
reported. The corporate governance literature (McMullen and Raghunandan 1996; Becker et
al. 1998; Abbott and Parker 2000; Beasley and Salterio 2001; Abbott et al. 2003a; Agrawal

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[2] Various definitions of corporate governance exist. For this study, the definition of corporate governance in used
is as follows ―the process and structure used to direct and manage the business and affairs of the company
towards enhancing business prosperity and corporate accountability with the ultimate objective or realizing long
term shareholder value, whilst taking into account the interest of other stakeholders". For full discussion on
corporate governance and the underlying definition adopted is shown in Section 3.2.
[3] It is acknowledged the financial accounting system and the quality of earnings may be influenced by other
corporate governance mechanisms and custodians such as boards of directors and internal auditors. However,
respective corporate governance codes and best practices generally iterate that the specific primary function of
the external auditor and audit committee is the monitoring and oversight of the financial reporting system and
external reporting. Other mechanisms and custodians have indirect influences. For example, the boards of
directors may have the ultimate say on the accounting values reported but delegate day-to-day monitoring to the
external auditor and audit committee.
[4] The phrase custodian (or custodians) is used to define corporate governance mechanisms comprising human-
agents (i.e. individuals or small groups of people) and driven by a structured human-agent decision-making
process that have formal authority for monitoring and oversight. Non-custodian corporate governance mechanism
may or may not involve human-agents. However, in contrast to custodian corporate governance mechanisms
those of a non-custodian nature do not involve specific human-agent decisions and lack formal authority to
monitor a firm's corporate governance and financial reporting system. An example of a non-custodian
mechanism is the ownership structure. The very nature of a shareholding (such as higher family ownership) may
naturally constrain management but the structure does not have an active and structured human-agent decision-
making process or authority.

and Chadha 2005; Vera-Munoz 2005; Jenkins et al. 2006; Lennox and Park 2007) is heavily postmarked with arguments that the major custodians of the financial reporting system can only achieve the assigned roles and responsibilities if comprised of members with appropriate and necessary credentials (such as members with financial expertise) and traits (such as independence and diligence) that promote quality and effectiveness.

It is frequently cited in the literature that the quality of the external auditor is a central determinant of the direct custodian's ability to monitor and oversee the financial reporting system. For example, Chen, Lin and Zhou (2005) found higher quality auditors are better able to detect and restrain earnings management. These findings are supported by Reynolds and Francis (2000). As part of detecting and constraining earnings management, auditor quality provides information useful to investors in assessing a firm's value. This is because the higher the quality of the auditor the greater an investor will assess a firm's value (Titman and Trueman 1986). Moreover, according to Behn, Choi and Kang (2008), higher quality audits are associated with better forecasting performance by analysts. In addition, higher quality auditors are expected to be less willing to accept questionable accounting methods, and are more likely to detect and report errors and irregularities (Becker et al. 1998). Therefore, external auditors of high quality are more likely to be able to ensure the reporting of higher quality earnings. Quality will also be of significance in establishing whether the external auditor will enforce key accounting principles—such as conservatism— when seeking to improve earnings quality.

The lack of a precise consensus on a definition highlights the underlying multi-dimensional nature of auditor quality (Balsam, Krishnan and Yang 2003). According to DeAngelo (1981b) audit quality is the joint probability that an existing problem is detected and reported. Whilst a number of audit quality studies (e.g. Abbott and Parker 2000; Lennox and Park 2007) utilize the DeAngelo (1981b) definition, others abound. Palmrose (1988), for example, referred to audit quality as the probability that financial statements contain no material omissions or misstatements. Davidson and Neu (1993), meanwhile, defined audit quality as an auditor's ability to detect and eliminate errors and manipulations in reported net income. Similarly, O'Keefe, King and Gaver (1994) refer to audit quality as the level of compliance with Generally Accepted Auditing Standards (GAAS). In more recent research, Behn et al. (2008) defined audit quality as the employment of effective audit practices that improve the reliability of financial statement information and allow investors to make a more precise estimate of the firm's value. Despite the range of different definitions, a majority of prior literature usually expresses auditor quality as a function of auditor independence (Frankel, Johnson and Nelson 2002; Ashbaugh, LaFond and Mayhew 2003), auditor specialization (Hogan and Jeter 1999; Abbott and Parker 2000) and/or brand name (Chen et

al. 2005; Behn et al. 2008). For the purposes of this study, therefore, auditor independence, auditor specialization and brand name form the underlying attributes of auditor quality.

Due to huge accounting scandals (such as WorldCom, Enron and Parmalat) various worldwide corporate governance reforms have been enacted recommending firms establish audit committees to oversee the financial reporting process. Corporate governance reformists have focused on audit committee effectiveness as a key in improving corporate financial reporting system, reporting of higher quality earnings. Effectiveness is cited as the key barometer that will determine the influence of an audit committee on financial accounting issues (Beasley and Salterio 2001; Abbott, Parker and Peters 2004). Kalbers and Fogarty (1993) argue audit committee effectiveness is a function of the sub-committee's power and authority over the monitoring of financial reporting practices, and the external and internal auditing process. DeZoort, Hermanson, Archambeault and Reed (2002) and Vera-Munoz (2005) state that an effective audit committee has qualified members with the authority and resources to protect shareholder interests by ensuring reliable financial reporting, internal controls and risk management through its diligent oversight efforts. Prior research has sought to link various alleged properties of audit committee effectiveness to financial reporting issues such as fraudulent financial reporting (Beasley 1996; Dechow, Sloan and Sweeney 1996), earnings management (Peasnell, Pope and Young 2000; Klein 2002a; Bédard, Chtourou and Courteau 2004; Abdul-Rahman and Mohamed-Ali 2006) internal control problems (Krishnan 2005b), restatements (Abbott et al. 2004) and auditor dismissal (Carcello and Neal 2003).

Whilst having not received much empirical attention as yet, audit committee effectiveness may also have a bearing on the extent to which conservative accounting practices are adhered to. For example, it is alleged there is a greater likelihood a more effective audit committee is able to enhance the quality of reported earnings (encourage greater earnings conservatism) as compared to a less effective audit committee (Klein 2002a; Mangena and Pike 2005; Ling 2007; Krishnan and Visvanathan 2008). Similar to auditor quality, there is no precise consensus on a definition of audit committee effectiveness. Many corporate governance advocates (Song and Windram 2000; DeZoort et al. 2002; Abbott et al. 2003a; Abbott et al. 2004; Noland, Nichols and Flesher 2004) suggest audit committee effectiveness is a function of key traits such as independence, financial expertise and diligence. Prior research (Beasley and Petroni 2001; Noland et al. 2004; Agrawal and Chadha 2005; Mangena and Pike 2005; Vera-Munoz 2005), for example, reports independent directors are less reluctant to question management's actions and policies that impact financial accounting numbers, thereby, leading to sounder accounting practices and better earnings quality. Meanwhile, audit committees with members having financial

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accounting expertise are more cognizant of financial reporting, accounting and auditing issues (McMullen and Raghunandan 1996). Thus, an audit committee comprised of members with greater financial expertise will have an increased ability to distinguish between conservative or aggressive accounting policies. Finally, audit committees meeting regularly are more capable of ensuring financial reporting practices are being followed on a timely basis (Menon and Williams 1994; Abbott et al. 2004; Bédard et al. 2004), and are more likely to detect internal control weaknesses (Krishnan 2005b). Consequently, a more diligent audit committee is likely to be associated with better financial accounting practices such as earnings conservatism leading to higher quality earnings reported.

Malaysian corporate governance regulations have gone through major changes since the Asian financial crisis.[5] Changes were designed, in part, to restore investor and shareholder confidence, and to increase the quality of financial reporting. A major component of Malaysia's corporate governance reform efforts involved the release of the Malaysian Code of Corporate Governance (*The Code*) in March 2000 by the Malaysian Institute of Corporate Governance (MICG)[6]. *The Code* provides a set of principles and best practices for firms related to corporate governance. The role and responsibilities of the external auditor and audit committee feature extensively in *The Code* with an emphasis on a need to preserve auditor quality and improve the effectiveness of the audit committee. Following the introduction of *The Code*, another major change in Malaysian corporate governance regulations occurred in January 2001. Specifically, the Bursa Malaysia Securities Berhad issued Revamped KLSE Listing Requirements requiring listed firms to state the level of compliance with the requirements of *The Code*. Issuance of the Revamped KLSE Listing Requirements further reinforced efforts by Malaysian regulators to improve auditor quality and audit committee effectiveness so as to improve the financial reporting process. The Malaysian Institute of Accountants (MIA) also has made several amendments to regulations governing external auditors since 2002. Amendments by the MIA were designed to enhance the auditor's role and responsibilities to better protect shareholder rights, increase investor confidence and encourage outside investment. Finally, the MICG has revised *The Code* (released October 1, 2007) and provided further amendments aimed at strengthening the board of directors and audit committees, and ensuring that the board of directors and audit committees discharge their roles and responsibilities effectively. These

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[5]The Asian financial crisis occurred between the second half of 1997 and August 1998. The crisis was triggered in Thailand when foreign investors lost their confidence and started to withdraw capital due to currency devaluation. The problem was transmitted to neighbouring nations with Malaysia being one such nation(Vichitsarawong, Eng and Meek 2010).
[6]MICG has continuously been the Malaysian authority active in reviewing and revising *The Code*, where appropriate, as seen with the Revised Code 2007 which focused on the eligibility criteria for appointment, composition as well as roles and responsibilities of boards of directors and audit committees.

amendments spell out the eligibility criteria for appointment of directors and the role of the nominating committee. With regards to the, audit committees, the amendments spell out the eligibility criteria for appointment as an audit committee member, the composition of audit committees, the frequency of meetings and the need for continuous training (Malaysian Code of Corporate Governance 2007).

Ball et al. (2003) argue shareholder litigation is an important factor in enforcing earnings conservatism in Common Law nations like Malaysia. However, Diga and Saudagaran (1998) report litigation risk in Malaysia to be low, thereby, reducing the incentive for managers to disclose bad news in a timely fashion. In this case, lower reported earnings quality and lower conservatism levels are expected. In a low litigation risk environment like Malaysia, responsibility for ensuring earnings conservatism to maintain earnings quality falls on key corporate governance mechanisms such as the auditor and audit committee. As Malaysian corporate governance regulations have gone through major changes introduced since 2000, numerous questions remain. For example, it is important to determine if recent corporate governance reforms (such as those affecting the auditor and audit committee) have prompted improvements in the quality of earnings, and level of earnings conservatism in Malaysia.

1.2   Research questions and objectives of the study

Ongoing concerns about the quality of earnings, exacerbated by enormous volatility in international capital markets driven by questions about financial sector financial results, is reinforcing the importance of conservatism. This emphasis is extending the need for greater insights into factors influencing conservative accounting practices. Given the close affinity between direct custodians (i.e. external auditors and audit committees) and the financial reporting system, it is appropriate that research should focus on any linkages with conservatism. However, whilst research on the influence of external auditor quality and audit committee effectiveness is increasingly emerging, the vast majority of studies related to the two key corporate governance custodians to date have focused predominantly on associations with the magnitude of earnings management (Becker et al. 1998; Peasnell et al. 2000; Jenkins 2002; Klein 2002a; Chen et al. 2005; Ling 2007). To the best knowledge of the author, there is at best limited formal examinations of linkages between key properties of the pivotal direct custodians of a firm's financial reporting system and earnings conservatism (especially in developing economies like Malaysia). Given that associations between key corporate governance custodians remains an unexplored and open important question, the overriding focus of this study is to address this imbalance by investigating the following main research question (*MRQ*):

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MRQ: *Is there an association between the excellence of direct custodians of the financial reporting system and the earnings conservatism of Malaysian publicly listed firms?*

As the *MRQ* implies the overarching objective of this study is analysis of the linkage between the combined influence of the key underlying features of direct custodians of the financial reporting system and earnings conservatism. The overarching objective, however, can be divided into two primary objectives. Specifically, the first primary objective is to determine if a higher quality external auditor is associated with higher levels of earnings conservatism whilst the second primary objective concentrates on the audit committee effectiveness–earnings conservatism linkage. These questions are stated as:

PRQ₁: *Is there an association between the quality of the external auditor and the earnings conservatism of Malaysian publicly listed firms?*
PRQ₂: *Is there an association between audit committee effectiveness and the earnings conservatism of Malaysian publicly listed firms?*

Prior research indicates external auditor quality and audit committee effectiveness are multi-dimensional concepts. Consequently, in support of the two primary objectives this study will address related secondary objectives that concentrate on the association between specific components of external auditor quality, that is, the level of non-audit services provided (proxy for independence), industry specialization and brand name and audit committee effectiveness (i.e. sub-committee independence, financial expertise and diligence), and the level of earnings conservatism. The main secondary research questions are stated as:

MSQ₁: *Is there an association between the specific components underlying external auditor quality (i.e. independence, specialization and brand) and the earnings conservatism of Malaysian publicly listed firms?*
MSQ₂: *Is there an association between the specific components underlying audit committee effectiveness (i.e. independence, financial expertise and diligence) and the earnings conservatism of Malaysian publicly listed firms?*

Finally, given the longitudinal nature of this study a third main secondary objective is to determine if earnings conservatism practices of Malaysian publicly listed firms changed between 2002 and 2007:

MSQ₃: *Has the extent of earnings conservatism amongst Malaysian publicly listed firms changed between 2002 and 2007?*

The intention of the study is to be as comprehensive as possible. Aside from the above questions, this study will also look at minor issues such as the effect of auditor quality and

audit committee effectiveness on the level of earnings conservatism in different industries and across different firm sizes (i.e. large versus small).

1.3   Significance and contributions of the study

This study provides several key contributions to the extant earnings conservatism and corporate governance literatures. First, it provides evidence of the influence of auditor quality and audit committee effectiveness (defined in this study as the direct custodians of a firm's financial reporting system) on earnings conservatism. Despite the mounting importance of corporate governance, previous analysis has not considered the influence of such key corporate governance features on conservatism, particularly in combination. For example, Krishnan and Visvanathan (2008) examined the association between conservatism and only a specific aspect of audit committee effectiveness (i.e. financial expertise of audit committee members) using US data. Meanwhile, Beekes, Pope and Young (2004) only examined the link between board composition and earnings timeliness and conservatism. Neither study considered the joint effects of other key corporate governance feature.

Second, most prior research related to earnings conservatism, has focused on determining the amount and benefits of conservatism with limited attention to factors influencing conservatism. For example, Ahmed, Billings, Morton and Stanford-Harris (2002) (using US data) found accounting conservatism plays an important role in mitigating bondholder–shareholder conflicts over dividend policy, and reductions in a firm's debt costs. Given the focus on determinants of earnings conservatism, this study provides new insights and broadens the understanding of conservative accounting practices.

Third, this study is conducted using data from an emerging market economy (i.e. Malaysia). Prior earnings conservatism research has focused heavily on developed nations, particularly the US and UK. For example, Lobo and Zhou (2006) using data from 4,441 US firms, found firms on average became more conservative in their financial reporting practices after the introduction of the Sarbanes–Oxley Act (SOX). Givoly and Hayn (2002), also using US data, found that financial reporting, already conservatively biased by accounting conventions, had become more conservative in the US since the early 1980s. Meanwhile, Ball and Shivakumar (2005), in a study using 7,683 UK firms, found that financial reporting quality (related to conservatism) is not affected by size, leverage, industry membership and auditor size, or by allowing endogenous listing choice. Moreover, Beekes et al. (2004), also using the UK data, show board composition is an important factor in determining the quality (earnings timeliness and conservatism) of a UK firm's reported earnings with respect to incorporating bad news on a timely basis. Previous studies using data from developed nations provide valuable insights but such findings may not be relevant

in emerging economies. This is because there are many structural differences between developed and emerging market economies. Thus, this study will provide insights into conservatism through an alternative national lens (Shakir 2007).

Fourth, since the Asian financial crisis, Malaysia's corporate governance regulatory system has gone through unprecedented changes designed to restore investor confidence, and to increase the quality of financial reporting. The external auditor and audit committee have featured prominently in regulatory changes—such as via the Malaysian Code of Corporate Governance (2000) and Revamped KLSE Listing Requirement 2001 (Bursa Malaysia 2001). Findings from this study will assist in determining if changes by Malaysian policy-makers of corporate governance regulations have potentially had indirect influences on conservatism. Overall, results will be informative to Malaysian regulators such as Securities Commission (SC), Central Bank of Malaysia, Companies Commission of Malaysia (CCM) providing guidance on the potential impact of future rules regulating auditors and audit committees.

1.4   General research design and main findings

The initial sample comprises all companies listed continuously (i.e. 847 firms) on the Bursa Malaysia from 1 January 2002 to 31 December 2007. From the initial sample relevant exclusions were made. First, all firms that had been liquidated, delisted and/or suspended during any part of the specified observation period were excluded. Then, consistent with prior literature, firms from the banking, finance, brokerage, and investment services industry were excluded. Next, to reduce any abnormalities associated with an IPO, all firms that listed during the 2001 calendar year were also excluded as were any firms subject to merger and acquisition activities during the observation window. Following the relevant exclusions, a random sample of 100 firms is selected giving approximate 600 firm-year observations for use in the statistical analysis. All the data is retrieved from DataStream Database. Data which is not available in the database is to be gathered through annual reports which are accessible from the Bursa Malaysia's websites. After exclusions for missing documentation and data, the final useable sample to be used in the analytical component of this study is 557 firm-year observations[7].

For dependence variable, earnings conservatism is measured using Basu (1997) model. Even though research suggests that earnings conservatism can be conceptualized in different ways, in this study, conservatism is defined in terms of both timeliness and persistence. The timeliness approach of earnings conservatism is grounded in the assumption that share prices reflect bad news in contemporaneous market losses earlier than good news

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[7] Please refer to Table 5.1 for detail sample selection process.

via market gains. While, earnings persistence presumes bad news reverses whilst good news persists. Whereas for independence variables, direct custodian excellence is derived as the function of audit quality (measured as a function of independence, specialization and brand name) and audit committee effectiveness (measured as a function of independence, financial expertise and diligence).

Findings from this study show limited support for the study's general proposition. Generally, the findings suggest that no evidence is found of direct custodian excellence mechanisms influencing the earnings conservatism. Specifically, there is no evidence that the quality of the external auditor influencing the timeliness of earnings conservatism. However, there is some evidence to support the view that a Malaysian publicly listed firm engaging a higher quality auditor is more likely to have higher levels of persistent earnings conservatism than a counterpart using the services of a lower quality external auditor. While for audit committee effectiveness, findings indicate there is no evidence is found that audit committee effectiveness is influencing earnings conservatism in the Malaysian capital market.

Overall, findings from this study provide valuable insights and understanding in respect to the direct custodian excellence/earnings conservatism linkage and the significance of corporate governance and earnings conservatism/quality concepts. Findings from this study also highlighting important insights with significant implications, for various key financial accounting stakeholders (e.g. regulators, corporate management, practitioners, investors and scholars).

1.5   Outline of the thesis

The thesis comprises eight chapters. Chapter 1 provided an overview of this study. Key research objectives and the significance of this study were indicated. The latter discussion in this chapter focused on the limitations of the study.

An in-depth literature review on earnings conservatism is covered in Chapter 2. The first part of the discussion is focused on the concept and definition of conservatism. Subsequently, the central emphasis on the issue of earnings conservatism such as trends in conservatism in the US, European nations, Australasia, East Asia, South-East Asia, and particularly earnings conservatism in Malaysia, is discussed. This is followed by explanations of conservatism as well as determinants of earnings conservatism.

Chapter 3 details the theoretical framework used in this study. This chapter discusses the possible influence of corporate governance mechanisms on earnings conservatism. A few potential theories underlying the theoretical framework of this study are then outlined. Subsequently, this chapter focuses on the corporate governance environment in Malaysia including the equity market regulatory environment, the financial accounting system and

auditing environment. The latter discussion of this chapter defines the prime concepts of the study (i.e. direct custodian excellence, auditor quality and audit committee effectiveness). Discussion on how these variables affect earnings conservatism provides the foundation of the development of the hypotheses underpinning this study. Thereafter, the conceptual schema is developed with a diagrammatical overview presented.

Chapter 4 outlines the research method adopted in this study. Discussion on sample selection and data collection approaches are detailed in this chapter. Subsequently, this chapter emphasizes on the instrumentation used in measuring the study's key variables (i.e. dependent and independent variables). Justification for the selection of the relevant proxy measures is also outlined in this chapter. Finally, detailed major statistical tests and regression models inclusive of robustness and sensitivity tests to be performed are specified.

Main descriptive statistics are reported in Chapter 5. The first part of this chapter focuses on the sample selection process in determining the final usable sample. Descriptive statistics associated with key firm characteristics (i.e. firm size and financial performance) are then thoroughly discussed. The later part of this chapter outlines descriptive results of the two main variables associated with direct custodian excellence (i.e. auditor quality and audit committee effectiveness).

Meanwhile, Chapter 6 presents the study's main multivariate analysis findings. The first part of discussion in this chapter outlines the multiple regression analysis results using the Basu (1997) base models of timeliness and persistence. Subsequently, statistical results of analysis examining the impact of direct custodian excellence on earnings conservatism are then presented. Finally, statistical results of analysis testing the individual effects of auditor quality and audit committee effectiveness on earnings conservatism are reported.

In Chapter 7, major sensitivity and robustness tests conducted for this study are presented. This additional analysis provides further insights in determining any impact on the main findings reported in Chapter 6. Additional tests included: (i) use alternative measure earnings conservatism; (ii) alternative measures of earnings and return; (iii) revised composite scores computed after excluding auditor brand name and industry specialization; (iv) industry and auditor classification (*Big 4* and *Non-Big 4*); and (v) individual audit quality and audit committee effectiveness components.

Chapter 8 summarizes the key findings of this study. Discussion on the acceptance or rejection of the study's testable hypotheses is outlined in this chapter. In addition, implications from the analysis are discussed in respect to methodology, future research, and the competing interests of investors, regulators, practitioners and corporate management. Finally, findings of this study are reviewed concluding with suggestions for future research directions.

CHAPTER 2   CONSERVATISM LITERATURE

2.1   Introduction

The previous chapter provided background and motivation of the study. Key research questions and objectives of the study were then outlined. A later part discussed the significance and limitation of the study. In Chapter 2, an in-depth literature review on earnings conservatism is covered. The first section provides a comprehensive review of literature related to conservatism with various definitions discussed. Then, discussion on the central emphasis of issues related to earnings conservatism such as trends in conservatism in various countries such as the US, European nations, Australasia nations and Asian countries is presented. The next section discusses the four explanations of earnings conservatism; that is: (i) contracting; (ii) litigation; (iii) taxation; and (iv) accounting and institutional regulations. The final section of the chapter discusses the determinants of earnings conservatism, with particular emphasis given to corporate governance features.

2.2   Different types of conservatism

Sterling (1970) suggests that conservatism is the most influential principle of valuation in accounting. The reason for using conservatism in accounting practice is the existence of uncertainty and difficult-to-predict future benefits of certain economic assets and liabilities (Devine 1963 as cited in Kung 2005). Conservatism is an important underlying attribute of reporting quality that is often used by capital market participants to benchmark the quality of a firm's earnings (Kung et al. 2008). Conservatism also makes financial statements more informative and useful. Thus, stakeholders are better able to monitor a firm's performance (Ball and Shivakumar 2005). In addition, conservatism is thought to provide more timely information giving shareholders and creditors better opportunities to make key decisions on loss making projects (Ball et al. 2003). Moreover, it is recognized that conservatism is an effective mechanism for constraining managerial opportunistic behaviour (Kung et al. 2008) such as manipulation of earnings. Despite criticism of conservatism, prior research indicates earnings conservatism has increased in the past decades (Givoly and Hayn 2000, 2002; Lobo and Zhou 2006).

According to Bliss in 1924 (as cited in Basu 1997), conservatism is a state of mind. Specifically, it (conservatism) is an attitude that favors excessive cautiousness when there is a need to choose between alternative accounting treatments in relation to any particular accounting issue. Accountants apply conservatism as an admonition to anticipate no profit but anticipate all losses (Basu 1997). Generally, accounting conservatism is defined as an action of accelerating expenses and deferring revenue recognitions. Textbooks commonly present conservatism as the choice (by regulators or firms) of an accounting treatment (when

selecting among two or more reporting alternatives) that is least likely to overstate assets and income (Revsine, Collins and Johnson 2002; Kieso, Weygandt and Warfield 2004).

As noted above, there is presently a lack of consensus on a precise definition of earnings conservatism. Such a lack of consensus stems in part from ambiguity associated with the concept of conservatism. Such ambiguity has resulted from the lack of attempts to standardize definitions and the lack of a prescribed set of feasible actions taken to arrive at an acceptable level of conservatism (Givoly and Hayn 2000; Kung 2005). In the absence of a consensus on a definition of conservatism researchers generally have tried to measure conservatism by examining properties of either balance sheet items or income statement information such as asymmetric timeliness in earnings (Basu 1997), overall downward bias in book value relative to market value (Beaver and Ryan 2005) or downward bias in earnings and book value because of specific accounting choices (Penman and Zhang 2002).

Also, researchers tend to define conservatism into two parts:(i) conditional and (ii) unconditional conservatism (Beaver and Ryan 2005). Unconditional conservatism – also known as ex-ante (Richardson and Tinaikar 2004) or news dependent conservatism (Chandra, Wasley and Waymire 2004) – stems from the application of GAAP or accounting policies that reduce earnings independent of current economic news. The concept of unconditional conservatism is usually identified as an accounting bias toward reporting low book values (that enhances stockholders equity) which is independent of economic income (Kung 2005). Examples of unconditional conservatism include the use of historical cost accounting, accelerated depreciation, last-in-first-out method, pooling-of-interests for mergers and acquisition, and immediate expensing of costs associated with internally created intangible assets even if associated with positive expected future cash flows. Under the unconditional conservatism concept, Beaver and Ryan (2005) define conservatism as the average understatement of the book value of net assets, relative to the asset's market value, which is the existence of expected unrecorded goodwill. This definition is consistent with Feltham and Ohlson (1995) who expect that reported net assets will be less than market value in the long run.

Conditional conservatism, meanwhile, is also known as ex-post (Richardson and Tinaikar 2004), news independent conservatism (Chandra et al. 2004), or asymmetric income timeliness (Basu 1997). Conditional conservatism is defined as a tendency to accelerate losses and defer gains (Kung 2005). Specifically, it refers to the write down of book values under sufficiently adverse circumstances (or reduced present value of expected future cash flows from assets), but not the write up of book value under favorable circumstances. Examples include the lower-of-market rule, goodwill write downs following impairment testing, and asymmetric recognition of contingent losses and contingent gains.

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In the absence of a generally accepted definition of earnings conservatism, the prime options available to this study are to develop a unique definition, establish a synthesized definition based on several other studies, or adopt verbatim an established definition. Whilst there is merit in developing a unique or synthesized definition based on a strong theoretical foundation which is acceptable to empirical researchers, such an objective is not the primary goal of this study. Rather, this study is strictly empirical in nature. Consequently, rather than distract attention from the empirical analysis and findings by developing and debating the merits of a unique or synthesized definition, this study adopts a definition commonly used in previous related empirical research.

One such commonly used definition applied in prior empirical based conservatism studies (Beekes et al. 2004; Pae, Thornton and Welker 2005; Lobo and Zhou 2006; Ruddock, Taylor and Taylor 2006) is that developed by Basu (1997). He (Basu 1997) defines earnings conservatism as earnings reflecting bad news more quickly than good news, where a higher degree of verification is preferred by accountants to recognize good news as gains than to recognized bad news as losses. The Basu (1997) definition of earnings conservatism focuses on the protection of shareholders. Shareholders always demand to be informed in a timely way through financial statements in order to be able to make their decisions. In the case of bad news, the demand for timely information will be more crucial. In addition, Basu (1997) argues that debt holders and other creditors demand timely information about bad news because the option value of their claims is more sensitive to a decline than an increase in firm value. Given the longevity of the Basu (1997) definition, and usage in prior empirical research, this study adopts this definition as the underlying premise of earnings conservatism.

2.3 Literature review of trends in earnings conservatism

Earnings conservatism is recognized as an important issue in respect to earnings quality. Nonetheless, prior empirical research is less prevalent than studies examining other concepts thought to underpin earnings quality, in particular earnings management. Furthermore, studies of earnings conservatism have predominantly relied on data drawn from the US or UK. The following subsections provide a review of the major empirical research of earnings conservatism conducted in prominent nations and regions to provide key background for this study.

2.3.1 Earnings conservatism in the US

The US accounting literature has a lengthy history debating the role of conservatism in financial accounting. Before World War I, financial accounting textbooks argued about the appropriateness of the lower of cost or market rule for inventory (Hatfield 1909 p.101-

104 as cited in Basu 2005). Various US empirical studies tend to examine earnings conservatism across time. According to Givoly and Hayn (2002), there has been a growing trend in the US towards greater conservatism since the early 1980s. This increase is highlighted during the past several decades of earlier recognition of expenses instilled in many new accounting standards such as those dealing with employee benefits and compensation (contracting) and standards on impairment of assets. Also, increasing litigation in the US seems to have led auditors and managers to adopt more conservative reporting (Watts 2003a; Lobo and Zhou 2006; Amir, Guan and Livne 2009). This is because a firm that overstates profit and net assets is more likely to incur litigation costs than a firm which understates profits and net assets (Hogan and Jeter 1999; Holthausen and Watts 2001). Givoly and Hayn (2002), however, speculated that in the new economic era dominated by firms with higher market-to-book values conservative accounting practices would decline.

Basu (1997) used the earnings/stock return relationship to examine conservatism levels in the US during high and low litigation growth periods (1963–1966, 1967–1975, 1976–1983, 1983–1990). High and low litigation period were originally identified by Kothari, Lys, Smith, and Watts (1988). Based on the analysis of 43,321 firm-year observations, Basu (1997) found earnings sensitivity to current negative returns increased relative to earnings sensitivity to current positive returns across the period 1963–1990. This finding is perceived to be consistent with increases in accounting conservatism over time (Basu 1997). The significant increases in earnings conservatism during high litigation growth periods but not in low litigation growths periods were attributed to two factors. The first factor was a perceived significant increase in the legal liability exposure of auditors and corporate management managers due to less timely disclosures of bad news during the observation period last 3 decades. The second factor was greater demand from contracting parties for the higher adoption of conservative accounting practices. Results presented by Basu (1997) were consistent with auditors tightening impairment triggers when exposed to greater liability but loosening the impairment triggers when exposure was reduced.

Holthausen and Watts (2001) argued financial reporting in the US should have been significantly conservative pre-1967. This is because contracting incentives favoured the adoption of conservative accounting practices during that period (Holthausen and Watts 2001). The increase in litigation risk toward the end of the 1960s prompted Holthausen and Watts (2001) to speculate this further spurred an increase in conservative accounting practices in the 1970s and 1980s. Using the same earnings/stock returns relationship to measure conservatism, the results of Holthausen and Watts (2001) were consistent with Basu (1997), that is, a significant increase in earnings conservatism, particularly in the three litigation periods examined by Basu (1997). Holthausen and Watts (2001), however, point

out earnings conservatism significantly increased in non-litigation periods (i.e. 1927–1941 and 1954–1966).

Based on the empirical findings of Basu (1997) and Holthausen and Watts (2001), Watts (2003b) concluded the earnings of US firms are not timely in reflecting good news but are in reflecting bad news. Watts (2003b) further suggested the significant increases in conservatism partially stemmed from the standard setting activities of the Financial Accounting Standard Board (FASB). In paragraph 95 of the Financial Accounting Standards Board (FASB), conservatism is also described as ―‖ there are two estimations of the same receivable or payable fund in the future while incidence probability of both is identical, then conservatism dictates the use of the estimation which is less optimistic" (FASB 2011 para. 95). This resulted in fewer accepted accounting techniques such as: (i) recognition of sale revenue; (ii) faster recognition of cost; (iii) evaluation of assets less than real values; and (iv) evaluation of liabilities greater than real values (Kazemi, Hemmati and Faridvand 2011).

More recent studies of earnings conservatism within the US capital market have continued to focus on identifying whether conservatism has continued to increase. Such studies have adopted alternative approaches to measuring earnings conservatism. Nonetheless, these more recent studies show earnings conservatism in the US continues to increase in more recent time periods. For example, Kim and Kross (2005) report increases in conservatism in the US during the period 1973 to 2000. Based on the analysis of 100,266 firm-year observations, they (Kim and Kross 2005) found the relationship between current earnings and future operating cash flows increased significantly during the aforementioned observation period in the US.

Meanwhile, Lobo and Zhou (2006), using a sample of 4,441 US firms, found that relative to the two years preceding the introduction of the Sarbanes-Oxley Act in 2002, earnings conservatism had significant increases within two years of the introduction of such significant legislation. Finally, using a sample of 99,109 firm-year observations, Srivastava and Tse (2007) found the level of conservatism increased during the 1972–2006 time period amongst US high technology firms. They (Srivastava and Tse 2007) found the increase in conservatism was primarily due to the delayed recognition of gains rather than the prompt recognition of losses. Thus, Srivastava and Tse (2007) suggest this explains why conservatism increased more rapidly in high technology industries relative to other industries in more recent decades. Table 2.1 provides a summary of major US-based studies of earnings conservatism.

Table 2.1: Summary table for studies of trends in earnings conservatism in the US.

Author (s)	Title	Focus	Period covered	Findings
Ball, Kothari and Robin (2000)	The effect of international institutional factors on properties of accounting earnings	US. 40,000 firm-year observations	1985–1995	Level of conservatism will vary depending on the institutional context or remain a function of its political and legal systems. There is a significant increase in the conservatism level in the US for the period of 1985 to 1995. For the US, (a Common Law nation), accounting numbers are used to reduce info asymmetry among stakeholders and thus demand more conservative reporting. Common Law nations (e.g. US) are significantly more timely than Code Law nations due entirely to quicker incorporation of economic losses (income conservatism).
Basu (1997)	The conservatism principle and the asymmetric timeliness of earnings	US.43,321 firms	1963–1990	The earnings sensitivity to current negative returns increased relative to earnings sensitivity to current positive returns over the period 1963–1990, consistent with accounting conservatism increasing over time. Two factors attributed to this increases, (i) the legal liability exposure of auditors and managers for tardy disclosure of bad news has increased significantly over the last 3 decades, and (ii) contracting parties increased their demand for conservatism.
Givoly and Hayn (2002)	Rising conservatism: Implications for financial analysis	US. 896 firms	1968–1998	Financial reporting already conservatively biased by accounting conventions has become more conservative since the early 1980s.
Kim and Kross (2005)	The ability of earnings to predict future operating cash flows has been increasing, not decreasing	US. 100,266 firms	1973–2000	Relationship between current earnings and future operating cash flows has increased over time (evidence of accounting conservatism)
Lobo and Zhou (2006)	Did conservatism in financial reporting increase after the Sarbanes-Oxley Act? Initial evidence	US. 4,441 firms	Pre and post SOX (2 years before and 2 years after SOX)	Firms on average are more conservative in their financial reporting after the introduction of the Sarbanes–Oxley Act (SEC requires that Chief Executive Officer and Chief Financial Officer certify their financial statement, reducing potential earning overstatements) than they were in the two years immediately preceding the introduction of the Sarbanes–Oxley Act. It is concluded that litigations under Securities Acts encourage conservatism because litigation is much more likely when earnings are overstated.
Srivastava and Tse (2007)	What drives changes in accounting conservatism? The effects of the promptness of recognizing anticipated gains versus losses in conservatism	US.99,109 firm-year observations	1972–2006	Level of conservatism increased more rapidly in high technology industries in the US rather than other industries over the period of 1972 to 2006 due to slower gains recognized and accelerated losses recognized.

2.3.2   Earnings conservatism in European nations

Relative to US studies[8], research of earning conservatism in Europe tends to focus on cross-nation comparisons of the levels of conservatism rather than time-series analysis of individual nations. For example, Ball, Kothari and Robin (2000) analyzed the earnings conservatism of US and non-US firms (including European firms) from 1985 to 1995. They (Ball et al. 2000) reported earnings amongst UK firms relative to US firms were five times more sensitive to negative returns than to positive returns. Ball et al. (2000)concluded based on their findings that UK accounting was less conservative than the US accounting.

Also, Ball et al. (2000) questioned the influence of the legal system on earnings conservatism. Differences in legal systems are important within the context of discussions related to Europe. This is because the legal systems of nations around the world inherently stem from Europe; in particular, the influence of the UK in respect to Common Law and France and Germany in regards to Code Law. Ball et al. (2000) examined the demand of accounting income in seven international GAAP regimes. They (Ball et al. 2000) divided these regimes into Code Law and Common Law nations respectively. Empirical results showed the level of conservatism varied depending on the institutional context, or remained a function of a nation's political and legal systems. It was found that in Code Law nations such as France and Germany there was less demand for conservatism practices (Ball et al. 2000). This is because accounting numbers used to resolve issues between stakeholders were conveyed privately. In contrast, for Common Law nations such as the UK accounting numbers were used more openly to reduce information asymmetry amongst capital market participants. To avoid conflicts and legal action more conservative reporting practices were adopted. Among Common Law nations the UK was deemed to have less asymmetric conservatism relative to the US due to lower political involvement in accounting, lower litigation costs and less issuance of public debt (Ball et al. 2000).

Meanwhile, Giner and Rees (2001)[9] found that during the period 1990 to 1998, asymmetric recognition was generally stronger in the UK than France and Germany. However, they (Giner and Rees 2001) failed to find any significant differences across these nations, thereby suggesting harmonization of accounting practices between these nations during the time period under observation. Their (Giner and Rees 2001)result is further supported by Lara and Mora (2004). They (Lara and Mora 2004) examined the level of conservatism in eight European nations (i.e. the UK, Germany, France, Switzerland,

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[8] It is acknowledged a number of studies have been conducted of earnings conservatism in the US. For brevity (given the majority of studies of US data lead to similar trends) only major seminal studies are listed (in alphabetical order). A more comprehensive summary of studies examining trends in earnings conservatism in the US is provided in Appendix A: Table A:1.

[9] This study also indicates results of earnings conservatism in other nations. However, the author of this study focuses on European nations only. The findings for other nations are irrelevant to this discussion.

Netherland, Italy, Spain and Belgium) from 1997 to 2000. They (Lara and Mora 2004) found that the overall level of conservatism was statistically similar across nations. Lara and Mora (2004) argued differences in institutional factors across European nations were not as pronounced as reported in the previous literature.

In a recent study, Goncharov and Hodgson (2011) examined debt holders decisions especially for contracting by assessing the extent of asymmetric timeliness of news recognition. By using 56,702 firm-year observations, they (Goncharov and Hodgson 2011) found significant results of earnings conservatism (timeliness and persistence) in 16 European countries[10] over the period of 1991–2005. Nonetheless, it is generally suggested European firms are reporting more conservatively over time in order to improve the ability to raise capital in the expanding global debt and equity markets (Basu, Hwang and Jan 2001; Goncharov and Hodgson 2011).

2.3.3   *Earnings conservatism in Australia and New Zealand*

Research of earnings conservatism in Australia (whilst limited) suggests, like the US, that conservative financial accounting practices have increased across time. For example, Balkrishna, Coulton and Taylor (2007) examined conservative financial accounting practices of Australian firms over the period of 1993–2003 using a sample of 5,980 firm-year observations. They (Balkrishna et al. 2007) found that Australian firms frequently report losses. The average magnitude of losses in the early 1990s was approximately equal to 16% of beginning period total assets. By the early 2000s the average had increased to above 35%. Balkrishna et al. (2007) suggested this result demonstrates a statistically significant increase in conditional conservatism among loss years relative to years in which profits are reported. Over the period 1993 to 2003, losses – though not only extremely common among Australian listed firms –were also reported more frequently. Moreover, Balkrishna et al. (2007) reported losses had a tendency to persist. This result is consistent with a prior study of Australian firms (using a sample of 1,321 firm-year observations) from the period 1985 to 1995 (Ball et al. 2000) . They (Ball et al. 2000) found that like other Common Law nations Australian stakeholders demand more conservative accounting to reduce information asymmetry.

Research has indicated that whilst earnings conservatism in Australia appears to have increased in the private sector it may extend to the public arena. Pinnuck and Potter (2009), for example, examined the quality of accounting earnings across a large sample of Australian local governments (2058 observations representing 67% of total local government firm-year observations) from 1996 to 2003. They (Pinnuck and Potter 2009) found no

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[10]Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK.

evidence of conservatism in the earnings across Australian local governments in general. Nevertheless, where there is a clear use of accounting for contracting purposes, Pinnuck and Potter (2009) report evidence of conservatism in financial reports of large local governments.

In respect to New Zealand, very few empirical studies have been undertaken in respect to earnings conservatism. Zhang and Emanuel (2008) provide the first evidence of existence of earnings conservatism in New Zealand during 1995 to 2001 by using Basu's (1997) model. By using 176 New Zealand firms (528 firm-year observations), Zhang and Emanuel (2008), examined the relationship between non-audit services provided by incumbent auditors and earnings conservatism. They (Zhang and Emanuel 2008) hypothesized that a negative relation exists between the provision of non-audit services and clients' earnings conservatism. The result is consistent with the finding of Ball et al. (2000) and Ball et al. (2003) which display significant earnings conservatism in Common Law nations. Overall result suggests that earnings are more responsive to contemporaneous bad news in New Zealand. However, they (Zhang and Emanuel 2008) failed to find any evidence of a higher level of non-audit services being associated with reduced earnings conservatism.

2.3.4   Earnings conservatism in East Asia (PRC, Japan and Hong Kong)

Ball et al. (2000) examined accounting regulations in the People's Republic of China (PRC) via a comparison between Chinese GAAP and International Financial Reporting Standards (IFRS). They (Ball et al. 2000) found that despite _alleged' improvements in reporting standards, firms using IFRS based standard to determine financial accounting earnings did not show a higher level of conservatism than counterparts using Chinese GAAP. Ball et al. (2000) suggested the accounting infrastructure in the PRC could not be changed independently of wider economic, legal and political infrastructure. Thus, conservatism levels in the PRC were likely to be determined essentially by market forces, institutional factors and incentives posed by managers and auditors.

A recent study by Kung (2005), however, shows earning conservatism in the PRC increased significantly over time. Kung (2005) assessed whether existing institutional differences affected the level of accounting conservatism in the PRC market place. His (Kung 2005) results showed that not only had the demand for accounting conservatism in the PRC increased significantly over time, but also suggested greater attention was paid to accounting conservatism by stakeholders. This may be due to an increased interest in reporting quality driven (in part) by the increasing complexity of transactions, growing corporate governance importance, and recent accounting scandals in the PRC (Kung 2005).

Commonly categorized as a Code Law nation, previous studies show Japan demands less of conservatism practices as compared to Common Law nations (Ball et al. 2000;

LaFond 2005; Bushman and Piotroski 2006). However, a few studies show demand on conservatism for Japanese firms. For example, Tazawa (2003) examines the effect of conservatism in Japan during 1975 to 1999 with a total of 20,218 firm-year observations. He (Tazawa 2003) argued that Japan has a unique ownership structure which includes bank and cross-shareholdings and these groups play an important role in corporate governance of Japanese firms. He (Tazawa 2003) suggested that managerial ownership has a strong effect on the demand for accounting conservatism to reduce agency costs. Following the Basu (1997) model, he (Tazawa 2003) found asymmetric timeliness and persistence of earnings under Japanese GAAP (i.e. earnings reflects bad news a more timely fashion than good news).

This is supported by a recent study (Shuto and Takada 2011). By using 27,448 firm-year observations covering 15 years from 1991 to 2005, Shuto and Takada (2011)examined the effect of the fraction of shares owned by directors on accounting conservatism. By using the Basu (1997) model, they (Shuto and Takada 2011) found that managerial ownership had a strong effect on the demand for accounting conservatism and thus helps in addressing the agency problem between managers and shareholders. Moreover, managers with larger shareholdings have a stronger incentive to act in line with shareholders' interests.

Another pivotal capital market in East Asia is Hong Kong. Whilst this capital market has received the attention of researchers on various financial and accounting issues, earnings conservatism has received little if any active attention. In a departure from other international capital markets based on Common Law (such as the US, UK and Australia), a study by Gul, Srinidhi and Shieh (2002) found earnings conservatism has decreased during the 1990s in Hong Kong due to a decline in economic conditions. Specifically, from 1996 to 1997, Hong Kong has suffered a major financial downturn. Gul et al. (2002) argued the severity of the financial downturn put pressure on managers to convey more positive news to the investors. They (Gul et al. 2002) compared earnings conservatism levels of Hong Kong firms in the two years before the downturn (1994–1995) with the two years of the downturn (1996–1997). Results show earnings conservatism decreased significantly during the downturn, supporting the arguments of Gul et al. (2002). Also, they (Gul et al. 2002) showed an inverse association between yearly accounting conservatism and average audit fees.

2.3.5   *Earnings conservatism in the South-East Asia group*

Studies of South-East Asian nations neighbouring Malaysia are limited. In an international comparative analysis, Ball et al. (2003) did examine some South-East Asian nations such as Singapore and Thailand. They (Ball et al. 2003) suggested South-East Asian nations were subject to high quality accounting regulations—heavily influenced by UK, US or International Accounting Standards (IAS) frameworks. However, institutional features in

South-East Asian nations generally provided incentives for low-quality financial reporting. Ball et al. (2003) found accounting regulations had a second-order effect on financial reporting practices in South-East Asian nations neighbouring Malaysia but did not have as great an effect on conservatism as compared to managerial incentives. South-East Asian nations were considered to be significantly less conservative than Common Law nations such as the UK and Australia. Results of the analysis by Ball et al. (2003) suggested that the quality of financial reporting in South-East Asian nation will not be improved by mandating accounting regulations alone, and that institutional settings in these nations profoundly affect firm reporting incentives (thus, less conservative reporting is supplied).

Equity ownership in South-East Asian nations based on tight family cross-holdings provides disincentives for improvements in reporting quality, including conservatism. Family controlled businesses in East Asian nations reduce the demand for public disclosure and thus demand less conservatism in accounting. Other factors may also reduce incentives for high quality conservative accounting practices in South-East Asian nations. Private loans from banks, for example, constitute a major source of financing instead of public debts and equity. Due to the close relationship, key financial accounting information may be provided privately rather than publicly. Also, shareholder litigation against corporations and auditors in South-East Asian nations is generally infrequent. For example, Diga and Saudagaran (1998) reported no judicial actions against auditors had occurred in Thailand up till mid-1990, whilst lawsuits against auditors in Singapore are minimal.

Nevertheless, a recent study (Vichitsarawong et al. 2010) which examined conservatism and earnings timeliness in Hong Kong, Malaysia, Singapore and Thailand, found that following the crisis (1999–2004), accounting conservatism in the East Asian countries has improved and is even higher than in the pre-crisis period. They (Vichitsarawong et al. 2010) suggest that this positive impact on conservatism and timeliness of earnings could be due to improvement in corporate governance. Nevertheless, their (Vichitsarawong et al. 2010) findings strongly supported an increase in conservatism for Singapore, but partially supported an increase in conservatism for Thailand. Different levels of corporate governance could be the reason for the difference caused.

2.3.6   *Earnings conservatism in Malaysia*

The Asian financial crisis that swept across Asian economies in 1997–1998 raises serious questions about transparency, disclosure, and the role of accounting in producing reliable and relevant financial information (Rahman 1998). Accordingly, Ku Ismail and Abdullah (1999) surveyed the earnings quality of 13 Malaysian public firms with respect to accounting conservatism. Ku Ismail and Abdullah (1999) found 73% of respondents agreed that there was a direct and positive association between accounting conservatism and

earnings quality. They (Ku Ismail and Abdullah 1999) also found that of 14 accounting policies examined, the practice of capitalizing period costs was perceived to have the greatest impact on the degree of conservatism. However, despite the perceived importance of conservatism on earnings quality, Ball et al. (2000) (using 1985–1995 data) found no evidence of conservatism in Malaysia.

According to Ball et al. (2003), equity ownership in Malaysia is typified by closely held family cross-holdings that reduce the incentives to disclose information publicly. Furthermore, like other South-East Asian nations, private bank loans constitute a major source of financing rather than use of public debt and equity instruments; thus, again less incentive to report publicly and to improve earnings quality. Ball et al. (2003) suggest the lack of demand for public disclosure of information affects the properties of reported accounting information, including adoption of conservative accounting practices. Accounting numbers in Malaysia are traditionally lacking in transparency and timeliness (e.g. timely disclosure of information in general including negative news) relative to other Common Law nations like the US and UK. Moreover, there had been very few judicial actions against auditors that could have stimulated practices of conservatism in Malaysia before the Asian financial crisis (see Diga and Saudagaran 1998; Krishnan 2011). Nevertheless, Krishnan (2011) reported a recent spate of financial scandals involving auditors which occurred in Malaysia during the post Asian financial crisis[11].

Despite the lack of evidence of demand for earnings quality in previous years, recent researchers (Mohamed-Yunos, Smith and Ismail 2010; Mohammed, Ahmed and Ji 2010; Vichitsarawong et al. 2010) exhibit empirical findings that earnings quality (e.g. earnings conservatism) in Malaysia has improved. Vichitsarawong et al. (2010), for example, examined the impact of the Asian financial crisis on conservatism using Basu's model and the accumulation of non-operating accruals suggested by Givoly and Hyan. They (Vichitsarawong et al. 2010) found that conservatism and timeliness of earnings during the crisis period (1997) were low. This was due to the practice of aggressive accounting to convey more positive information to the public in order to reduce the negative impact of the crisis. However, following the crisis (1999–2004), East Asian nations, particularly Malaysia, introduced improvement in corporate governance. Thus, findings of Vichitsarawong et al. (2010) indicate accounting conservatism improved in the post-crisis periods. This might be due to corporate governance reforms contributing to more transparent financial reporting.

Another study by Mohammed et al. (2010) using 207 Malaysian firms for the period of 2004–2007, examined the relationship between accounting conservatism, corporate

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[11] Financial scandals involving auditors which occurred in Malaysia include the case of Technology Resources Industries Bhd (TRI), Cold Storage (Malaysia) Bhd (CSMB), Transmile Group Bhd, Ocean Capital Bhd, Megan Media Holdings Bhd, Bumiputra Commerce-Holdings Bhd (BCHB) and Fountain Views Development Bhd.

governance and political influence in Malaysia. Their (Mohammed et al. 2010) results provide evidence of conditional conservatism in Malaysia. Specifically, they (Mohammed et al. 2010) found that audit committee size and independence are related to conditional conservatism. However, political influence is found to be unrelated to conservatism. This study is consistent with the results of Vichitsarawong et al. (2010). Finally, Mohamed-Yunos et al. (2010) who examined the relationship between accounting conservatism and ownership concentration amongst 300 non-financial Malaysian firms (2001–2007) found that corporate governance mechanisms (board independence, board tenure, board size and auditor) significantly influenced earnings timeliness. Nevertheless, the findings implied that accounting conservatism is not an effective governance tool if it is under the control of the substantial shareholders.

2.3.7 *Summary of literature review of trends in earnings conservatism*

In the earlier years, a number of studies in the US tended to examine earnings conservatism across time. Empirical evidences exhibit that there is a significant increase of earnings conservatism over time in the US. Legal liability exposure and greater demand from contracting parties have led auditors and managers to adopt more conservative reporting. Relative to US counterparts, studies on earning conservatism in Europe are more likely to focus on cross-country comparisons of the levels of conservatism rather than time-series analysis of individual nations. This research provides evidence that a different legal system such as Common Law and Code Law is important within the context of earnings conservatism discussions. Demand for earnings conservatism in Common Law nations, such as the UK, Australia and New Zealand, are higher than in Code Law nations, such as France and Germany. However, recent study shows that in order to improve the ability to raise capital in the expanding global debt and equity markets, both Common Law firms and Code Law firms are reporting more conservatively.

Similarly, literature shows earnings conservatism in the PRC and Japan has significantly increased over time. The growing importance of corporate governance and recent accounting scandals in the PRC has a great impact on how management reports earnings. Meanwhile, demand for earnings conservatism in South-East Asian nations is generally low compared to other countries. This could be contributed to family controlled businesses in South-East Asian nations reducing the demand for public disclosure and thus demanding less conservatism in accounting. Nevertheless, despite the lack of demand for conservative practices in financial reporting, the 1997–1998 financial crisis that badly affected South-East Asian economies provided a wake-up call. Consequently, most South-East Asian nations, particularly Malaysia, revamped corporate governance mechanisms to regain investor confidence via higher quality of earnings (i.e. conservative reporting).

2.4   Explanations for existence of earnings conservatism

Whilst the majority of earnings conservatism research has tended to focus on determining the concepts existence and level (whether in a specific nation or a cross-border comparison) some more limited work has sought to identify the origins underpinning earnings conservatism and why this phenomenon may persist. In a seminal work in this area, Watts (2003a, 2003b) suggested accounting conservatism was a function of contracting, litigation, taxation and accounting regulations.

2.4.1   Contracting

Basu (1997) and Watts (2003a) suggest contracting considerations are one of the major factors that explain the origin of conservatism. According to the contracting perspective the overstatement of earnings can lead to higher payments to corporate management, thereby increasing agency costs. Pae et al. (2005) argued excessive payments to corporate management are generally difficult (if not impossible) to recover. Thus, shareholders demand corporate management adopt conservative accounting practices in reporting earnings to constrain earnings-based payments to corporate management.

The overstatement of earnings may also affect other contractual arrangements. For instance, overstatement of earnings can give rise to excessive dividend distributions that reduce assets available to creditors or bondholders in making any claims against the firm to regain debts. As a result, creditors and bondholders are likely to demand greater earnings conservatism to preserve their (i.e. creditors and bondholders) interests (Watts and Zimmerman 1986; Watts 2003a, 2003b). This suggestion has been supported by prior empirical research. Ahmed et al. (2002), for example, found accounting conservatism plays an important role in mitigating bondholder–shareholder conflicts over dividend policy, and reducing a firm's debt costs. Also, prior studies (Dechow et al. 1996; Dichev and Skinner 2002; Klein 2002a) suggest the ability of shareholders and debt holders to enforce demands for conservatism is greater when equity and debt governance mechanisms are stronger. Accordingly, firms with stronger equity and debt governance mechanisms are expected to choose more conservative accounting.

2.4.2   Litigation

Another explanation for the existence of accounting conservatism is litigation. Accounting researchers argue litigation under various legislative acts (e.g. Securities Act) encourages conservatism because the overstatement of earnings and assets is more likely to trigger litigation than understatements (Kellogg 1984; Watts 2003a; Beaver and Ryan 2005). Kim, Chung and Firth (2003) argued that to reduce litigation risk, auditors prefer clients to use conservative (or income decreasing) accounting choices rather than aggressive

accounting (i.e. income increasing choices). Watts (2003b) observed courts generally punished firms that overstated earnings and assets than those that understated. This is because stakeholders (especially shareholders) are more likely to suffer losses when earnings/assets are overstated than when earnings/assets are understated (Watts 2003b). Kellogg (1984) and DuCharme, Malatesta and Sefcik (2004) supported this view showing aggressive financial reporting is more likely to be associated with shareholder litigation than conservative financial reporting. These findings are consistent with other empirical research such as Basu (1997), Lobo and Zhou (2006) and Kung et al. (2008).

2.4.3   *Taxation*

Watts (2003a) suggests that tax regulation also creates conservatism in financial reporting. Even though financial accounting and tax accounting can differ in a number of ways (e.g. treatment of depreciation), tax planning usually involves managerial use of accounting discretion to minimize the present value of tax payments (Shackelford and Shevlin 2001). According to Watts (2003a), asymmetric recognition of gains and losses (i.e. conservatism) assists managers of profitable firms to reduce the present value of the taxes and, thereby, increase the value of the firm. Recent studies are in support of this notion (Pae 2007; Qiang 2007; Lara, Osma and Penalva 2009b).

Lara et al. (2009b), for example, assert that both conditional and unconditional conservatism are used by managers as a tool to reduce the present value of taxes, thus increasing firm value. In a scenario where firms face greater tax pressures, management tend to adopt conservative accounting practices (Lara et al. 2009b).For instance, earnings conservatism is used to shift income across periods, specifically from periods with high expected tax rates to periods of low expected tax rate. This shifting of income reduces the net present value of tax payments as well as the overall amount paid.

2.4.4   *Accounting and institutional regulations*

A number of studies provide evidence that the regulatory environment influences conservatism (Ball et al. 2000; Watts 2003a; Xinrong 2004; Ball and Shivakumar 2005; Huijgen and Lubberink 2005; Bushman and Piotroski 2006). According to Watts (2003a), financial accounting standard-setters and regulators have incentives to favor conservative accounting and reporting. Specifically, standard-setters and regulators are likely to face more criticism if firms overstate net assets than if firms understate net assets. Thus, by favoring conservative financial reporting, political costs imposed on them may reduce. Xinrong (2004), meanwhile, argues regulation costs are a secondary factor for conservative reporting because it follows investor's demand for conservatism predicted by the litigation and contracting hypothesis.

The views of Watts (2003a) have been empirically tested by several studies (Ball and Shivakumar 2005; Huijgen and Lubberink 2005; Bushman and Piotroski 2006). Bushman and Piotroski (2006), for example, provide evidence that firms in nations with strong investor protection and high quality judicial systems reflect bad news in reported earnings numbers in timelier fashion (i.e. earnings conservatism) than firms in nations characterized by weak investor protection and low quality judicial systems. Therefore, they (Bushman and Piotroski 2006) suggest that investor protection embodied in corporate law and the efficiency and impartiality of a judicial system play a significant role in creating incentives for earnings conservatism.

Some prior empirical research has sought to examine the influence of standard setters and regulation on conservatism. Huijgen and Lubberink (2005), for example, examined the level of conservatism of UK firms cross-listed in the US relative to UK GAAP and *US GAAP* earnings. They (Huijgen and Lubberink 2005) found no significant differences in conservatism level between UK GAAP and US GAAP counterparts. However, they (Huijgen and Lubberink 2005) found UK cross-listed firms were significantly more conservative than those UK firms without a US cross-listing. They (Huijgen and Lubberink 2005) suggested that besides the higher threat of litigation from a wider shareholder audience, a stricter enforcement system on cross-listed firms may explain the significantly higher levels of conservatism.

All four explanations of conservatism (i.e. contracting, litigation, taxation and accounting regulations) as suggested by Watts (2003a), are then investigated by Qiang (2007). His (Qiang 2007) findings indicate that both forms of conservatism (i.e. conditional and unconditional conservatism) played distinct roles in all contracting, regulation and taxation as well as a common role in litigation. Moreover, both forms of conservatism played an interrelated role (i.e. unconditional conservatism reduced conditional conservatism).

2.5 Determinants of earnings conservatism

The prior subsections described major explanations offered in the extant literature to explain the existence, persistence and evolution of conservatism within financial accounting. These explanations provide valuable insights to understanding conservatism, and are important in explaining variations in earnings conservatism across international boundaries. However, such explanations provide limited insights to explain possible variables between firms within a nation. As this study has a nation-specific focus, it is imperative to consider factors at the firm-level that are likely to best explain variations in earnings conservatism within a nation. Various factors have been proposed by scholars though to potentially influence earnings conservatism between firms. These factors can be broadly categorized in

four main groupings: (1) firm characteristics; (2) institutional factors; (3) market factors; and (4) corporate governance features.

2.5.1   *Firm characteristics*

There is a lengthy history of researchers seeking to link (theoretically, empirically and methodologically) firm characteristics to various financial accounting issues. Three prominent and well researched firm characteristics are firm size, leverage and industry type.[12] Some prior research has also sought to determine a linkage between earnings conservatism and these three firm characteristics (i.e. firm size, leverage and industry type). Ding and Stolowy (2006), for example, found small firms are often less conservative than large ones. They (Ding and Stolowy 2006) argue that this could be due to small firms being more risky in term of market equity. Moreover, small firms tend to be less diversified than large firms (i.e. returns are more volatile). Their (Ding and Stolowy 2006) results are consistent with a study conducted by Klein and Marquardt (2006).

Kwon, Yin and Han (2006), meanwhile, investigated differences in the level of accounting conservatism between high-tech and low-tech firms. By using 2,728 high-tech firms and 984 low-tech firms in year 2000, they (Kwon et al. 2006) found that there is a higher level of accounting conservatism in high-tech firms compared to low-tech firms. Similarly, Srivastava and Tse (2007), who examined factors that drove changes in accounting conservatism during 1972–2006, reported that levels of conservatism increased more rapidly in high technology industry than other industries. They (Srivastava and Tse 2007) suggested that both delayed gains recognition and prompt loss recognition generally contributed to increasing conservatism in the high technology industry.

Gotti (2008), alternatively, used a few different firm characteristics to examine conditional conservatism in the US during 1963–2005. With a sample consisting of 6,282 firm-year observations, he (Gotti 2008) found that firms with (i) high debt-to-asset ratios, (ii) executives compensated more heavily based on the firm's accounting performance, (iii) audited by a *Big-7* auditor in the previous year and received an unqualified auditor opinion, and (iv) received an unqualified audit report with a going concern assumption, are more conservative (i.e. recognizing future good news in annual earnings more quickly than bad news) than the rest of the sample. Appendix B presents a summary of major studies linking firm characteristics to earnings conservatism.

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[12] Aside from the three firm characteristics noted (i.e. firm size, leverage and industry type), other firm characteristics examined include firm risk, market-to-book values, financial performance and business cycle.

2.5.2   Institutional factors

Prior research has investigated the influence of institutional factors on earnings conservatism such as legal regimes (i.e. Code Law versus Common Law), accounting policies and regulation, political influence and cross-listing of firms in different jurisdictions (Lara, Osma and Mora 1999; Pope and Walker 1999; Huijgen and Lubberink 2005; Kung 2005; Brown, He and Teitel 2006; Bushman and Piotroski 2006).

Pope and Walker (1999), for example, investigated differences in the reported timeliness and conservatism of US firms and UK firms' reported earnings. They (Pope and Walker 1999) concluded that the UK accounting regime was significantly less conservative than the US regime, when comparing earnings before extraordinary items. However, when comparing bottom-line earnings, US firms were less conservative than UK firms. Findings indicate that US GAAP is more conservative than UK GAAP for earnings before extraordinary items and the opposite for bottom-line earnings.

Ball et al. (2000), meanwhile, examined the effect of international factors on the properties of earnings conservatism, specifically timeliness and conservatism. The empirical analysis by Ball et al. (2000) indicated that Common Law accounting income did exhibit greater timeliness than Code Law accounting income but this difference was due to Common Law accounting income's greater sensitivity to economic losses (i.e. income conservatism).

Brown et al. (2006) investigated the association between conditional conservatism and accrual intensity on the value relevance of accounting earnings in 20 different nations. With a sample of 47,802 firm-year observations from 1993 to 2004, results indicated that conditional conservatism is positively associated with the value relevance of earnings in nations with higher accrual intensity (i.e. incremental to the effects of shareholder protection). They (Brown et al. 2006) further indicated that, in the use of accruals, conditional conservatism serves as an efficient contracting role to reduce managers' opportunistic behaviour.

Meanwhile, Kung et al. (2008) argued that Chinese firms cross-listed in the stock exchange of Hong Kong (H-shares) are exposed to the threat of litigation, competitive market forces and a stricter regulatory regime. Thus, these firms are expected to be more conservative than Chinese firm without an overseas listing. However, results shows that Chinese firms cross-listed in Hong Kong (H-shares) are not significantly more conservative than firms without cross listing. They (Kung et al. 2008) suggest that the location of listing has little effect on accounting conservatism (i.e. a significant exposure to the domestic institutional environment was retained by cross-listed companies). This indicates that institutional setting and country environment are important determinants of the level of accounting conservatism.

Finally, Bushman and Piotroski (2006), using the Basu (1997) model as a proxy for earnings conservatism, analyzed the relationship between key characteristics of nation-level institutions and conditional conservatism. The analysis by Bushman and Piotroski (2006) found that investor protections embodied in corporate law and the efficiency and fairness of the judicial system played a significant role in creating incentives for earnings conservatism (i.e. timely loss recognition). Firms in nations with strong investor protection and high quality judicial systems reflected bad news in reported earnings numbers in a more timely fashion than firms in nations characterized by weak investor protection and low quality judicial systems. For a summary of major studies linking institutional factors to earnings conservatism see Appendix C.

2.5.3 *Market factors*

Factors associated with the dynamics of the capital market of a nation (e.g. proportion of private firms to public firms, coverage by analyst, liquidity of the market, industry breakdown) may also influence earnings conservatism. Ball and Shivakumar (2005), for example, argued that the market tends to demand lower quality financial reporting for private firms than public firms even though the financial statement is prepared under substantially equivalent regulations. Ball and Shivakumar (2005) found positive association between conditional conservatism and public firms. Based on these findings a market dominated by a higher proportion of large private firms than public firm will likely have less incentives for the production of high quality earnings and adoption of conservative earnings practices. Meanwhile, in respect to analyst coverage it has been suggested a firm with a higher level of coverage by financial analysts will adopt more conservative financial accounting practices. Empirical analysis by Sun and Liu (2011) supports a positive association between analyst coverage and earnings conservatism. Thus, just as with firm characteristics and institutional factors, market factors may also act as determinants of earnings conservatism between firms.

2.5.4 *Corporate governance*

Corporate governance[13] is a major area of debate and discussion with continuing demands from various parties (e.g. reformists, scholars, investors) for improvements in standards. Recently some scholars for example, Lara, Osma and Penalva (2007), have considered the impact of corporate governance on earnings conservatism. They (Lara et al. 2007), for example, suggested corporate governance is the set of mechanisms that ensures

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[13]Depending upon the definition one may adopt, the concept of corporate governance may encompass ownership structure and aspects of market factors. For the purposes of this study, corporate governance is perceived to encompass only firm constructed, engaged and instigated mechanisms and controls designed to oversee the firm (e.g. the board of directors, audit committee, engaged external auditor).

the firm's assets are used efficiently, and can prevent the inappropriate distribution of assets to corporate management at the expense of other stakeholders. Dargenidou, McLeay and Raonic (2007), meanwhile, suggested that when investor protection is weak, and corporate governance does not separate supervision from management, there is systematic understatement in the recognition of bad news, leading to poorer earnings quality.

Though still generally within its infancy, empirical studies examining the linkage between earnings conservatism and various corporate governance features have begun to emerge. Beekes et al. (2004), for example, examined the association of accounting quality (i.e. earnings timeliness and conservatism) and the composition of UK boards of directors. Using the Basu (1997) reverse regression model, Beekes et al. (2004) selected listed non-financial firms from 1993 to 1995 consisting of a sample of 508 firm-year observations. Their (Beekes et al. 2004) results indicated that firms with a higher proportion of outside board members were more likely to recognize bad news in earnings in a timelier fashion. Predictably, firms whose boards were comprised of a relatively high proportion of outsiders did not display greater conservatism with regard to the recognition of good news. Beekes et al. (2004)findings reflect that board composition is an important factor in determining the quality of firms' reported earnings.

In a similar vein to Beekes et al. (2004), Ahmed and Duellman (2007) performed a comprehensive analysis of the relationship between accounting conservatism and five characteristics of the board of directors: (i) percentage of inside directors; (ii) average number of additional directorships by the board of director's members; (iii) CEO duality; (iv) percentage of shares held by outside directors; and (v) board size. Three measures of earnings conservatism, namely, (i) accruals-based measure, (ii) market-based measure, and (iii) asymmetric timeliness of earnings, were used with a sample comprised of 306 US firms for the period of 1999 to 2001. Ahmed and Duellman (2007) found that the percentage of inside directors was negatively related to conservatism and the percentage of outside directors' shareholdings was positively related to conservatism. Overall, the findings were consistent with the notion that accounting conservatism assists the board of directors in reducing the agency costs of firms.

Aside from the board of directors, other researchers have begun to examine the influence of other corporate governance mechanisms such as board sub-committees and the quality of the external auditor. Krishnan and Visvanathan (2007), for example, examined the association of accounting conservatism and an audit committee's financial expertise. Four measurements of accounting conservatism were used; (i) an accruals-based measure; (ii) a measure derived from book-to-market ratio; (iii) a conservatism score; and (iv) asymmetric loss. With a sample comprised of 929 firm-year observations spanning 2000 through 2002, Krishnan and Visvanathan (2007) indicated that an audit committee's financial expertise (i.e.

accounting financial experts, non-accounting financial experts and non-financial experts) was positively associated with conservatism when financial expertise was defined to include only accounting experts. Their (Krishnan and Visvanathan 2007) findings are consistent with the assumption that accounting expertise enhances reported conservatism (i.e. greater monitoring by members of the audit committee).

Ruddock et al. (2006), meanwhile, sought to investigate a link between unusually high levels of non-audit services and any association with reduced earning conservatism. They (Ruddock et al. 2006) argued that supplying of non-audit services compromises auditor independence and results in the auditor accepting less conservative accounting, leading to poorer earnings quality. Using the models of Basu (1997) and Ball and Shivakumar (2005), and a sample comprised of 3,746 firm-year observations for the period of 1993–2000, their (Ruddock et al. 2006) results, however, suggested that higher than expected non-audit services are not associated with reduced earnings conservatism. Ruddock et al. (2006) concluded that the results were consistent with factors such as market-based incentives, the threat of litigation and alternative governance mechanisms offsetting any expected benefits to the audit firm from reduced independence.

Finally, Lara, Osma and Penalva (2009a) asserted that corporate governance structures of firms play an important role in the reporting of earnings conservatism. Three measures were used to capture conditional conservatism (i.e. (i) Basu model (1997); (ii) Ball and Shivakumar model (2005); and (iii) Givoly and Hayn model (2000)) with a sample containing 9,152 firm-year observations of US firms for the period 1992 through 2003. Results indicated that firms with stronger corporate governance provisions in place are more conservative (i.e. use discretionary accruals to inform investors about bad news in a timelier fashion).[14] Evidence is consistent with stronger (weaker) corporate governance structures demanding more (less) conservative accounting information. For a summary of major studies linking governance structures to earnings conservatism see Table 2.2.

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[14] Lara et al. (2009a) classify firms into strong and weak governance structures by developing a composite measure of total governance that incorporated attributes of external and internal governance. Specifically, three measures proxy for internal governance: (1) CEO involvement; (2) board composition; and (3) board effectiveness. For external governance, the level of external monitoring using the takeover index developed by Gompers, Ishii and Metrick (2003) is used as proxy.

Table 2.2: Major prior studies—governance structures and earnings conservatism

Author (s)	Focus	Period covered	Governance structures				Findings
			Board of directors	**Audit committee**	**Auditor characteristics**	**Other**	
Ahmed and Duellman (2007)	US. 306 firms	1999 to 2001	% of inside directors, average number of additional directorships by board members, CEO duality, %of shares held by outside directors and board size	-	-	-	There is a negative relationship between the percentage of the inside directors on the board and conservatism. However, there is a positive relationship between the percentage of a firm's shares owned by the outside directors and conservatism.
Amir, Guan and Linvne (2009)	US. 21,682 firm-year observations	2000 to 2007	-	-	Auditor independence	-	There is a positive association between measures of auditor independence and earnings conservatism (i.e. timely recognition of losses). This association is stronger for *Big 4* auditors, clients with high litigation risk and highly leveraged firms.
Beekes, Pope and Young (2004)	UK. 508 firm-year observations	1950 to 1998 (i.e. a 49-year period)	Proportion of outside board members	-	-	-	The results indicate that firms with a higher proportion of outside members are more likely to recognize bad news in earnings on a timely basis.
Hamilton, Ruddock, Stokes and Taylor (2005)	Australia 3,621 firm-year observations	1998 to 2003	-	-	External audit partner rotation	-	There is a positive association between conditional conservatism (i.e. asymmetrically timely recognition of economic losses) and after the audit rotation (note: a change in audit partner is not a change in auditors).
Kamarudin, Dunstan and van Zijl (2010)	Malaysia 2,235 firm-year observations	2005 to 2008	-	-	i) Provision of non-audit services ii) Auditor industry specialization	Government-Linked-Companies (GLC) ownership	Results show that firms with higher non-audit services are associated with higher earnings conservatism. Specifically, NAS is negatively associated with earnings conservatism for GLC. Meanwhile, for non-GLC, NAS is positively associated with higher earnings conservatism, regardless of whether the firms are audited by an industry specialist or non-industry specialist.

Table 2.2: Major prior studies - governance structures and earnings conservatism *(continued)*

Author (s)	Focus	Period covered	Governance structures				Findings
			Board of directors	**Audit committee**	**Auditor characteristics**	**Other**	
Krishnan and Visvanathan (2007)	US. 929 firm-year observations	2000 to 2002	-	Financial expertise: (i) accounting financial experts; (ii) non-accounting financial experts; (iii)non-financial experts	-	-	Audit committee's financial expertise is positvely associated with accounting conservatism (i.e. when financial expertise is defined to include only accounting experts).
Lafond and Roychow-dhury (2008)	US. 14,786 firm-year observations	1994 to 2004	-	-	-	Managerial ownership	Findings shows that information asymmetry is positvely related to accounting conservatism (the larger the information asymmetry between inside and outside investors, the more conservative are the firms' financial statement). In addition, information asymmetry changes lead to conservatism changes (conservative financial reporting is a governance mechanism that reduces the manager's ability to manipulate and overstate finiancial performance.
Lara, Osma and Penalva (2009a)	US. 9,152 firm-year observations	1992 to 2003	Independence of board members and number of meetings	-	-	Takeover index (proxy for external monitoring) and CEO involvement	Results indicated that firms with strong (weak) governance are more (less) conservative than firms with weak (strong) governance (there is a positive association between governance and conservatism).
Ruddock, Taylor and Taylor (2006)	Australia 3,746 firm-year observations	1993 to 2000	-	-	Provision of NAS by incumbent auditors	-	Higher than expected NAS is not associated with less conservative accounting. Moreover, *Big 6* auditors encourage more conservative financial reporting than *Non-Big 6* auditors due to reputation concerns.

2.5.5   Summary of determinants of earnings conservatism

As described in this section, various factors are proposed as being potential determinants of earnings conservatism. These factors can be broadly categorized in four main groupings: (1) firm characteristics; (2) institutional factors; (3) market factors; and (4) corporate governance features. With the immense focus and debate surrounding corporate governance, empirical analysis of corporate governance factors potentially linked to key financial accounting issues (such as earnings conservatism) are worthy endeavors. Though a range of corporate governance mechanisms and controls may have a bearing on earnings conservatism, it is the perception of this study that the external auditor and audit committee are likely to have the greater direct bearing on adoption of conservative accounting practices. This perception is adopted because corporate governance reforms, regulations and best practice recommendations adopted in numerous nations around the world during the past several decades have increasingly stressed the external auditor and audit committee are the two primary mechanisms responsible for the oversight of a firm's financial reporting system. Given the joint importance assigned to the external auditor and audit committee these two mechanisms are described in this thesis as constituting the direct custodians of the financial accounting system.

2.6   Conclusion

The focus of this chapter was to provide the background of earnings conservatism. Different types of conservatism were discussed and the definition of earnings conservatism by Basu (1997) was adopted in this study. Subsequently, a review of the major empirical research of earnings conservatism conducted in leading nations such as the US, Europe and other nations were presented. The later discussion explained the origins of earnings conservatism. This was followed by the various factors such as (1) firm characteristics; (2) institutional factors; (3) market factors; and (4) corporate governance features. The next chapter will present the theoretical perspective of the study. The first part of the chapter will discuss the possible influence of corporate governance mechanisms in earnings conservatism. A few potential theories underlying the theoretical framework of this study are then outlined. Next, this chapter will focus on the corporate governance environment in Malaysia including the equity market regulatory environment, financial accounting system and auditing environment. This chapter will also discuss the development of the hypotheses tested in this study on how corporate governance mechanisms (i.e. auditor quality and audit committee effectiveness) affecting earnings conservatism, with key literature provided. To better illustrate the key relationship examined in the study, a conceptual schema with a diagrammatical overview is then developed.

CHAPTER 3   HYPOTHESES DEVELOPMENT

3.1   Introduction

The previous chapter provided a comprehensive review of the literature on earnings conservatism. Different types of earnings conservatism were discussed and a review of the major empirical research of earnings conservatism conducted in leading nations such as the US, Europe and other nations were presented. This was followed by the four explanations of conservatism, namely, (a) contracting, (b) litigation, (c) taxation, and (d) accounting and institutional regulations. Finally, the determinants of earnings conservatism with particular emphasis given to corporate governance features were discussed.

In this chapter the development of theory and hypotheses related to the study is detailed. The first part of the chapter discusses the possible influence of corporate governance mechanisms in earnings conservatism, and outlines multiple theories related to corporate governance (i.e. institutional theory, stakeholder theory, resources dependence theory and agency theory). Discussion then focuses on the corporate governance environment in Malaysia including: (i) equity market regulatory environment; (ii) financial accounting system; and (iii) auditing environment. This is followed by a discussion defining prime concepts of corporate governance mechanisms used in this study (i.e. direct custodian excellence, auditor quality and audit committee effectiveness). Discussion on how these variables affect earnings conservatism provides the foundation for the development of the hypotheses underpinning this study. A diagrammatical representation of the conceptual schema that represents the testable hypotheses for this study is the presented.

3.2   Corporate governance

Corporate governance has been defined in a number of ways by regulators, corporate governance advocates and scholars (Singam 2003; du Plessis, McConvill and Bagaric 2005; Gay and Simnett 2007; Zainal-Abidin and Ahmad 2007). In general terms, corporate governance can be defined as a set of rules, processes, customs, policies and incentives by which a firm is directed and controlled (du Plessis et al. 2005). Textbooks commonly define corporate governance as ―the system by which firms are directed and managed and covers the conduct of the board of directors and relationship between the board, management and shareholders" (Gay and Simnett 2007 p.89). Specifically, corporate governance in Malaysia is defined as ―the process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realizing long term shareholder value, whilst taking into account the interests of other stakeholders" (Singam 2003 p.315).

The above definition concluded that corporate governance mainly focuses on the principal stakeholders in any firm such as shareholders, corporate management and the board of directors. Thus, the main objective of corporate governance is to ensure the accountability of these different stakeholders via mechanisms that attempt to eliminate the traditional agency conflict/cost/problem (Cohen, Krishnamoorthy and Wright 2002; Klein and Marquardt 2006; Lara et al. 2007; Chen, Lu and Sougiannis 2011). The need for corporate governance has received escalating interest from academic researchers and practice because of the high number of alleged accounting scandals such as financial reporting frauds, earnings restatements and earnings manipulation by corporate management (Palmrose and Scholz 2002; Cohen, Krishnamoorthy and Wright 2004; Agrawal and Chadha 2005).

A vast body of literature acknowledges the importance of corporate governance mechanisms to improve financial reporting quality. Researchers have found evidence that show strong corporate governance is associated with higher quality financial reporting (e.g. Carcello, Hermanson, Neal and Riley 2002; Klein 2002a; Abbott et al. 2003a; Carcello and Neal 2003; Xie, Davidson III and DaDalt 2003; Vafeas 2005). Conversely, past literature has also demonstrated that weak corporate governance structures lead to poor financial reporting quality including earnings manipulation, financial statement fraud and weaker internal control (e.g. Beasley 1996; Dechow et al. 1996; McMullen and Raghunandan 1996; Cohen et al. 2002; Palmrose and Scholz 2002; Abbott et al. 2004; Krishnan 2005a).

Specifically, prior research has focused remarkably on three crucial instruments of corporate governance: (1) boards of directors; (2) the external auditor; and (3) audit committees. In such research it is argued that the these crucial instruments of corporate governance have important influences on earnings quality (including conservatism) either individually, collectively or by some combination (Carcello et al. 2002; Klein 2002a; Abbott et al. 2003a; Carcello and Neal 2003; Xie et al. 2003; Vafeas 2005).

3.3 Theoretical perspectives of corporate governance

Multiple theories concerning corporate governance have been explored to explain various corporate governance phenomena. Nonetheless, four major theories of corporate governance have emerged. These are stakeholder theory (Donaldson and Preston 1995), institutional theory (Meyer and Rowan 1977), resource dependence theory (Pfeffer 1972) and agency theory (Jensen and Meckling 1976; Fama 1980; Fama and Jensen 1983). Each of these theories is briefly discussed in the next sub-section.

3.3.1 Stakeholder theory

Stakeholder theory considers the firm from a broad perspective, whereby shareholders are only one of many potential stakeholders (Freeman 1984; Clarkson 1994;

Blair 1995; Donaldson and Preston 1995). Other stakeholders include creditors, employees, suppliers, government authorities and society as a whole. Stakeholder theorists (Freeman 1984; Clarkson 1994; Blair 1995; Donaldson and Preston 1995) argue stakeholders are affected by and also affect the firm. The premise is that since society provides the social structure and framework in which firms can prosper, to ignore society is to threaten the equilibrium that it (society) provides (Clarkson 1994; Blair 1995; Psaros 2009).

Stakeholder theory has been viewed by a number of theorists as a more valid and morally acceptable framework in which to assess corporate governance issues (Freeman 1984; Clarkson 1994; Blair 1995; Donaldson and Preston 1995). Freeman (1984 p.2), one of the earliest stakeholder theorists, argued a stakeholder means ―any group or individual who can affect or be affected by the achievements of firms‘ objectives". He (Freeman 1984) further conceptualized the stakeholder model as a map in which the firm is the hub of a wheel and stakeholders are the ends of the spokes around the wheel. Freeman (1984) suggests that a firm intending to achieve goals can only do so with a full and detailed understanding of the relationships it holds with different stakeholders‘ groups.

Relative to Freeman (1984), Clarkson (1994) provided a more vibrant explanation of stakeholder theory, and focused on the fact that stakeholder theory is important because it can help firms to achieve goals. According to Clarkson (1994 p.322), ―the firm is a system of stakeholders operating within the large system of the host society that provides the necessary legal and market infrastructure for the firm‘s activities. The purpose of the firm is to create wealth and value for stakeholders by converting stakes into goods and services". Donaldson and Preston (1995) present a more detailed explanation of stakeholder theory and view the firm as an entity through which numerous and diverse participants accomplish multiple purposes. The central core of the stakeholder theory asserts that managers and other agents act as if all stakeholders‘ interests have intrinsic value, though not necessarily equal value (Psaros 2009).

Of the competing views of stakeholder theory, the conceptualization by Freeman (1984) became the overwhelming focus upon which this theory has developed. Nonetheless, two different categories of stakeholder theory have emerged. These are the ethical branch and managerial branch. The ethical branch generally focuses on issues associated with rights to information, and what rights should be met regardless of the power of the stakeholders involved. For the ethical branch, disclosures are considered to be responsibility driven (Cupido 2008). Meanwhile, the managerial branch explicitly refers to issues of stakeholders‘ power, and how a stakeholder‘s relative power affects the ability to coerce the firm into complying with the stakeholder‘s expectations (Deegan 2007). The managerial branch of stakeholder theory predicts that firms will tend to satisfy the information demands of those stakeholders who are important to the firm‘s ongoing survival. Whether a particular

stakeholder receives information will be dependent upon how powerful they are perceived to be, with power often considered in terms of the scarcity of the resources controlled by the respective stakeholders (Cupido 2008).

3.3.2 *Institutional theory*

Institutional theory explores how (at a broader level) particular formal structures might be adopted in order to bring legitimacy to a firm (Deegan 2007). According to Carpenter and Feroz (2001), institutional theory provides another lens through which to view economic dependency incentives' impact on accounting rule choice. In an attempt to apply institutional theory to a corporate governance context, Meyer and Rowan (1977) suggest organizational structures play a vital role as symbolic displays of conformity and social accountability. Theorists argue institutional theory indicates that numerous aspects of formal organizational structure, policies and procedures result from prevailing societal attitudes of what comprises acceptable practice and the views of important constituents (Scott 1987; Bealing, Dirsmith and Fogarty 1996). Firms obey rules and regulations, not just on efficiency grounds, but also to enhance legitimacy, resources and survival capacities (DiMaggio and Powell 1983). Institutional pressures operate in conjunction with other forces such as completion to effect ecological influences (Meyer and Rowan 1977).

Institutional theory advocates argue the real functioning of the firm is accomplished by internal operating processes. Consequently, firms with appropriate structures in place avoid detailed investigations of key internal operating activities by external parties (Meyer and Rowan 1977). Meyer and Rowan (1977 p.346) classify firms as —dramatic enactments of the rationalized myths pervading modern societies". Firms are subject to rules and regulations to which firms must conform in order to ensure legitimacy, access to resources and survival (DiMaggio and Powell 1983). Together, rules, accreditation processes and public opinion make it essential (or at least beneficial) for firms to adopt new structures to conform. By developing a formal configuration (which includes key corporate governance mechanisms) that adheres to prescriptions of the institutional environment, a firm displays that it is operating on communally valued principles (O`Connell 2006). Conversely, firms that exclude environmentally justifiable components of structure lack acceptable legitimate records of operations. Such firms are, therefore, susceptible to allegations that the firms are neglectful, irrational, or redundant and risk forfeiting stakeholder patronage (O`Connell 2006). As a result, the pressures to achieve legitimacy help initiate isomorphism; a process that forces one unit in a population to resemble other units that face the same set of environmental conditions (DiMaggio and Powell 1983; Deegan 2009).

Institutional theorists have identified two major isomorphism forms: (1) competitive; and (2) institutional. Competitive isomorphism assumes a system of competitive markets and

robustness measures and is often used to explain how firms develop bureaucracies and respond to new innovations (DiMaggio and Powell 1983). Three mechanisms of institutional isomorphic change were identified: (1) coercive; (2) mimetic; and (3) normative. Coercive isomorphism emanates from stresses applied on firms by other firms and by cultural expectations in society as a whole. Mimetic isomorphism reflects a standard response to ambiguity. Firms will follow other firms when faced with an uncertain outside environment. Normative isomorphism pressures stem from professionalization. While diverse type of professionals within a firm may vary from one another, they (professionals) display many identical characteristics to the equivalents in other firms (DiMaggio and Powell 1983; Deegan 2009; Psaros 2009). Institutional isomorphism promotes the success and survival of firms (Meyer and Rowan 1977). Isomorphic firms functioning in a mode comparable to competitors may lessen the risk of performing poorly when compared to other firms (Kondra and Hinings 1998).

In a corporate governance context, institutional theory applies to a wide variety of situations including the choice of accounting methods. Fogarty (1992), for example, studied the FASB's standard-setting process and found that institutionalization, through the basis of separated procedures and the formal characteristics of assessment, enables the board of directors to achieve tolerable decisional freedom. Fogarty (1992 p.331) further noted that the visibility of a firm's processes and the consequences of outcomes contributed to the —critical dependence on legitimacy". Fogarty (1992) analyzed the peer review process of accounting firms as a mechanism utilized by the US accounting firms seeking to legitimize a largely self-regulatory industry. Finally, Bealing et al. (1996) studied the historical development of the SEC, specifically the form, content and rhetoric of early regulatory actions, as a case example of a firm attempting to justify its existence and role in the financial reporting process.

3.3.3 Resource dependence theory

Although resource dependence theory was originally formulated to discuss relationships between firms, the theory is applicable to relationships among units within firms. In the context of corporate governance, resource dependence theory can be applied to suggest effective corporate governance structures within firms can lead to the generation of resources. Particularly, a board of directors contributes to a firm through expertise and linkages to other firms and institutions and directors can also contribute to the positive valuation of a firm through reputation. Boards can be a key source of various resources (McGregor 1960; Pfeffer 1972; Hillman and Dalziel 2003) based on human capital and social capital (Certo 2003). The former includes the director's advice and expertise and the latter covers resources such as legitimacy (Westphal and Zajac 1994) and links to other

firms. Cumulatively, the resources are all described as board capital (Hillman and Dalziel 2003). The relationship between board capital and firm performance is well documented by a number of studies (Pfeffer 1972; Daily, Johnson, Ellstrand and Dalton 1998).

Resource dependence theory is based on the premise that various elements of corporate governance can act as critical resources for the firm (Psaros 2009).Advocates of this theory argue that a firm's level of success is contingent on the ability to control external resources. Firms must cope with great uncertainty in order to survive. This uncertainty undermines the firm's control of resources and strategic choices leading to inefficiencies in the operations of the firm. The board of directors is viewed as providing the crucial link to external resources for a firm when seeking to achieve the firm's stated goals and objectives. In a resource dependency role, directors serve to connect the firm with external factors which reduce environmental uncertainties and external dependencies (Pfeffer 1972; Hillman, Cannella and Paetzold 2000).

It is further posited by advocates of resource dependence theory that directors also add value to the firm in a number of other ways. Hillman et al. (2000), for example, suggest directors bring other resources to the firm including unique skills, specialist information and access to key constituents (e.g. suppliers, environmental groups, educators and government policy makers). The extent to which directors add value to a firm depends on the skills and resource base of those directors. The members of a board may also bring an enhanced reputation to the firm by virtue of personal reputation.

3.3.4   Agency theory

Agency theory deals with one-to-one relationships; for instance, a relationship between the agent (management of the firm) and the principal (shareholders of the firm). Most studies in earnings quality (conservatism) use agency theory as the underlying basis of research propositions (e.g. Beekes et al. 2004; Ruddock et al. 2006; Ahmed and Duellman 2007; Lara et al. 2007).

Agency theory evolved from the concept of separation of ownership from management in modern firms as initiated by Berle and Means (1932). In discussing the separation of ownership and control, Berle and Means (1932) highlighted the potential conflict between shareholders and management when ownership is widely distributed among shareholders. Although Berle and Means (1932) initiated the concept of agency theory, Jensen and Meckling (1976) were probably the first researchers to place the theory in a precise theoretical framework.[15] Further developments of this theoretical perspective were provided by Fama and Jensen (1983). Both Jensen and Meckling (1976) and Fama and

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[15] See Jensen and Meckling (1976) for a detailed discussion of the conflicts arising from the separation of ownership and control.

Jensen (1983) posit an agency relationship arises when one party, a principal, delegates some decision-making authority to another party, the agent (Gaffikin 2008). The principal and the agent enter into a contract recognizing the relationship. It is argued by agency theorists that both parties will act in their own self-interest that does not necessarily coincide.

The most frequently cited example of an agency relationship is between shareholders and corporate management.[16] For shareholders the objective will be interested in maximize wealth by ensuring the firm increases in value. Meanwhile, corporate management will want to maximizing personal rewards and benefits from managing the firm (e.g. material-financial and perquisites, reputation of the manager). Agency costs are incurred by the principal due to a need to monitor the behaviour of the agent who—having been delegated responsibility for managing the assets of the firm (and, thereby, the principal)—may act out of self-interest rather than for the principal (Deegan 2009). A number of monitoring costs will directly involve accounting such as the need for engagement of an external auditor (Gaffikin 2008).

Aside from the cost of monitoring the conflicts associated with the agent/principal relationship, other costs may be incurred. These include bonding costs (Gaffikin 2007), residual loss costs and political costs. In principle, the various costs stemming from conflicts within the agency/principal relationship arise from opportunistic behavior of corporate management. Within an agency theory setting, therefore, corporate governance structures in firms is viewed as important mechanisms to overcome agency problems and prevent opportunistic behavior. Burton (2000) believes that agency costs are best controlled by limiting management discretion through the establishment of structures to monitor and control management behavior. Such structures include an independent board of directors, an independent chairperson and independent board sub-committees such as the audit committee (Ellstrand, Daily, Johnson and Dalton 1999).

3.3.5   *Comparison of corporate governance theories*

According to Donaldson and Preston (1995), competing theories have different purposes and, therefore, different validity criteria and implications. As highlighted in the previous subsections there are a range of competing theories to explain corporate governance phenomena. Each theoretical perspective offers respective benefits and insights. For the purposes of this study, however, agency theory forms the underlying theoretical perspective.

Agency theory is used because this study concentrates on examining how specific key monitoring mechanisms (i.e. direct custodians such as the external auditor and audit committee) influence a financial accounting issue associated with corporate management's

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[16]Whilst conflicts between shareholders and corporate management are recognized as underpinning the most easily identified agency relationship, conflicts also arise between (a) bondholders and corporate management; (b) bondholders and shareholders; and (c) majority shareholder and minority shareholders. These relationships have also been identified as examples of agency relationships.

opportunistic behavior. Since agency theory focuses squarely on addressing such relationships it (agency theory) provides a common theoretical perspective. In addition, in aiming to generalize results to the broader Malaysian and international capital markets, agency theory provides a moreuniversally applicable theoretical framework. Finally, the application of agency theory to corporate governance issues and earnings conservatism fits within the Malaysian context. Due to prior historical relationships and current business ties, Malaysia's underlying business environment model has increasingly followed the Anglo-American approach. Furthermore, pressures of economic and capital market growth in Malaysia have prompted a gradual shift toward greater reliance on corporate management and wider dispersion of ownership structures particularly amongst listed firms. Prior research (e.g. Ball et al. 2003) also indicates Malaysia is plagued by a weak financial structure, over-leveraging by firms and poor transparency. Overall, Malaysia is increasingly providing fertile ground for agency relationship conflicts. Thus, this context supports the application of agency theory as the underlying theoretical perspective in this study.

3.4 Corporate governance environment in Malaysia

Prior to developing the underlying hypotheses of this thesis it is important to outline the corporate governance environment. Such an outline provides key background information for understanding the possible influence of corporate governance mechanisms on earnings conservatism in Malaysia. In addition, such a review assists to substantiate the application of agency theory as the theoretical framework underpinning the study.

3.4.1 *Equity market regulatory environment in Malaysia*

The equity market history in Malaysia dates back to the 1930s with formation of the Malayan Stock Brokers Association. This was followed in 1960 with the formal establishment of the Malayan Stock Exchange. Firms from the plantation and mining industries provided the core business listed on the Malayan Stock Exchange in the initial years. These firms were traditional controlled by British interests having been initially listed on the London Stock Exchange before switching to the Malayan Stock Exchange. In 1973 the Kuala Lumpur Stock Exchange (KLSE) was established. The KLSE was subsequently renamed the Bursa Malaysia in April 2004.

The Bursa Malaysia is a key player in monitoring the corporate governance in Malaysia. A self-regulatory firm with its own *Memorandum and Articles of Association*, Bursa Malaysia is responsible for governing the conduct of members in securities dealing and surveillance of the market place. Bursa Malaysia is also responsible for development, revision and enforcement of key *Listing Requirements* that dictate key corporate governance

activities such as listing, disclosure requirements and standards to be maintained by a public listed firm(Devi, Hooper and Davey 2004).

Despite a lengthy history of an established formal trading market to oversee equity transactions, many concerns were raised about the level of corporate governance in Malaysia in the aftermath of the Asian financial crisis. To tackle corporate governance issues and concerns arising from the Asian financial crisis, the High Level Finance Committee (HLFC) established the Malaysian Institute of Corporate Governance (MICG) in 1998. The MICG is a non-profit public firm limited by guarantee with founding members consisting of the Federation of Public Listed Firms (FPLC), Malaysian Institute of Accountants (MIA), Malaysian Institute of Certified Public Accountants (MICPA), Malaysian Institute of Chartered Secretaries and Administrators (MAICSA) and Malaysian Institute of Directors (MID) (Devi et al. 2004; Zainal-Abidin and Ahmad 2007). Apart from being given the express aim of restoring investor confidence in the Malaysian equity market, the MICG was formed to educate and create awareness among the corporate sector, investors and public on corporate governance best practices (Devi et al. 2004). Among other objectives, the MICG had to facilitate business and corporate governance development in the nation, promote voluntary disclosure of corporate governance best practices and strengthen corporate governance principles and compliance effort. A pivotal action of the MICG upon its conception was the development of the Malaysian Code of Corporate Governance (hereafter referred to as *The Code*) in March 2000. *The Code* introduced (or significantly revised) regulations governing pivotal corporate governance mechanisms including those related to the role and responsibilities of the external auditor and audit committee. Recently the MICG has revised *The Code* (released October 1, 2007) and provided further amendments aimed at strengthening the Malaysian corporate governance framework to meet expectations in the domestic and international capital markets. Revisions to *The Code* focused primarily on enhancing the role and responsibilities of the board, internal audit processes, external auditor quality and audit committee composition (Yatim, Kent and Clarkson 2006).

Aside from Bursa Malaysia and the MICG, there are several other major regulators and regulations pertinent to the equity market. The CCM, for example, is responsible for monitoring corporate governance practices and standards in Malaysia. The main function of the CCM is to ensure that the provisions of key legislation are administered, enforced, carried out and complied with. The main legislation in question is the Firms Acts 1965, Trust Firms Act 1949, Kootu Funds (prohibition) Act 1971, and the Registration of Business Act 1956. Among others, the functions of the CCM include the enhancement and promotion of the supply of business and corporate information, acting as an agent of the government, provision of services in collection and enforcement of prescribed fees, and supervision of regulatory matters relating to corporations, firms and business. The CCM also encourages

and promotes proper conduct amongst directors, secretaries and other officers of a corporation (Devi et al. 2004).

Another major regulator responsible for monitoring corporate governance in Malaysia is the SC. The SC was established in accordance with the Securities Commission Act of 1993. A major function of the SC is to promote a strong and healthy securities market, and to maintain the confidence of investors in line with the provisions of the Securities Commission Act and Securities Industries Act of 1983. Prior to 1993, there was no single authority in Malaysia entrusted with the responsibility of regulating and systematically developing the nation's capital market. Prior to 1993, supervisory powers for regulating the capital market with Bursa Malaysia (formerly known as the KLSE) and government institutions. The SC is a self-funded statutory body with investigative and enforcement power, and reports to the Minister of Finance. In its capacity as the regulator of the capital market, the SC played a significant role in the establishment of the Financial Reporting Act of 1997, and continues to be involved in the decision making processes of the MASB, the Malaysian Accounting Standards Board (Devi et al. 2004).

3.4.2 *Financial accounting system in Malaysia*

Under British rule, for more than80 years prior to 1957, it is without surprise the origins of accounting standards and reporting practices in Malaysia have a strong foundation and similarity with UK practices (Ball et al. 2003). The Firms Act of 1965 further reinforced the influence of the British model on Malaysian financial accounting practices requiring disclosures which followed UK approaches, and published financial statements to reflect a true and fair view. Since the conceptualization of the International Accounting Standards (IAS) in the 1970s, however, IASs have become the major force shaping accounting standards in Malaysia.

The MASB is the primary authority responsible for issuing accounting standards concepts and principles. The MASB—together with the Financial Reporting Foundation (FRF)—provide the backbone of the financial accounting standard-setting framework in Malaysia. This framework is an independent standard-setting structure that seeks to represent all relevant parties in the standard-setting process, including preparers, users, regulators and the accountancy profession. The MASB was established under the Financial Reporting Act 1997 (the Act). The main functions of the MASB are to(MASB 2011):

- issue new accounting standards as approved accounting standards
- review, revise or adopt approved accounting standards
- issue statements of principles for financial reporting
- sponsor or undertake development of possible accounting standards
- conduct such public consultation as maybe necessary in order to determine the contents of accounting concepts, principles and standards

- develop a conceptual framework for the purpose of evaluating proposed accounting standards, and
- make such changes to the form and content of proposed accounting standards as it considers necessary.

The Financial Reporting Act of 1997, however, does not grant the MASB an enforcement role (Devi et al. 2004). The enforcement of approved accounting standards is seen to reside with the SC, Central Bank of Malaysia and the CCM. The Firms Act 1965 states that financial statements shall be deemed not to have complied with the requirement of any law administered by these bodies unless they have been prepared and kept in accordance with MASB Approved Accounting Standards.

3.4.3   Auditing environment

As in many Common Law nations there is a legal requirement in Malaysia for public accounting firms to perform audits of the financial statements of publicly listed firms (see the Firms Act of 1965). As at end of 2004 there were more than 1000 public accounting firms in Malaysia (Devi et al. 2004). Three sizes of categories can be used to describe public accounting firms in Malaysia: (1) *Big 4* international accounting firms; (2) medium sized firms with three to 10 partners; and (3) small firms with one to two partners or sole proprietors. The *Big 4* international accounting firms during the time of this study were KPMG Peat Marwick, Price Waterhouse Coopers, Deloitte Touché Tohmasu and Ernst and Young (Ahamad-Rapani 2006; Muhamad-Sori and Karbhari 2006; Yatim et al. 2006; Carlin, Finch and Laili 2009).[17] In Malaysia, the *Big 4* firms audit in excess of 60% of firms listed on the Bursa Malaysia (Devi et al. 2004; Ahamad-Rapani 2006).

The Malaysian Institute of Certified Public Accountants (MICPA) and the Malaysian Institute of Accountants (MIA) are the two bodies responsible for issuing approved auditing standards in Malaysia. The MICPA (formerly known as MACPA, the Malaysian Association of Certified Public Accountants) had its origin in 1958 with the objective of advancing the status and development of the accounting and auditing profession in Malaysia. This body (MICPA) also is responsible for providing the opportunity for individuals aspiring to qualify as an accountant and/or auditor to be trained under local law and practice (The Malaysian Accountant 1988). The approved auditing standards and guidelines are to be applied in audits of financial statements, and to review engagements and related services that are performed by members of MICPA and MIA.

In contrast to the MICPA, the MIA was established under the Malaysian Accountants Act of 1967. The MIA, therefore, is a statutory body that regulates auditing

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[17] Arthur Anderson, which had merged with a local firm Hanafiah Raslan and Mohamed, subsequently merged with Ernst and Young in 2002.

practices, and maintains a register of accountants coming under one of three categories of membership: public, registered and licensed accountants. Moreover, the MIA also looks after professional standards, education and training, supervision of the professional conduct of members, provision of professional work to the community, and the trust and respect of society. Overall, both the MICPA and MIA play a large role in setting auditing standards in Malaysia via a joint working group.

3.5   Literature review: Direct custodian excellence and major components

The financial accounting system and the quality of earnings may be subjected to influences from various corporate governance mechanisms and custodians. It is acknowledged in this thesis that the term direct custodian excellence has not been previously utilized in the extant literature. The term custodian (or custodians) is used to define corporate governance mechanisms comprising human-agents (i.e. individuals or small groups of people) driven by a structured human-agent decision-making process with formal authority for monitoring and oversight.[18]The notion of direct custodian, meanwhile, is utilized to draw a distinction between those custodians with immediate and explicit roles and responsibilities directed at monitoring and overseeing the financial reporting system of a firm from custodians with a less immediate or peripheral function. For instance, whilst a board of directors is recognized as having overall responsibility for the financial reporting system, this corporate governance mechanism has a far broader range of roles and responsibilities (e.g. establishing strategic alliances, defining mission objectives). Furthermore, corporate governance reforms introduced worldwide during past the decade have increasingly prompted boards of directors to delegate the oversight, monitoring and internal control responsibilities of the firm's financial reporting system squarely on the shoulders of the audit committee. In respect to the external auditor, the direct responsibilities attested to this corporate governance mechanism is firmly entrenched in the legislative statutes, institutional requirements (e.g. listing regulators) and market guidelines.

Given the phrase direct custodian is developed for this thesis, it is not possible to draw directly on prior research to establish any formal inference on what affect the *excellence* of a direct custodian in executing their required responsibilities may have on earnings conservatism. Nonetheless, as argued in this thesis, the two most prominent and immediate direct custodians of the financial reporting system are the auditor and audit committee. Prior literature suggests the auditor quality and audit committee effectiveness are the key determining factors in assessing how the external auditor and audit committee may

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[18]Non-custodian corporate governance mechanism may or may not involve human-agents. However, in contrast to custodian corporate governance mechanisms, those of a non-custodian nature (e.g. ownership structure) do not involve specific human-agent decisions and lack formal authority to monitor a firm's corporate governance and financial reporting system.

impact financial accounting issues. As the external auditor and audit committee constitute the most prominent direct custodians of the financial reporting system, it then follows that direct custodian excellence will be a function of audit quality and audit committee effectiveness. Given the wealth of extant literature discussing audit quality and audit committee effectiveness, the subsequent subsections provides a review of relevant research of these two concepts to aid in developing testable hypotheses for this thesis.

3.5.1   *Auditor quality*

Since Berle and Means (1932) raised concerns about agency costs and information asymmetry problems due to the separation of control and ownership, various researchers (e.g. Jensen and Meckling 1976; Watts and Zimmerman 1980; Chow 1982) working within an agency theory framework have sought to highlight essential monitoring mechanisms that are key to ensure greater alignment of the interests of corporate management (the agent) and shareholders (the owner). The external auditor is widely recognized as one of the chief corporate governance mechanisms for ensuring great principal/agent alignment of interests by providing external verification of the reliability of the firm's financial statements (Leftwich 1980; Ferguson, Francis and Stokes 2003).Whilst it is in explicit interests of shareholders to engage an external auditor, is argued by agency theorists that it is in the interests of corporate management. Firth (1997 p.7), for example, argues corporate management's abilities will be hampered without the engagement of an external auditor because the lack of a credible external ―audit will likely increase the cost of capital, restrict access to capital, and impose severe restrictions on management's actions". External auditors also play an essential role in influencing disclosure policies and practices both at the firm level and regulator level (Owusu-Ansah 1998; Apostolou and Nanopoulos 2009).

The external auditor's value and role has become firmly ingrained in key legislative statutes of the majority of nations worldwide. For example, in the US the need for an external audit is mandated in the US Securities Act. Whilst the important role of the external auditor is widely embedded in formal legislative statutes, Imhoff (2003 p.122), amongst others argues that during the past several decades ―whatinvestors and creditors do observe all too often lately are instances where it appears the auditor and/or the audit committees were not effective. These are the cases of fraud, material errors or misstatements, material omissions (non-compliance with mandatory disclosure)". These views, such as that of Imhoff (2003), highlight a growing recognition that the quality of the external auditor is a pivotal property in determining the overall value of the audit function.

Auditor quality has been one of the most important issues affecting the auditing profession (Vanstraelen 2000). Further, it is also a service and attribute highly valued by equity market participants (Moreland 1995; Franz, Crawford and Johnson 1998). It is

perceived that high auditor quality reduces the uncertainty associated with financial statements in the eyes of other contracting parties not involved in the preparation of such statements (Wallace 2004). In addition, contractual costs will also fall as auditing quality increases (Vanstraelen 2000).

Though a range of definitions of audit quality have been proposed, that of DeAngelo (1981a, 1981b) has become widely recognized and is generally accepted as the seminal characterization encapsulating auditor quality. DeAngelo (1981a, 1981b) suggested auditor quality is the probability an auditor both discovers and reports any material misstatements and accounting system breaches that affect the contract between corporate management and investors. Based on the definition of DeAngelo (1981a, 1981b), auditor quality is perceived as a function of the auditor's competence (i.e. ability to discover material misstatements and accounting system breeches) and independence (i.e. ability to report material misstatements and accounting system breeches).

Whilst there is generally a consensus surrounding a definition of auditor quality in the extant literature, there remains intense debate over the underlying determinants of this construct. Theoretical models consistent with the definition of DeAngelo (1981a, 1981b) and agency theory usually embody either a ‗reputation hypothesis‘ or a ‗deep pockets hypothesis‘ perspective toward auditor quality (Dye 1993; Lennox 1999). The reputation hypothesis perspective implies there is greater incentive for audit firms with higher reputation capital at risk to provide superior audits. Reputation hypothesis advocates suggest that due to greater political visibility, larger audit firms have a higher proportion of reputation capital at risk than smaller counterparts (Beatty 1989; Lennox 1999). Meanwhile, deep pockets hypothesis proponents argue audit firms with higher substantial economic wealth have a greater incentive to provide enhanced audits to minimize litigation risk (Dye 1993). The underlying rationale of the deep pockets hypothesis is external parties (e.g. shareholders, special interest groups) are likely to target larger audit firms for litigation due to the perception larger audit firms have more resources to make restitution on any legal damages awarded.

Various attributes underpinning auditor quality have been proposed by advocates of the reputation hypothesis or deep pockets hypothesis perspectives. Three factors that have gained considerable attention, and that are pertinent to this study, are: (a) auditor independence; (b) auditor specialization; and (c) auditor brand name. Discussion in the following sub-sections describes the prior literature related to the three noted factors and relevant influence on the quality of earnings.

3.5.1.1   Auditor independence

There is a lengthy detailed history of auditor independence being recognized as a vital cornerstone attribute of the audit function (e.g. Mautz and Sharaf 1961; Stamp and Moonitz 1979; Firth 1997). Prior literature routinely segregates independence into: (a) independence *in fact* ; and (b) independence *in appearance* (DeAngelo 1981a; Ramsay 2001).[19]A common extant literature and popular media perception is that if auditor independence is perceived to be impaired financial statement users impose a cost-of-capital premium for information risk associated with the inability to rely on the audit (Firth 1997; Johnstone, Sutton and Warfield 2001). Whilst an ‗*actual*‘ violation of independence logically implies it will be costly to the auditor, the mere perception independence is impaired by ‗*appearance*‘ can be just as damaging (Olazabal and Almer 2001).

In efficient capital markets rational agents forecast an auditor‘s independence is impaired when an economic bond is formed with clients leading to increased incentives for misrepresentations to prevail (DeAngelo 1981a; Salehi 2009). The provision of non-audit services by incumbent auditors to clients has long been considered (and increasingly in the past decade) by regulators worldwide as a major threat to auditor independence (Craswell 1999).The provision of non-audit services to clients by incumbent auditors has grown dramatically during the past several decades in many developed and emerging economies (e.g. Firth 1997; Abbott, Parker, Peters and Rama 2003c;Quick and Warming-Rasmussen 2005) as the range of services have expanded. Beattie and Fearnley (2002 p.20) postulate the main threats to independence (whether actual or perceived) from the joint provision of audit and non-audit services to a client are the perceptions by financial statement that: (a) motivations for self-interest are enhanced, thereby increasing economic dependence; (b) there is a lack of self-review, with managerial and auditing decisions being one and the same; (c) there is an inclination to act as an advocate of corporate management (particularly in adversarial circumstances); and (d) familiarity is enhanced via closer affinity with the client's management. A prime focus of a number of studies examining the provision of non-audit services by the incumbent auditor to clients has been directed toward the impact on earnings quality (with earnings management a particular concentration). Frankel et al. (2002), for example, provided evidence that when firms supplied higher non-audit services levels incumbent auditors were more likely to ‗just meet or beat‘ earnings forecasts. Furthermore, Frankel et al. (2002) found evidence of a positive association between non-audit fees and (a) small earnings surprises, and (b) the extent of discretionary accruals. Based

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[19]Firth (2002) contends independence *in fact* (i.e. actual independence) is generally unobservable; therefore, independence *in appearance* is assumed to be of prime importance to market participants (Beattie and Fearnley 2002). Often, independence *in appearance* is perceived as representing actual independence (Olazabal and Almer 2001).

on these findings, Frankel et al. (2002) concluded the provision of non-audit services threatened auditor independence as higher-fee-ratio clients receive preferential treatment from the incumbent auditor.

Whilst other research (Frankel et al. 2002; Ferguson, Seow and Young 2004) has found a positive non-audit services/earnings management association, some research has challenged such findings. Ashbaugh et al. (2003), for example, report no association between earnings management and the provision of non-audit services when discretionary accruals underpinning firm performance are adjusted. They (Ashbaugh et al. 2003) argue the results of Frankel et al. (2002) are due to sensitivity in research design choices. Based on their findings, Ashbaugh et al. (2003) conclude there is a lack of systematic evidence sustaining claims the purchasing of non-audit services leads to the impairment of auditor independence and lower earnings quality (via higher earnings management).

Aside from earnings management, another focus of researchers when comparing the impact of non-audit services on auditor independence, and therein earnings quality, is the frequency and degree of restatements of earnings. Raghunandan, Read and Whisenant (2003), for example, assessed whether the provision of non-audit services led to greater restated financial statements. Based on a sample of 110 firms that restated financial statements filed with the SEC during 2000 and 2001, they (Raghunandan et al. 2003) found the level of non-audit fees did not result in an inappropriate influence from incumbent auditors on the audit function leading to more restatements. In a similar study, Kinney, Palmrose and Scholz (2004) partitioned on-audit services into financial information system design and implementation, internal audit, tax, and unspecified non-audit services. They (Kinney et al. 2004) found insignificant results between:(a) non-audit fees and financial information system design and implementation; and (b) non-audit fees and internal audit services. However, they (Kinney et al. 2004) found evidence that unspecified non-audit fee levels were positively associated with restatements.

Table 3.1 provides a summary of major studies examining the linkage between non-audit services and earnings quality.

Table 3.1: Summary of major selected prior studies on auditor independence

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	Audit function	Overall governance	
Ashbaugh, LaFond and Mayhew (2003)	US 3,170 firms	November and December 2001	Income increasing/ decreasing discretionary accrual (earnings management)	-	-	No statistically significant association between NAS and income-increasing discretionary accruals. The association between NAS and absolute value of discretionary accruals is driven by income-decreasing discretionary accruals.
Agrawal and Chadha (2005)	US 159 firms	2000–2001	Earnings restatement	-	-	No significant association between NAS and earnings restatements.
Chin, Tsao and Chi (2007)	Taiwan 254 firms	2002–2003	Quality of voluntarily earnings forecast	-	-	Firm with a high ratio of NAS tend to issue more optimistically biased and inaccurate forecasts under a lower auditor liability regime.
Chung and Kallapur (2003)	US 1,871 firms	2000	Abnormal accruals (earnings management)	-	-	No significant association between the extent of NAS and abnormal accruals (earnings management).
Ferguson, Seow and Young (2004)	UK 610 firms	1996–1998	Restatement and discretionary working capital accruals (earnings management)	-	-	NAS is positively associated with earnings management measures.

Table 3.1: Summary of major selected prior studies on auditor independence *(continued)*

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Frankel, John and Nelson (2002)	US 3,074 firms	February 5, 2001–June 15, 2001	Discretionary accruals	-	-	Positive and significant association between NAS and magnitude of absolute discretionary accruals and both, income-increasing as well as income-decreasing discretionary accruals.
Kinney, Palmrose and Scholz (2004)	US 979 firms	January 1995–December 2000	Earnings restatements	-	(i) Financial information system design and implementation (ii) Internal audit services	No significant results between: (a) non-audit fees and financial information system design and implementation; and (b) non-audit fees and internal audit services. However, there is evidence that unspecified non-audit fee levels are positively associated with restatements.
Larker and Richardson (2004)	US 5,103 firms	2000–2001	Absolute value of accruals (Earnings management)	-	Extent of corporate governance	Ratio of non-audit fees to total fees has a positive relation with the absolute value of accruals. However, there is a negative relation between the level of fees (both audit and non-audit) paid to auditors and accruals (i.e. higher fees are associated with smaller accruals) are strongest for client firms with weak governance.
Raghunandan, Read and Whisenant (2003)	US 110 firms	2000–2001	-	-	Financial statements restatement	The level of non-audit fees did not result in an inappropriate influence from incumbent auditors on the audit function leading to more restatements.
Reynolds, Deis and Francis (2004)	US 4,148 firms	February 5, 2001–May 25, 2001	Discretionary accruals (earnings management)	-	-	No evidence that the relative level of NAS fees impairs auditor objectivity (no statistically significant association between NAS and discretionary accruals).
Ruddock, Taylor and Taylor (2006)	Australia 3,746 firms	1993–2000	Reduced earnings conservatism	-	-	Supplying of NAS compromises auditor independence and results in the auditor accepting less conservative accounting, leading to poorer earnings quality.

3.5.1.2   Audit specialization

Al-Basteki (2000) points out that the effectiveness of the audit function depends on the competency of the auditor, with more competent auditors likely to deter and detect irregularities, financial misstatement and questionable accounting practices, whether by error or fraud, than are non-specialist auditors. In respect to the technical competence of auditor quality, Maines (2001) claims this is a function of task-specific knowledge and expertise. Similarly, Healy and Palepu (2001) assert differences in the auditor's qualifications and professional training have an impact on the credibility of audit reports. Upon this basis it has been argued a better trained auditor (or specialist) will be more likely to detect and question non-compliance with accounting standards and generally accepted accounting principles than a non-specialist. Further, Abbott and Parker (2000) and Krishnan (2003) argue specialized auditors have greater expertise, resources and incentives to separate the information component of transactions from the background noise of business.

Various researchers (e.g. Craswell, Francis and Taylor 1995; Solomon, Shields and Whittington 1999; Elder and Zhou 2002; Balsam et al. 2003; Krishnan 2003) suggest specialization in a given industry serves as a hallmark of an auditor's technical competence. Solomon et al. (1999 p.191) define industry specialists as ―auditors who are so designated by their firms and whose training and practice experience largely are in a particular industry". The audit industry itself has increasingly come to recognize the value of specialization with Casterella, Francis, Lewis and Walker (2004) noting that in the early 1990s the big international accounting firms began to strive to differentiate themselves by changing the organizational structure and development of marketing strategies highlighting industry specializations.

As with auditor independence, a major focus of researchers examining the influence of auditor specialization has been on the quality of earnings and in particular earnings management. Elder and Zhou (2002), for example, in a study of 1,048 US initial public offerings (IPOs) from 1996 to 1998 spread over 17 industries, investigated whether industry specialist auditors provide higher quality audits in the IPO process in terms of lower earnings management. They (Elder and Zhou 2002) found IPOs audited by industry specialists exhibit less under pricing and smaller discretionary accruals. Similarly, Krishnan (2003) found discretionary accruals reported by clients audited by specialist auditors was on average 1.2% lower than those audited by non-specialist auditors. Krishnan (2003) concluded results were consistent with the view specialist auditors better alleviate accruals-based earnings management than non-specialist auditors leading to greater earnings quality. This conclusion is similar to Chen et al. (2005). Meanwhile, Balsam et al. (2003) showed firms audited by industry specialist auditors have lower discretionary accruals and higher earnings response

coefficients than clients of non-specialist auditors. Again, results of Balsam et al. (2003) infer industry specialists improve a client's earnings quality better than non-specialists.

Another major stream of auditor specialization associated research has focused on the quality of disclosures and financial account restatements. Dunn and Mayhew (2004), for instance, show evidence supports the view that hiring an industry specialist auditor will improve a client's disclosure quality. Based on analyst disclosure quality evaluations reported in the annual Association for Investment Management and Research (AIMR) Corporate Information Committee Reports, Dunn and Mayhew (2004) show an analyst's ranking of disclosure quality in unregulated industries is higher for firms audited by industry specialists. Likewise, O` Keefe et al. (1994) document evidence that fewer violations of GAAS reporting standards are associated with specialist auditors. Hence, this supported their (O`Keefe et al. 1994) argument that firms audited by an industry specialist have a higher level of compliance better disclosure practices. Carcello and Nagy (2004), meanwhile, focused on the association between auditor specialization and fraudulent financial reporting which has also attracted research. They (Carcello and Nagy 2004) found a negative relationship leading them (Carcello and Nagy 2004) to conclude that financial fraud reporting is lower for firms audited by an industry specialist than by a non-industry specialist.

Table 3.2 provides a summary of major studies examining the linkage between auditor specialization and earnings quality.

Table 3.2: Summary of major selected prior studies on auditor specialization

| Author (s) | Focus | Period covered | Dependent variable | | | Findings |
			Earnings quality	**Audit function**	**Overall governance**	
Abbot and Parker (2000)	US 500 firms	1994-1995	-		Audit committee effectiveness (independent members and active)	Firms with effective audit committee (i.e. comprised of independent members and active) are more likely to employ auditor specialist which expected to provide a higher level of audit quality than do non-specialist.
Balsam, Krishnan and Yang (2003)	US 50,116 firms (DAC) 19,091 firms (ERC)	1991-1999	Absolute level of discretionary accruals (DAC) and earnings response coefficients (ERC)	-	-	Clients of industry specialist auditors have lower DAC and higher ERC (having higher earnings quality) than clients of non-specialist auditors.
Carcello and Nagy (2004)	US 109firms	1990-2001	-	-	Financial fraud	Firms hiring auditor specialists are less likely to be associated with SEC enforcement actions for fraud reporting.
Chan, Yuan and Jian (2010)	US 32,536 firm-year observations	2001-2006	-	Information risk (impact on cost of debt)	-	Firms audited by joint national level and city level industry leaders or city-only industry leaders have better credit ratings and lower bond spreads (i.e. debt investors charge lower cost-of-debt capital for firms audited by joint national level and city level industry leaders or city-only industry leaders as they perceive lower information risk for these firms).
Chen , Lin and Zhou (2005)	Taiwan 365 firms	1999-2002	Accruals-based earnings	-	-	Specialist auditors (*Big 5* auditors) better alleviate accruals-based earnings management in the IPO year in Taiwan than non-specialist auditors leading to greater earnings quality.
Craswell, Francis and Taylor (1995)	Australia 1,484 firms	1982-1987	-	Audit fee premium	-	Auditor specialization allows auditor to charge a premium relative to non-specialist auditors (offers higher level of assurance than does a non-specialist which contributes positively to the auditor's credibility).
DeFond, Francis and Wong (2000)	Hong Kong 348firms	1992	-	Audit fee premium and audit quality	-	There is evidence of *Big 6* premium (i.e. higher audit quality and more expensive fees) for brand name and industry specialization.

Table 3.2: Summary of major selected prior studies on auditor specialization *(continued)*

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Dunn and Mayhew (2004)	US 14,757 firm-year observations	1990-1995	-	-	AIMR scores (disclosure quality)	There is evidence supporting the view that hiring an industry specialist auditor will improve a client's disclosure quality.
Elder and Zhou (2002)	US 1,048 IPO firms	1996-1998	Discretionary accruals	-	-	There is evidence that IPOs audited by industry specialists exhibit less under pricing and smaller discretionary accruals
Jenkins, Kane and Velury (2006)	US 2,436 firms	1990-1999	Discretionary accruals	-	-	High quality auditors (industry specialist) were only partially effective in constraining the decline in discretionary accruals (earnings quality).
Krishnan (2003)	US 4,422 firms	1989-1998	Discretionary accruals	-	-	Specialist auditors mitigate accruals-based earnings management more than non-specialist auditor. Thus, influence the quality of earnings.
O` Keefe, King and Gaver (1994)	US 935 reviews	1986	Compliance with GAAS	-	-	There is significantly greater compliance with auditing standards for industry specialists than non-specialists.
Rose-Green, Huang and Lee (2011)	US 737 firms	2004	-	-	disclosure of internal control weaknesses	Firms audited by industry specialist auditors are more likely to report disclosure of internal control weaknesses than firms audited by non-specialist auditors indicating that industry specialist auditors are quality differentiated.

3.5.1.3   Auditor brand name

Reputation capital—as defined by brand name—has been cited in the extant literature as another key component underlying auditor quality. Advocates of both the reputation hypothesis and deep pockets hypothesis perspectives of audit quality have suggested audit firms recognized as major brand leaders within the industry will have increased incentives to ensure higher auditing standards (DeAngelo 1981a, 1981b; Dye 1993). For example, it is suggested an audit firm with a highly recognized brand name will be the subject of increased litigation risk because a litigating party may perceive such an audit firm will be more willing to settle to avoid damaging political costs that impair reputation capital (this view is consistent with the tenets of the reputation hypothesis perspective). Further, it may be thought such an audit firm is more successful financially and, therefore, will have deeper resources to draw upon to settle legal action (this view is consistent with the tenets of the deep pockets hypothesis perspective).

A number of researchers have sought to investigate the possible linkage between brand name and key financial accounting issues such as earnings quality. Becker et al. (1998), for example, examined whether earnings management of firms audited by *Big 5*[20] audit firms (proxy for high brand name audit firms) were significantly different from firms audited by *Non-Big 5* audit firms. Results presented by Becker et al. (1998) show discretionary accruals that increase income were significantly higher amongst firms audited by *Non-Big 5* audit firms. Further, Becker et al. (1998) report clients of *Non-Big 5* audit firms with incentives to smooth earnings downwards (upwards) report significantly higher income-decreasing (increasing) discretionary accruals relative to clients of *Big 5* audit firms. Finally, brand name auditors are more likely to defend reputation capital by being less willing to accept questionable accounting methods, and report errors and irregularities (Becker et al. 1998). Findings of Becker et al. (1998) are consistent with subsequent research. Reynolds and Francis (2000), for instance, found auditors with prominent brand names were better able to detect earnings management due to superior knowledge. Chen et al. (2005), meanwhile, found higher quality auditors (as defined by *Big 5* versus *Non-Big 5*) constrained the opportunistic behavior of corporate management more significantly than low quality auditors.

Researchers suggest that whilst big brand name audit firms have an incentive to constrain earnings management, firms also have an incentive to engage such audit firms to prevent opportunistic behavior by corporate management (Reynolds and Francis 2000; Behn

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[20] At the time of their study (Becker et al. 1998) there were five recognized international audit firms (i.e. Arthur Anderson, PriceWaterhouseCoopers, Ernst and Young, KPMG and Deloitte and Touché). In the early 1990s the number was eight before consolidation reduced the number to first six then five. With the demise of Arthur Anderson the current number is four.

et al. 2008). Francis, Maydew and Sparks (1999), for example, argued a high-accrual firm subject to great opportunistic mismanagement behavior by corporate management would seek to hire a high brand name audit firm as the reputation capital of engaging a brand name identity provided greater perceived assurance that earnings reported were credible. They (Francis et al. 1999) found support for this assertion reporting high-accrual firms did more often hire *Big 5* auditors but reported lower levels of discretionary accruals than high-accrual firms using a *Non-Big 5* audit firm.

Table 3.3 provides a summary of major studies examining the linkage between auditor brand name and earnings quality.

Table 3.3: Summary of major selected prior studies on auditor brand name

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Beasley and Petroni (2001)	US 681 firms	1991-1992	-	-	Proportion of outside directors	The probability of insurer employing a brand name auditor that specializes in the insurance industry is increasing in the percentage of the members of the board of directors that are considered outsiders.
Becker, DeFond, Jiambalvo and Subramanyam (1998)	US 10,881 firms	1989-1992	Discretionary accruals (earnings management)	-	-	Brand name auditors (i.e. *Big 6* auditors) are able to detect earnings management because of superior knowledge and act to curb opportunistic earnings management to protect their reputations (i.e. firms hiring *Non-Big 6* auditors report significantly greater discretionary accruals than firms hiring *Big 6* auditor).
Behn, Choi and Kang (2008)	US 9,261 firms	1996-2001	-	-	Analyst earnings forecast	Big brand name audit firms have an incentive to constrain earnings management by corporate management (i.e. analysts' forecast accuracy is higher and the forecast dispersion is smaller for firms audited by *Big 5* auditor)
Chen, Lin and Zhou (2005)	Taiwan 365 firms	1999-2002	Unexpected accruals (earnings management)	-	-	Higher quality auditors (as defined by *Big 5* versus *Non-Big 5*) constrained the opportunistic behavior of corporate management more significantly than low quality auditors (i.e. less earnings management in the IPO year).
Chen, Wu and Zhou (2006)	Taiwan 2,324 firms	1998-2002	Discretionary accruals (earnings management)			Big brand name auditors (i.e. *Big 5* auditors) are associated with lower discretionary accruals, consistent with auditors' brand name reputation constraining earnings management.
Craswell, Francis and Taylor (1995)	Australia 1,484 firms	1982-1987	-	Audit fee premium	-	Big brand name auditor charges a premium relative to non-big brand name auditors (i.e. offers higher level of assurance which contributes positively to the auditor's credibility).
Francis, Maydew and Sparks (1999)	US 74,390 firm-year	1975-1994	Accruals-based earnings management	-	-	Firms hiring big brand name auditor (i.e. *Big 6* auditors) reported lower discretionary accruals than firms hiring *Non-Big 6* auditors.
Reynolds and Francis (2000)	US 6,747 firms	1996	Absolute value of total accruals/ discretionary accruals	-	-	Auditors with prominent brand names were better able to detect earnings management due to superior knowledge and to protect reputational capital.

3.5.1.4　Summary of auditor quality influence

The general overwhelming consensus in the extant literature is a firm engaging a higher quality auditor is also likely to report earnings of a better quality (e.g. Becker et al. 1998; Francis et al. 1999; Balsam et al. 2003; Francis 2004; Caramanis and Lennox 2008). It is suggested a higher quality auditor will have a greater ability to detect and deter earnings management, unintentional errors (i.e. increased competence) and secure heightened reputation capital (i.e. preserve independence more stringently). Switching to a higher quality auditor with an established brand name can aid a firm in reassuring investors of the credibility of the reported earnings, and the desire of the firm to address corporate management opportunism concerns. Finally, firms engaging a higher quality auditor will likely reduce information risk of higher accruals based earnings (Li, Stokes, Taylor and Wong 2009).

Given the reputed auditor quality/earnings quality linkage, and the view earnings conservatism is a potential catalyst for higher quality earnings, it is prudent to infer higher quality auditors are more likely to seek to enforce and encourage conservative earnings practices. As discussed in the previous sub-sections, a higher quality auditor is likely to have strong incentives to pursue earnings conservatism as a means of ensuring clients report higher quality earnings. For example, a higher quality auditor will seek to protect and enhance reputational capital and reduce litigation risk (e.g. DeAngelo 1981a, 1981b; Dye 1993; Becker et al. 1998; Francis et al. 1999; Balsam et al. 2003; Francis 2004; Caramanis and Lennox 2008).

In respect to the three main components underlying auditor quality investigated in this study, incentives exist for why a more independent auditor with an established brand name and specializing in a given industry sector is likely to instill higher earnings conservatism than less independent auditors of a less well-known brand name and with lack of industry specialization. For instance, a more independent auditor (e.g. an incumbent auditor with zero or little non-audit services for the client relative to total fees) is less likely to have formed an economic bond with the client, thereby, affording the auditor greater flexibility to take affirmative action (e.g. writing a qualified audit report) to improve earnings, such as ensuring swifter recognition of losses by corporate management (i.e. greater earnings conservatism). As for auditor specialization, greater knowledge of the industry standards and practices, combined with an increased access to specific resources, ensures the specialist auditor is likely to be in a better position to detect more swiftly circumstances where an industry client should be reporting more conservative earnings (e.g. losses) to avoid unintentional misstatements. Furthermore, if an audit firm has sought to develop an industry specialization and markets itself as such, then the specialist audit firm will have getter reputation capital at stake and be the subject of higher litigation risks. To

preserve reputation capital and avoid costly litigation costs a specialist auditor is likely to be inclined to reinforce more conservative earnings practices from clients within the specialized industry. Finally, for an audit firm with a highly recognized brand name there will be incentives to reduce political costs arising from any litigation action if earnings of a client are found to be overstated. Thus, a high brand name audit firm is more likely to err on the side of caution and be more aggressive in ensuring clients adopt conservative accounting practices that enhance the quality of reported earnings.

3.5.2 *Audit committee effectiveness*

There is very limited empirical research that considers the relationship between the audit committee and earnings conservatism. Research, however, provides evidence of the linkage between audit committees and earnings quality, thereby suggesting the likelihood of an audit committee/earnings conservatism linkage (Beasley and Salterio 2001; DeZoort et al. 2002; Klein 2002a; DeFond, Hann and Hu 2005). The mere presence of an audit committee, however, does not automatically imply an audit committee/earnings conservatism linkage exists. Rather, the effectiveness of the audit committee will determine whether the sub-committee actively seeks to conserve earnings (Song and Windram 2000; DeZoort et al. 2002; Klein 2002a; Vafeas 2005; Dhaliwal, Naiker and Navissi 2006; Turley and Zaman 2007). DeZoort et al. (2002 p.41) offers a comprehensive definition of audit committee effectiveness by other corporate governance scholars (e.g. Xie et al. 2003; Cohen et al. 2004; Vera-Munoz 2005), and provide an appropriate base for this study:

> *An effective audit committee has qualified members with the authority and resources to protect stakeholder interests by ensuring reliable financial reporting, internal controls, and risk management through its diligent oversight efforts.*

Various studies (e.g. Wright 1996; Klein 2002a, 2002b; Xie et al. 2003; Karamanou and Vafeas 2005; Vafeas 2005; Lennox and Park 2007; Steward and Munro 2007; Turley and Zaman 2007) suggest a more effective audit committee will improve earnings quality. Specifically, more effective audit committees are better able to mitigate opportunities for corporate management to engage in opportunistic behavior that can affect earnings quality (Klein 2002b). Furthermore, a more effective audit committee will have greater ability to override aggressive financial accounting policy choices initiated by corporate management that could promote less conservative earnings results. Finally, if an audit committee is effective in an arbitration role, the audit committee will develop more systematic compromises between corporate management and external parties, for example, the external auditor (DeZoort 1998; DeZoort and Salterio 2001).

A number of determinants have been cited in the extant literature that researchers propose affect audit committee effectiveness (Abbott, Park and Parker 2000; Klein 2002a,

2002b; Abbott et al. 2003a; Carcello and Neal 2003; Xie et al. 2003; Van der Zahn and Tower 2004; Krishnan 2005a; Carcello, Hollingsworth and Klein 2006; Abbott, Parker, Peters and Rama 2007; Krishnan and Visvanathan 2008; Carcello, Neal, Palmrose and Scholz 2011). These determinants can be broadly categorized into four main components: (1) arrangement (i.e. audit committee independence, size and duality); (2) resources (i.e. financial expertise, committee experience); (3) authority (i.e. power enshrined in the audit committee); and (4) diligence (i.e. audit committee frequency of meeting) as commented by DeZoort et al. (2002). The first two components relate to structural composition and the latter two relate to operational composition features. Whilst it would be preferable to consider all possible determinants underlying audit committee effectiveness, various pragmatic constraints (e.g. unavailable data, inability to effectively operationalize) prevent such a comprehensive examination. Thus, this study considered three key components of an audit committee, that is, audit committee independence, financial expertise and diligence.

3.5.2.1 Audit committee independence

Corporate governance advocates, regulators and scholars frequently argue that an audit committee comprised of a higher proportion of independent directors (if not entirely) is more likely to be effective in discharging the sub-committee's responsibilities. Numerous studies have examined the relationship between audit committee independence and quality of financial reporting (Vicknair, Hickman and Carnes 1993; Abbott et al. 2000; Beasley and Petroni 2001; Klein 2002b; Bédard et al. 2004; Lee, Mande and Ortman 2004). Empirical results generally indicate audit committees comprised either entirely, or by a majority, of independent directors are more successful in improving the quality of reported earnings (Klein 2002b; Abbott, Parker, Peters and Raghunandan 2003b; Xie et al. 2003; Vafeas 2005), external audit function (Abbott and Parker 2000; Carcello and Neal 2000; Abbott et al. 2007)and improve the overall corporate governance practices within firms (Beasley and Salterio 2001; Klein 2002a; Chen et al. 2007). Table 3.4 provides a summary of major studies examining the influence of audit committee independence on key financial accounting and corporate governance issues.

Table 3.4: Summary of major selected prior studies on audit committee independence

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Abbott, Parker and Peters (2004)	US 88 firms	January 1, 1991 to December 31, 1999	Occurrence of restatements	-	-	Firms with audit committees that are both independent and active (diligence) and have at least one member who is a financial expert exhibit a significant negative association with the occurrence of restatements.
Abbott, Parker, Peters and Raghunandan (2003a)	US 538 firms	February 5, 2001 to June 30, 2001	-	Lower non-audit fees	-	Audit committees consisting solely of independent directors and meet at least four times a year have lower non-audit fees; thereby, increasing audit committee effectiveness.
Abbott, Parker, Peters and Rama (2007)	US 219 questionnaires	2000	-	Routine internal audit activities outsourcing	-	Firms with independent, active and expert audit committees are less likely to outsource routine internal audit activities to the external auditor.
Agrawal and Chadha (2005)	US 159 firms	2000-2001	Occurrence of restatements	-		The probability of restatement's occurrence is significantly lower in firms whose audit committees have independent directors with financial expertise.
Beasley and Salterio (2001)	Canada 627 firms	1994	-	-	Large board of directors and outside members on boards	Firms with (i) more outside directors (ii) segregate the board chairperson and chief executive officer position and (iii) larger board are significantly more likely to create independent audit committee with greater knowledge and experience.
Carcello and Neal (2000)	US 223 firms	1994	-	Issuance of a qualified audit report	-	If majority of audit committee members are non-independent (affiliated directors), it is less likely for the auditor to issue a going-concern report for firms experiencing financial distress in 1994.
Davidson, Goodwin-Stewart and Kent (2005)	Australia 434 firms	2000	Accruals quality	-	-	Firms with a majority of non-executive directors on the board and audit committee are significantly associated with a lower likelihood of earnings management.
Klein (2002a)	US 692 firm-year observations	1992-1993	Opportunities for firm growth	-	-	There is a negative relationship between audit committee independence and abnormal accruals (earnings management).
Krishnan (2005)	US 128 firms	1994-2000	-	-	Internal control problem	There is a negative association between the presence of internal control problems and audit committee independence and audit committee with financial expertise.

Table 3.4: Summary of major selected prior studies on audit committee independence *(continued)*

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Lennox and Park (2007)	US 1,198 firms	1995-2000	-	Audit firms appointments	-	Firms with independent audit committee are less likely to appoint officer-auditor affiliation.
McMullen and Raghunandan (1996)	US 51 firms	1986 to 1989	*SEC* enforcement actions/material restatements of earnings	-	-	Firms with audit committees which are comprised solely of outside directors and have at least one financial expert and meet at least three or four times a year have less financial reporting problems (*SEC* enforcement actions/material restatements of earnings).
Van der Zahn and Tower (2004)	US 485 firm-year observations	2000-2001	Discretionary accruals	-	-	Firms with higher proportion of independent audit committee members, greater diligence and reduced presence on other boards and committees are more effective in constraining earnings management.
Vicknair, Hickman and Carnes(1993)	US 100 *NYSE* firms	1980 to 1987	-	-	Directors who have some operating association with the firm	‗Grey' director representation on audit committees is pervasive across *NYSE* firms and over time.
Xie, Davidson and DaDalt (2003)	US 282 firms	1992, 1994 and 1996	Discretionary current accruals	-	-	Earnings management is less likely to occur if audit committee comprised of independent committee members and members with financial expertise which meets regularly.

As indicated in Table 3.4, empirical findings have generally supported the perception that independent audit committees are more effective in constraining corporate management and improving earnings quality. Klein (2002b), for example, found that the percentage of independent audit committees were negatively associated with a firm's abnormal accruals. Xie et al. (2003), meanwhile, observed a significant positive relationship between earnings management (as measured by discretionary accruals) and audit committees with a majority of outside directors. Similarly, Abbott et al. (2004) concluded that restatements were significantly less likely when audit committees were comprised of solely independent members.

The past literature also suggests that firms with independent audit committee members have a lower incidence of fraud. McMullen and Raghunandan (1996), for example, found that firms with reporting problems were less likely to have audit committees composed solely of outside directors. Additionally, Beasley, Carcello, Hermanson and Lapides (2000) found that firms experiencing fraud had less independent audit committees than firms not experiencing fraud. These findings are similar to other research (Beasley 1996; Abbott et al. 2000; Carcello and Nagy 2002; Farber 2005).

Finally, the audit committee independence is also thought to influence the quality of a firm's audit function, both external and internal (Abbott and Parker 2000; Carcello and Neal 2000; Abbott et al. 2003a; Chen et al. 2005). Carcello and Neal (2000), for example, showed that if the majority of audit committee members are non-independent, it is less likely that the auditors would issue a going concern report to financially distressed firms. Abbott et al. (2003a), meanwhile, found that audit committees comprised entirely of outside directors are significantly associated with audit fees suggesting the aspiration for high-quality audits. Moreover, firms with independent audit committees were less likely to outsource routine internal audit activities to the external auditors (Abbott et al. 2007).[21]

3.5.2.2   Audit committee financial expertise

Audit committee financial expertise has received growing attention amongst corporate governance advocates and researchers (McDaniel, Martin and Maines 2002; Bédard et al. 2004; DeFond et al. 2005; Chan and Li 2008). An expanding role, responsibilities and expectations is placing increasing pressure on the sub-committee's members to develop greater financial expertise to counter the escalating complexity and sophistication of the financial reporting system (Blue Ribbon Committee 1999; ASX Corporate Governance Council 2003, 2007).

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[21] Given the fact that an outsourced internal auditor is not normally present at the firm's premises and unlikely to be as familiar with a firm's operations compared to an in-house internal audit function, the quality of the out-sourced internal audit is perceived to be lower than an internal audit function which is in-house (DeFond, Francis and Wong 2000; Carcello and Nagy 2002; Casterella et al. 2004).

A number of studies (as summarized in Table3.5) have investigated the relationship between audit committee financial expertise and a firm's financial reporting processes. McMullen and Raghunandan (1996), for example, provide evidence that firms with poorer earnings quality were less likely to have a financial expert on the audit committee. Bedard et al. (2004) and Agrawal and Chadha (2005) found that aggressive earnings management is negatively associated with the financial and governance expertise of audit committee members. In a similar vein Dhaliwal et al. (2006) concluded that there is a positive relationship between the existence of an accounting financial expert on the audit committee and the firm's accruals quality. Abbott et al. (2004), meanwhile, showed audit committees with greater financial expertise are better able to prevent occurrences of financial misstatements.

In respect to the audit function, DeZoort et al. (2003) found evidence that financial experts on an audit committee would provide the sub-committee with greater resolve to support the external auditor during auditor-management disagreements. Also, DeFond et al. (2005) found greater audit committee financial expertise enhanced the firm's overall internal control environment. Finally, Krishnan and Visvanathan (2008) and Chan and Li (2008) showed that a firm's value was enhanced by the presence of a financial expert on the audit committee.

Whilst the majority of studies generally support a positive association between audit committee expertise and earnings quality, other studies (e.g. Anderson, Mansi and Reeb 2004; DeFond et al. 2005; Lee and Mande 2005) fail to show any significant audit committee expertise/earnings quality relationship. Given some mixed empirical findings some caution may be required in interpreting the extent of an audit committee expertise/earnings quality linkage, and that such an association may not be universal to all aspects of the earnings quality concept.

Table 3.5 provides a brief summarized overview of prominent studies examining the influence of audit committee expertise on financial accounting issues.

Table 3.5: Summary major selected prior studies audit committee financial expertise

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Abbott, Parker and Peters (2004)	US 88 firms	January 1, 1991 to December 31, 1999	Occurrence of restatements	-	-	Firms with audit committees that are both independent and active (diligence) and have at least one member who is a financial expert exhibit a significant negative association with the occurrence of restatements.
Agrawal and Chadha (2005)	US 159 firms	2000 to 2001	Occurrence of restatements	-	-	Firms with audit committees comprised of independent directors with financial expertise have lower restatement problem.
Carcello, Neal and Hollingsworth (2006)	US 400 firms	July 15, 2003 to December 31, 2003	Discretionary current accruals	-	-	Audit committees with an accounting financial expert are more effective in reducing earnings management.
Chan and Li (2008)	US 200 firms	2000	-	-	Firm value as represented by stock price (holding period return)	The presence of expert-independent directors on the audit committee and board enhances firm value, thereby, increasing audit committee effectiveness.
DeZoort, Hermanson and Houston (2003)	US 55 audit committee members	2000	-	Support auditor in an auditor-management disagreement	-	More experienced audit committee members and experienced members who are CPAs were more supportive of the auditor in an auditor-management disagreement.
Dhaliwal, Naiker and Navissi (2006)	US 3,501 audit committee members	1995 to 1998	Accruals quality	-	-	There is a positive relationship between the existence of an accounting financial expert on the audit committee and accruals quality.
Krishnan (2005)	US 128 firms	1994 to 2000	-	-	Extent of internal control problems	Firms face greater internal control problems if the audit committee does not have independent members and financial experts.
Krishnan (2008)	US 211 firms	2000-2002	Accounting conservatism	-	-	Audit committee's financial expertise is positively associated with conservatism when financial expertise is defined to include only accounting experts.

Table3.5: Summary major selected prior studies audit committee financial expertise *(continued)*

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Krishnan and Visvanathan (2007)	US 164 firms	November 15, 2004 to March 1, 2005	-	-	Internal control weaknesses	Audit committees who meet regularly and have a smaller proportion of financial experts are more likely to detect internal control weaknesses.
Mangena and Pike (2005)	UK 262 firms	2001-2002	Interim financial disclosure	-	-	There are positive association between financial expertise and interim disclosure.
McMullen and Raghunandan (1996)	US 51 firms	1986 to 1989	*SEC* enforcement actions/material restatements of earnings	-	-	Firms with audit committees which are comprised solely of outside directors and have at least one financial expert and meet at least three or four times a year have less financial reporting problems (*SEC* enforcement actions/material restatements of earnings).
Noland, Nichols and Flesher (2004)	US 1,036 commercial banks	-	-	-	Internal controls	Institutions with audit committee members who had banking or financial experience reported significantly more effective internal controls than institutions without this expertise on the audit committee.
Xie, Davidson and DaDalt (2003)	US 282 firms	1992, 1994 and 1996	Discretionary current accruals	-	-	Earnings management is less likely to occur if there are independent audit committee members and a financial expert on the audit committee which meets regularly.

3.5.2.3 Audit committee diligence

Diligence is viewed by regulators, corporate governance advocates and scholars as a major factor determining audit committee effectiveness (Blue Ribbon Committee 1999; Malaysian Code of Corporate Governance 2000, 2007). This characteristic refers to the willingness of audit committee members to work together as needed to prepare and ask questions of management, external and internal auditors, and other relevant constituents, and to pursue answers when necessary (DeZoort et al. 2002).

Key prior literature examining the influence of audit committee diligence on financial accounting issues pertinent to this study is summarized in Table 3.6. As shown in Table 3.6, a significant strand of the published literature has identified a positive relationship between the number of audit committee meetings (the proxy used for audit committee diligence) and the quality of reported earnings (Menon and Williams 1994; McMullen and Raghunandan 1996; Xie et al. 2003; Vafeas 2005). Abbott et al. (2000), Abbott et al. (2004) and Vafeas (2005), for example, report firms with audit committees meeting at least biannually were less likely to be sanctioned by the SEC for financial reporting problems. Xie et al. (2003) and Vafeas (2005), meanwhile, concluded that earnings management was less likely to occur if a firm's audit committee meets regularly. Beasley et al. (2000) and Farber (2005) concluded that increased audit committee activity resulted in a negative occurrence of financial restatements and fraud respectively.

There are also a number of studies that have found a significant relationship between audit committee activity and the audit function. Stewart and Munro (2007), for instance, stated that frequent audit committee meetings with auditors were positively associated with a reduction in the firm's audit risk. Moreover, Abbott et al. (2007) indicated that firms with active audit committees were also less likely to outsource routine internal audit activities to the external auditor.

Table 3.6 provides a brief summarized overview of prominent studies examining the influence of audit committee diligence on financial accounting issues.

Table 3.6: Summary of major selected prior studies on audit committee diligence

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Abbot and Parker (2000)	US 500 firms	1994-1995	-	-	Occurrence of fraud and aggressive accounting	Frequency of audit committee meetings is negatively associated with fraudulent financial reporting and financial reporting misstatement.
Abbott, Parker and Peters (2004)	88 observations	1991 to 1999	Occurrence of restatements	-	-	Firms with audit committees that are both independent and active and have at least one member who is a financial expert exhibit a significant negative association with the occurrence of restatements.
Abbott, Parker, Peters and Raghunandan (2003a)	538 firms	February 5, 2001 to June 30, 2001	-	Lower non-audit fees	-	Audit committees consisting solely of independent directors and meet at least four times a year have lower non-audit fees; thereby, increasing audit committee effectiveness.
Abbott, Parker, Peters and Rama (2007)	219 questionnaires	2000	-	Outsource routine internal audit activities to the external auditor	-	The results indicate that firms with independent, active and expert audit committees are less likely to outsource routine internal audit activities to the external auditor.
Beasley, Carcello, Hermanson and Lapides (2000)	66 firms	1987 to 1997	-	-	Existence of fraud	Fraud firms and non-fraud firms differ to the extent that audit committees exist and are independent from management. In addition, the audit committees also differ in terms of audit committee diligence (number of meetings) and internal audit existence.
Bedard, Chtourou and Courteau (2004)	3,451 firms	1996	Discretionary current accruals	-	-	Aggressive earnings management is negatively associated with the financial and governance expertise of audit committee members, audit committee member independence and a clear mandate defining the responsibilities of the audit committee.
DeZoort, Hermanson and Houston (2003)	US 55 audit committee members	2000	-	Support auditor in an auditor-management disagreement	-	More experienced audit committee members and experienced members who are CPAs were more supportive of the auditor in an auditor-management disagreement.

Table 3.6: Summary of major selected prior studies on audit committee diligence *(continued)*

Author (s)	Focus	Period covered	Dependent variable			Findings
			Earnings quality	**Audit function**	**Overall governance**	
Farber (2005)	87 firms	1982 to 2000	-	-	Existence of fraud	Fraud firms have fewer audit committee meetings and fewer financial experts, thereby, reducing audit committee effectiveness.
McMullen and Raghunandan (1996)	US 51 firms	1986 to 1989	*SEC* enforcement actions/material restatements of earnings	-	-	Firms with audit committees which are comprised solely of outside directors and have at least one financial expert and meet at least three or four times a year have less financial reporting problems (*SEC* enforcement actions/material restatements of earnings).
Menon and Williams (1994)	200 firms	1986 to 1987	-	-	Reporting of consecutive period losses	The majority of audit committees formed were not utilized effectively since the audit committees were staffed by insiders and met infrequently. Audit committees may, therefore, be created for the purposes of appearances rather than to increase stockholder's control of management.
Vafeas (2005)	252 firms	1994 to 2000	Likelihood small earnings increase and meeting or beating analyst forecasts	-	-	The independence and activity levels of an audit committee have a positive relationship with the quality of the earnings information produced.
Van der Zahn and Tower (2004)	US 485 firm-year observations	2000-2001	Discretionary accruals	-	-	Firms with higher proportion of independent audit committee members, greater diligence and reduced presence on other boards and committees are more effective in constraining earnings management.
Xie, Davidson and DaDalt (2003)	US 282 firms	1992, 1994 and 1996	Discretionary current accruals	-	-	Earnings management is less likely to occur if audit committee comprised of independent committee members and members with financial expertise which meets regularly.

3.5.2.4   Summary of audit committee effectiveness influence

Overall, as indicated by the literature review associated with audit committee effectiveness research defined in the prior sub-sections, there are various incentives that exist to suggest why an audit committee may be motivated to promote earnings conservatism (Abbott et al. 2000; Abbott and Parker 2000; Carcello and Nagy 2002). For instance, members of audit committees, especially independent members, have strong incentives to ensure the adoption of conservative accounting practices so as to protect and enhance their (i.e. members of the audit committee) reputational capital and improve or at the very least, not diminish, opportunities for appointment to boards of other firms (Abbott et al. 2000; Abbott and Parker 2000; Carcello and Nagy 2002). Although service on an audit committee may increase a director's reputation as an effective monitor, such service also exacerbates the potential reputational damage and, consequently, potentially creates less opportunity for appointment to other boards if financial misstatements occur by firms while such directors serve on the audit committee. Also, since conservatism reduces management's ability and incentive to overstate earnings by requiring a higher degree of verification for gaining recognition and reduces management ability to withhold unexpected losses, an effective audit committee is more likely to adopt conservatism. Furthermore, financial misstatements can lead to litigation risks and costs (Palmrose and Scholz 2002; Abbott et al. 2004). As a result, the preservation of reputational capital and reduction in litigations risks/costs serve as an important motivation for higher quality monitoring by audit committees. Past literature shows that conservatism helps in retaining reputational capital by reducing litigation risk (Watts 2003b; Pae et al. 2005; Lara et al. 2009a; Lara et al. 2009b). Therefore, it is more likely that an effective audit committee will engage in conservative accounting practices so that the reputational damage and threat of litigation can be prevented.[22]

In respect to the three major components of audit committee effectiveness considered in this thesis, prior theoretical and empirical research provides a sound foundation to suggest that independent audit committee members are more likely to constrain management behavior in a number of areas and improve the quality of reported financial information. As part of improving the quality of reported financial information, audit committees with independent members are more likely to adopt financial accounting

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[22] Firm litigation costs arise when different parties to the firm sue managers, directors or auditors in an attempt to recover incurred losses caused by misstatements in the financial statements, thereby assigning responsibility for reported losses not reflecting the true underlying economic performance of the firm Lara et al. (2009b). According to Watts (2003a), Pae et al. (2005) and Lara et al. (2009a; 2009b),the right of shareholders to sue for financial statement misrepresentation creates a demand for conservative accounting in order to limit litigation losses stemming from allegations of overstated net assets or income. Watts (2003b), further, observed that courts generally punished overstatement of net assets or income more than understatement because stakeholders (especially shareholders) are more likely to suffer losses when earnings/assets are overstated than understated. Since the expected cost of overstatement is higher than the cost of understatement, management and auditors have incentives to report conservatism.

practices which will help restrain overstatement. Earnings conservatism is such a tool which can ensure that a firm's financial report is not overstated since conservatism requires the recognition of bad news sooner and delays the reporting of good news. More independent audit committees, therefore, are likely to support actions promoting earnings conservatism.

Meanwhile, audit committee members with financial expertise can enhance conservatism by assessing the adequacy of financial provisions (e.g. warranty obligations, law suits, contingencies). An audit committee member with financial expertise will also be better able to detect aggressive earnings management since the financial expert can examine the reasonableness of explanations provided by management (Krishnan and Visvanathan 2008). An audit committee member with financial expertise, in fact, will be motivated to encourage conservative accounting practices in order to preserve his reputational capital and the opportunity to serve on another board and, at the same time, to reduce litigation concerns (McDaniel et al. 2002; DeFond et al. 2005; Carcello et al. 2006; Dhaliwal et al. 2006).

Finally, a diligent audit committee will always be motivated to maintain reputational capital and show greater concern about overstatements than understatements. If an audit committee meets regularly the committee will better be able to pick misstatements and ensure the quality of reported earnings. Since conservative accounting practices represent higher quality earnings, it is likely that diligent audit committees will be better able to ensure the adoption of conservative earnings practices by management.

3.6   Hypotheses and conceptual schema

As per the discussion in the prior section, the theoretical and empirical literature generally supports the view that auditor quality (audit committee effectiveness) is likely to have a positive (positive) influence on earnings conservatism so as to improve the quality of the reported earnings. That is, a firm engaging an external auditor of higher quality (comprising a more effective audit committee) is more likely to be associated with higher (higher) levels of conservative accounting practices such as the more timely recognition of losses and the reversal of such losses more swiftly leading to more persistent earnings. Given auditor quality and audit committee effectiveness are argued to be the primary underlying components of direct custodian excellence, it is rational to extend the analysis to infer higher direct custodian excellence will be associated with higher earnings conservatism. Upon this basis the following general proposition (denoted by GP_{DCE}) considering the direct custodian excellence/earnings conservatism association is defined as follows:

$GP_{DCE:}$ Earnings conservatism will be significantly higher amongst Malaysian publicly listed firms having pivotal direct custodians of the financial reporting system with higher quality than Malaysian publicly listed firms with pivotal direct custodians of the financial reporting system of lower quality.

As it is the intent of this study to consider earnings conservatism within the realms of timeliness and persistence as defined by Basu (1997), two separate testable hypotheses are formed to examine the specific influence of direct custodian excellence. The two testable hypotheses (denoted by GH_a for timeliness of earnings conservatism and GH_b for persistence of earnings conservatism) associated with the GP_{DCE} are stated as follows:

$GH_{a:}$ Malaysian publicly listed firms with direct custodian excellence are more likely to be associated with timelier recognition of negative news in reported earnings.

$GH_{b:}$ Malaysian publicly listed firms with direct custodian excellence are more likely to be associated with the persistence of earnings.

Whilst the main focus of this study is the overall impact of direct custodian excellence on earnings conservatism, the analysis will also consider the individual influence of each of the two main components underlying this construct. As per the discussion on audit quality, the theoretical and empirical literature suggests a positive influence. To this end the follow proposition specific to auditor quality is formed (denoted by GP_{AQ}), followed by two testable hypotheses focusing on the timeliness of earnings conservatism (denoted by GH_{1a}) and the persistence of earnings conservatism (denoted by GH_{1b}).

$GP_{AQ:}$ Earnings conservatism of Malaysian public listed firms engaging the services of a high quality external auditor will be significantly higher than Malaysian public listed firms engaging the services of a low quality external auditor.

$H_{1a:}$ Malaysian publicly listed firms with a higher quality external auditor are more likely to be associated with timelier recognition of negative news in reported earnings.

$H_{1b:}$ Malaysian publicly listed firms with a higher quality external auditor are more likely to be associated with the persistence of earnings.

Finally, in respect to audit committee effectiveness the following general proposition and two testable hypotheses are formed as follows:

$GP_{ACE:}$ Earnings conservatism of Malaysian public listed firms with a more effective audit committee will be significantly higher than Malaysian public listed firms with a less effective audit committee.

$H_{2a:}$ Malaysian publicly listed firms with more effective audit committees are more likely to be associated with timelier recognition of negative news in reported earnings.

$H_{2b:}$ Malaysian publicly listed firms with more effective audit committees are more likely to be associated with the persistence of earnings.

Figure 3.1 provides a diagrammatical overview of the study and the respective testable hypotheses.

Figure 3.1: The conceptual schema

Direct Custodian Excellence (DCE_{i,t})

Auditor Quality (AQ_{i,t})

Auditor Independence *(FEE_{i,t})*

Auditor Specialization *(SP_{i,t})*

Auditor Brand Name *(BN_{i,t})*

Audit Committee Effectiveness *(ACE_{i,t})*

Audit Committee Independence *(IND_{i,t})*

Audit Committee Expertise *(EXP_{i,t})*

Audit Committee Diligence *(DIL_{i,t})*

GP_{AQ} *(H_{1a}, H_{1b})*

GP_{DCE} *(GH_a, GH_b)*

GP_{ACE} *(H_{2a}, H_{2b})*

Earnings Conservatism (EC_{i,t})
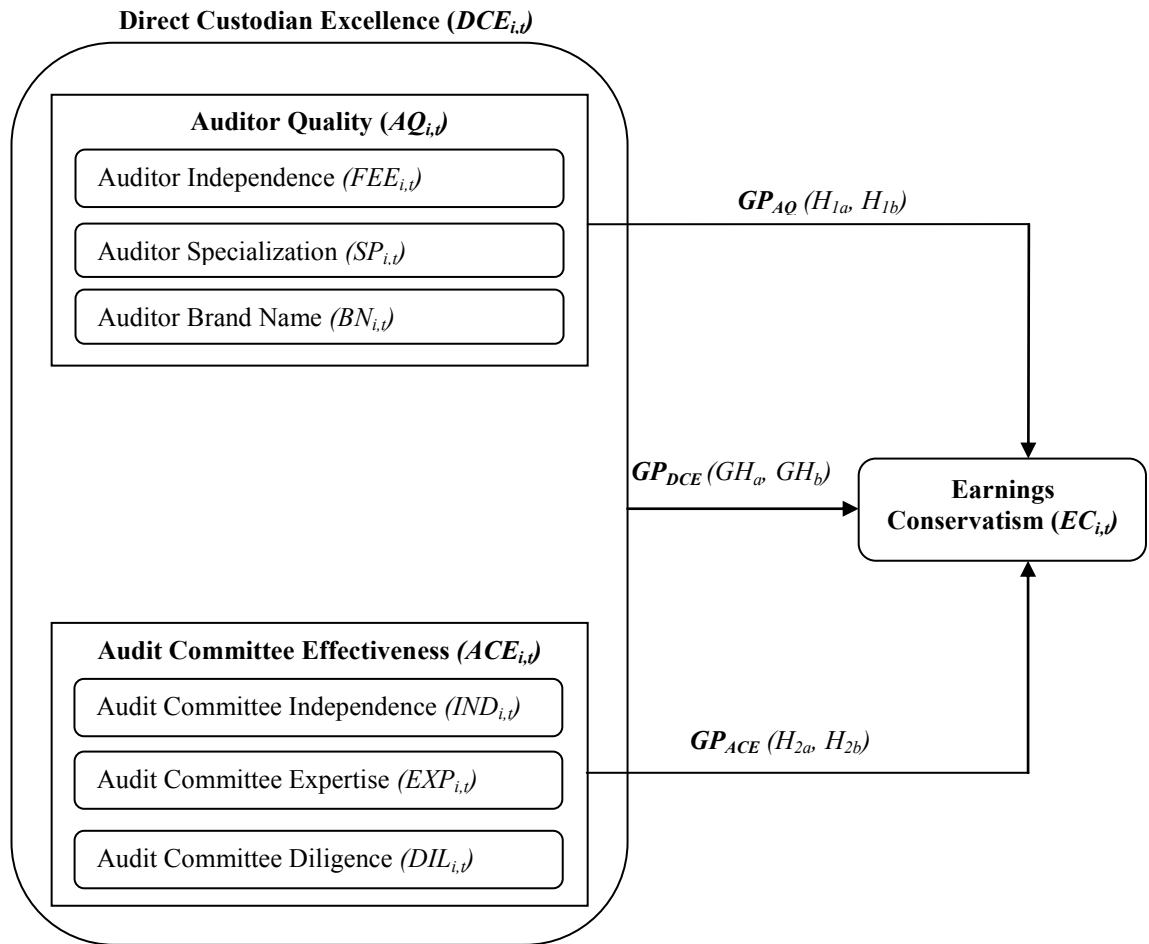
3.7   Conclusion

This chapter documented four potential theories concerning corporate governance to explain various corporate governance phenomena. Agency theory is found the most applicable to be used as the underlying theoretical framework in this study. To better understand the influence of corporate governance mechanisms on earnings conservatism in Malaysia, discussions on corporate governance environment in Malaysia including (i) equity market regulatory environment, (ii) financial accounting system and (iii) auditing environment were documented. A set of testable hypotheses[23] were formulated based on

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[23] The primary focus of this study is to test the association between direct custodian excellence and earnings conservatism, with a secondary emphasis on the influence of auditor quality and audit committee effectiveness that underpin the main factor of interest. Accordingly, the main discussion in formulating hypotheses related to these factors concentrate on this end result. However, in conducting such hypotheses development, it is necessary (given the prior literature focus on components of auditor quality, and audit committee effectiveness) to make note of such individual components, and to include secondary associated hypotheses that are subsequently tested. This is needed to highlight the depth of testing and focus of this thesis, and to provide comparative analysis with prior work. Specific formulation of individual hypotheses associated with respective components is not developed to avoid undue increase in length of the thesis. However, hypotheses associated with individual components

detailed discussions on corporate governance mechanism (i.e. direct custodian excellence, auditor quality and audit committee effectiveness) to examine the influence of the variables on earnings conservatism. Finally, the conceptual schema was developed with a diagrammatical overview presented.

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making up auditor quality ($AQ_{i,t}$) and audit committee effectiveness ($ACE_{i,t}$) are shown in the conceptual schema to clearly illustrate to readers what constitutes $AQ_{i,t}$ and $ACE_{i,t}$.

CHAPTER 4   RESEARCH METHOD

4.1   Introduction

The initial focus of Chapter 3was defining the main theories thought to underpin corporate governance. Based on a review of these main theoretical perspectives of corporate governance, the theory deemed most appropriate for this study was identified. In order to give this study perspective the corporate governance environment in Malaysia was outlined. Such discussion also described major changes in corporate governance regulations in Malaysia during the past several decades. The focus of the discussion then concentrated on developing the testable hypotheses of this thesis. In support of the development of these hypotheses a detailed review of literature relating to auditor quality and audit committee effectiveness—the prime components of direct custodian excellence—was provided. Finally, a conceptual schema was provided outlining the key relationships of this study.

This chapter provides details of the research method used to test the hypotheses developed in Chapter 3. The chapter begins with a justification of the sample selected, source documentation chosen and time period analyzed. The subsequent section explains how earnings conservatism is measured using the Basu (1997) models of timeliness and persistence. The measure to operationalize direct custodian excellence is then developed via definition of proxies for key auditor quality and audit committee effectiveness components. Finally, the statistical tests and models utilized to test the hypotheses are outlined, before a summary is provided at the end of the chapter.

4.2   Sample, documentation and time period

This section outlines the methodology applied in selecting the sample, source documentation and time period.

4.2.1   Sample selection

The initial sample[24] comprises all publicly listed firms listed on the Bursa Malaysia as at January 1, 2002. Bursa Malaysia listed firms are chosen because information is publicly available. Moreover, Bursa Malaysia firms were selected since listed firms provide readily available information in an appropriate useable form. Consistent with prior research, financial and banking and insurance and utilities firms are excluded from the sample as such firms are regulated by specific regulatory boards (Ball et al. 2000; Givoly and Hayn 2000; Goodwin 2003; Ruddock et al. 2006; Givoly, Hayn and Natarajan 2007). Firms that were not continuously listed on the Bursa Malaysia during the observation period (e.g. IPO firms and firms de-listed for a period of time and re-listed) will also be excluded in order to avoid

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[24] Please refer to Table 5.1 for details more information on sample selection process.

undue influences of an unexpected rise in share price. Moreover, firms involved in joint mergers and acquisitions will also be excluded on the basis that such activities may impact the extent of financial reporting undertaken (Salter 1998). Consistent with Clifford and Evans (1997), unit trusts and foreign firms domiciled outside Malaysia will also be excluded because the financial statements of unit trusts and foreign firms domiciled outside Malaysia are not always prepared in accordance with the normal disclosure requirements for other firms listed on the Bursa Malaysia. Firms suspected of having missing data during the observation period (e.g. firms that were suspended at some point during the observation period) are also excluded (Klein 2002b).

From the resulting sample pool, 100 firms are randomly selected. Data will be collected for each firm selected from each firm-year covered in this study. The resulting sample will provide approximately 600 firm-year observations for use as data points in the subsequent testing.

4.2.2 *Source documentation*

The data for this study are obtained from a number of sources. The major item of focus earnings conservatism that will be measured based on the timeliness and persistence models developed by Basu (1997).[25] Data required to complete the Basu (1997) timeliness and persistence base models will be obtained from DataStream and where necessary hand collected from annual reports.

Direct custodian excellence is defined as the product of auditor quality and audit committee effectiveness. In respect to auditor quality, for purposes of this study this concept is measured as a function of auditor independence, auditor specialization and brand name reputation. In the case of audit committee effectiveness, this is measured as a function of audit committee independence, financial expertise of the audit committee, and the sub-committee's diligence.

With respect to components of auditor quality, information on non-audit fees and audit fees are collected to develop an appropriate proxy for auditor independence. This is hand collected from annual reports of firms included in the final useable sample for each year covered by the observation window. In respect to auditor specialization, audit fee data is again used along with details of industry classification for each selected firm. Whilst audit fee data is hand collected from annual reports, information to determine the industry type of each selected firm in the final useable sample is gathered from Bursa Malaysia's website. Finally, for brand name reputation information is hand collected from annual reports.

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[25] See Section 4.3 for the detailed discussion of Basu (1997) models. The Ball and Shivakumar (2005) model is also used for purposes of sensitivity testing. Hence, data was also collected to meet the requirements of that model.

As for audit committee effectiveness there is no established database of corporate governance information covering Malaysian publicly listed firms. Data used in the measurement of audit committee effectiveness and the three sub-components (i.e.audit committee independence, financial expertise of the audit committee, and the sub-committee's diligence) is hand collected from annual reports.

Whilst the main focus of this study is to examine the relationship between the timeliness and persistence of earnings conservatism and (a) direct custodian excellence, (b) auditor quality, and (c) audit committee effectiveness, various robustness and various sensitivity tests will also be conducted.[26] Data that was referred to earlier is required to conduct the sensitivity analysis. Such data (e.g. total assets, leverage) is obtained from annual reports or DataStream.

4.2.3 Time period selection

Analysis involves a longitudinal examination covering a six calendar-year period (January 1, 2002 to December 31, 2007). The six-year period is selected to minimize any significant extraneous influences on findings as a result of fallout from the ˍDot.Com Bubble' or the introduction of new International Financial Reporting Standards (*IFRS*). Nonetheless, the period is also selected in order to determine the effectiveness of key corporate governance reforms introduced in 2001 and 2002. Further, for pragmatic reasons (i.e. unavailability of data) the observation prior to 2002 is not optimal. For example, information on key data such as non-audit fees, audit committee composition and frequency of audit committee meetings were not required to be published prior to 2002. Due to large pockets of missing data, analysis before 2002 is not realistic. The timeframe is also selected to collect the timeliest information available. When the study commenced, 2007 provided the timeliest information available. With a need to establish a relevant cut-off to give the study a specific timeframe, 2007 was pragmatically defined as the end of the observation window.

4.3   Measurement of earnings conservatism

Prior research suggests that earnings conservatism can be conceptualized in different ways (Basu 1997; Ball and Shivakumar 2005; Ruddock et al. 2006; Balkrishna et al. 2007; Lara et al. 2009a; Lara et al. 2009b). An approach to measuring earnings conservatism by Basu (1997) has received extensive attention and use in the extant literature. Basu's approach of measuring earnings conservatism is chosen to be used in this study because the method is commonly used in prior literature. Thus, it provides benchmark and comparability results with other studies that used Basu's method of measuring earnings conservatism. Basu (1997) developed models of earnings conservatism based on the: (a) asymmetrical timing of

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[26] See Section 4.6 for the detailed discussion of sensitivity tests.

positive and negative news (i.e. timeliness); and (b) time-series persistence of earnings (i.e. persistence).[27] The following subsections describe the two main measures used to capture earnings conservatism.

4.3.1 Basu (1997) model of timeliness

The Basu (1997) timeliness approach of earnings conservatism is grounded in the assumption that the timeliness of earnings is asymmetric (Basu 1997; Ruddock et al. 2006; Balkrishna et al. 2007). According to Basu (1997), earnings are reverse-regressed on contemporaneous stock returns. The timeliness of earnings is inferred from the responsiveness of accounting income to changes in market value. Negative market adjusted stock returns are used as a proxy for bad news, whilst positive returns as a proxy for good news. In simple terms, this approach assesses whether earnings incorporates bad news (negative returns) more quickly than good news (positive returns). Timeliness is measured by the slope coefficient from a regression of annual earnings on contemporaneous stock returns (Basu 1997).

The base model for the Basu (1997) timeliness approach takes the following form:

$$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \sum \gamma_t + \varepsilon_{i,t} \qquad [1]$$

Where:

$OPI_{i,t}$ = operating income firm i scaled by market value of equity of firm i at the beginning of the fiscal year t;

$RET_{i,t}$ = buy-and-hold return[28] over fiscal year t of firm i (i.e. $(P_t - P_{t-1})/P_{t-1}$ where P_t is the price of shares for firm i three (3) months after the end of the fiscal year t and P_{t-1} is the price of shares for firm i nine (9) months prior to the fiscal year t)[29];

$NEGRET_{i,t}$ = indicator variable with firm i scored one (1) if RET_t is negative, otherwise firm i scored zero (0);

$\sum \gamma_t$ = represents fiscal year indicator variables;

α_k, β_k = coefficients; and

$\varepsilon_{i,t}$ = error term.

Equation 1 posits that using accounting earnings (a lagging variable) as the dependent variable and stock returns (a leading variable) as the independent variable better

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[27] Whilst the main results are based on the Basu (1997) timeliness and persistence models of earnings conservatism, a third measure of earnings conservatism is also used in the sensitivity analysis. The third approach is based on the difference in current period accruals and cash flows measured using the approach adopted by Ball and Shivakumar (2005).

[28] There is some debate in the literature on whether returns such be based on ‗raw' or ‗market-adjusted' computations. There is a lack of consensus theoretically or empirically on which approach is best. Basu (1997) originally used ‗raw' returns. Consequently, this study uses ‗raw' returns in the presentation of the main findings. However, in the sensitivity analysis tests are performed again using ‗market-adjusted' returns.

[29] These returns are calculated from nine (9) months before the year-end t to three (3) months after the year-end t to exclude the effect of market response to the earnings release at the previous year-end. This approach has been used by many prior studies including Ball et al. (2000), Giner and Rees (2001), Joos (1997) and Kothari and Zimmerman (1995). Ball et al. (2000) claim that the rationale is to eliminate observations potentially with errors or with extreme values due to scaling. However, it is worth noting that potentially informative observations are removed and there is a danger of an incorrect inference.

estimates the slope coefficient.[30] An indicator variable, $NEGRET_{i,t}$ is included in the regression to distinguish bad news from good news.

The slope coefficient β_0 and β_1 in *Equation 1* are used to measure the responsiveness of reported earnings to the news captured in prior returns. These slope coefficients are termed return response coefficients. Empirical comparison of conservatism is based on the difference between the slope values for good news, β_0 and for bad news, $(\beta_{0+}\beta_1)$.[31] The bad news slope coefficient is steeper than the good news slope when conservatism exists. Under conservative accounting, β_0 and β_1 are expected to be positive and the ratio, $(\beta_{0+}\beta_1)/\beta_0$ is expected to be higher than one because the accounting variables are considered to be more sensitive to bad news than to good news.

4.3.2 *Basu (1997) model of persistence*

The Basu (1997) timeliness model of earnings conservatism (i.e. *Equation 1*) presumes losses are recognized more quickly than gains and share prices reflect bad news in contemporaneous market losses earlier than good news via market gains. As the impact of news (whether good or bad) may not be captured in contemporaneous share prices alone, the second model defined by Basu (1997) as seen in *Equation 2* presumes bad news reverses whilst good news persists. The deferred recognition of relatively good news results in positive changes in income being more likely to persist than negative earnings changes.

Equation 2 details the basic model underlying the persistence measure of earnings conservatism:

$$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \beta_0\Delta OPI_{i,t-1} + \beta1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \sum\gamma_t + \varepsilon_{i,t} \qquad [2]$$

Where:
 $\Delta OPI_{i,t}$ = change in operating income of firm *i* in fiscal year *t* scaled by the market value of equity of firm *i* at the beginning of the fiscal year *t* (i.e. $MVE_{i,t-1}$);
 $\Delta OPI_{i,t-1}$ = change in operating income of firm *i* in fiscal year *t-1* scaled by the market value of equity of firm *i* at the beginning of the fiscal year *t-1* (i.e. $MVE_{i,t-1}$);
 $NEG\Delta OPI_{i,t-1}$ = indicator variable with firm *i* scored one (1) if $\Delta OP_{i,t-1}$ is negative, otherwise firm *i* scored zero;
 $\sum\gamma_t$ = represent fiscal year indicator variables;
 α_k, β_k = coefficients; and
 $\varepsilon_{i,t}$ = error term.

In *Equation 2*, the coefficient β_1 indicates the incremental tendency to reverse for negative shocks over positive shocks in the subsequent period. The negative slope coefficient means reversal of the variable, and the positive means persistence. Under conservatism

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[30] The model's R², which generally assesses overall income timeliness of gains and losses combined, is not a valid indicator of conservatism because it does not explain the relative strength of the relation between bad and good news (Kung 2005).
[31] Good news sample ($RET_{i,t} < 0$) is $OPI_{i,t} = \alpha_0 + \beta_0 RET_{i,t} + \varepsilon_{i,t}$ and the bad news sample ($RET_{i,t} > 0$) is $OPI_{i,t} = (\alpha_0 + \beta_0) + (\beta_0 + \beta_1) RET_{i,t} + \varepsilon_{i,t}$. Hence, β_0 and $(\beta_0 + \beta_1)$ capture the incorporation in accounting earnings of good news and bad news respectively.

reporting, it is expected that the negative coefficient, $(\beta_0 + \beta_1)$ on prior negative shocks are smaller than the coefficient β_0 on prior positive shocks.

4.4   Measurement of independent variables

As noted earlier, the term direct custodian excellence has not been previously utilized in the extant literature. Rather, this phrase was created for this thesis to provide a common umbrella to encompass the joint influence of the two most prominent humanly physical corporate governance mechanisms that have come to directly influence a firm's financial reporting system in the past decades, that is, the external auditor and audit committee. It is acknowledged that prior research has examined the influence of the external auditor and audit committee on key financial accounting issues. Such research, however, overwhelmingly looked at the influence of each direct corporate governance mechanism in isolation rather than jointly. Given the efforts of this study to consider joint influences on earnings conservatism, the phrase direct custodians and direct custodian excellence are utilized.

Discussion in prior chapters of this thesis suggest—based on an extensive literature review—that the influence of the external auditor on the financial accounting system will be determined substantially by the direct custodian's quality. Similarly, effectiveness will be a pivotal determining factor of the influence of the audit committee in addressing key financial accounting issues such as earnings quality, earnings management and adoption of conservative accounting practices. To this end, direct custodian excellence can be measured as a function of auditor quality and audit committee effectiveness; that is, direct custodian excellence = (auditor quality, audit committee effectiveness). For the purposes of this study direct custodian excellence is denoted by $DCE_{i,t}$ which is the composite score attributed to firm i at the end of time period t based on values assigned to underlying auditor quality and audit committee effectiveness components. The auditor quality score components of the $DCE_{i,t}$ is denoted by the variable $AQ_{i,t}$ whilst audit committee effectiveness is denoted by $ACE_{i,t}$. The noted relationship can be represented by the following mathematical relationship:

$$DCE_{i,t} = \sum (AQ_{i,t} + ACE_{i,t}) \tag{3}$$

Where:

$DCE_{i,t}$ = sum of component scores underpinning auditor quality and audit committee effectiveness for firm i at the end of time period t;

$AQ_{i,t}$ = sum of the individual component scores underpinning auditor quality, that is auditor independence ($FEE_{i,t}$); auditor specialist ($SP_{i,t}$) and brand name ($BN_{i,t}$) for firm i at the end of time period t; and

$ACE_{i,t}$ = sum of the individual component scores underpinning audit committee independence, that is audit committee independence ($IND_{i,t}$); audit committee financial expertise ($EXP_{i,t}$) and diligence of the audit committee ($DIL_{i,t}$) for firm i at the end of time period t.

Discussion in prior chapters suggests – based on an extensive literature review–that the influence of the external auditor on the financial accounting system will be determined substantially by the direct custodian's quality. Similarly, effectiveness is viewed as underpinning any influence the audit committee may have in addressing financial accounting issues. In consideration of these points, the discussion in the following sub-sections outlines the approach adopted to measure auditor quality and audit committee effectiveness in arriving at a composite score for direct custodian excellence.

4.4.1 Measurement of auditor quality

Frequently researchers have focused on a single component of auditor quality rather than a range of possible determinants. As this study aims to provide a broad holistic picture of the auditor quality construct, a composite score based on the auditor's independence, specialization and brand name is developed[32]. Specifically, for firm i in time period t, a composite score for auditor quality (i.e. $AQ_{i,t}$) is based on a score of one being awarded for each of the following individual characteristics being met:

- The ratio of non-audit fees to total fees paid to the external auditor by firm i during time period t is less than 1:5 (or 20%).
- The auditor of firm i during time period t is deemed to be an _industry specialist' in the industry sector to which firm i effectively operators as defined by Bursa Malaysia.
- The auditor of firm i in time period t is one of the four major _Big 4' leading international accounting firms (i.e. PriceWaterhouseCoopers, Deloitte and Touché, KPMG and Ernst and Young).

The range of scores for $AQ_{i,t}$, therefore, is from zero to three. $AQ_{i,t}$ can be decomposed into three measures representing each individual component: (1) auditor independence (denoted as $FEE_{i,t}$); (2) auditor specialist (denoted as $SP_{i,t}$); and (3) auditor brand name(denoted as $BN_{i,t}$).Each individual auditor quality component metric is scored as per the respective criteria outlined in scoring $AQ_{i,t}$. The calculation underpinning scores for $AQ_{i,t}$ can be represented mathematically as:

$$AQ_{i,t} = \sum (FEE_{i,t} + SP_{i,t} + BN_{i,t}) \qquad [4]$$
Where:
  $AQ_{i,t}$ = sum of the individual component scores underpinning auditor quality, that is auditor independence ($FEE_{i,t}$); auditor specialization ($SP_{i,t}$) and auditor brand name ($BN_{i,t}$) for firm i at the end of time period t;
  $FEE_{i,t}$ = a dichotomous indicator variable whereby firm i is given a score of one (1) if during time period t the ratio of non-audit fees to total fees paid to the external auditor is less than 1:5 (or 20%); otherwise, firm i is scored zero (0);

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[32] There are some arguments that brand name and auditor specialization should not be included in the composite measure of auditor quality as both variables would be highly correlated. Thus, a sensitivity tests is performed considering of inclusion and exclusion for these variables. Please refer to Section 7.4 for details.

$SP_{i,t}$ = a dichotomous indicator variable whereby firm i is given a score of one (1) if during time period t the engaged auditor is recognized as an industry specialist for auditing purposes in the industry sector to which firm i is categorized by Bursa Malaysia; otherwise, firm i is scored zero (0); and

$BN_{i,t}$ = a dichotomous indicator variable whereby firm i is given a score of one (1) if during the period t the auditor engaged is one of *Big 4* major leading international accounting firms (i.e. PriceWaterhouseCoopers, Deloitte and Touché, KPMG and Ernst and Young).

Justification for the proxy measures representing the three components of auditor quality is outlined in the following subsections.

4.4.1.1 Measurement of auditor independence

Prior research (e.g. Wines 1994; Casterella, Knechel and Walker 2002; Frankel et al. 2002; Johnson, Khurana and Reynolds 2002; Myers, Myers and Omer 2003; Choi and Doogar 2005; Ghosh and Moon 2005; Basioudis, Papakonstantinou and Geiger 2008) has proposed alternative frameworks to define auditor independence and methods to measure this concept. An overwhelming focus of researchers, corporate governance reformists, regulators and the popular press during the past decade when discussing auditor independence has been the level of non-audit fees paid to the incumbent external auditor relative to total fees. Whilst not precisely a fresh notion (see Simunic 1984) as early evidence of concerns about influence of non-audit fees on auditor independence), a general presumption has developed since the Asian financial crisis and corporate scandals (e.g. Enron, WorldCom, Parmalat) at the turn of the millennium that perceptions of auditor independence will become increasingly negative as the proportion of non-audit fees paid to the incumbent external auditor compared to total fees rises (e.g. Lim and Tan 2008; Lim and Tan 2010). There is a lack of a clear conscientious on a precise non-audit fee/total fee ratio level that would constitute impairment of auditor independence. Whilst a cut-off remains primarily arbitrary, there is support in the literature and by law (e.g. MIA By-Law 2002) in applying a 1:5 (i.e. 20%) ratio limit. That is, if the ratio of non-audit fees to total fees is below 20% then independence is not impaired and auditor quality is higher. Thus, for the dichotomous variable $FEE_{i,t}$ a score of one is awarded if the ratio of non-audit fees to total fees paid firm i to the external auditor during time period t is below 20% and zero otherwise.

4.4.1.2 Measurement of auditor specialist

Different measures have been employed to capture audit specialization across different time frames and countries. In general terms, two methods have emerged to measure for auditor industry specialization: (a) auditor industry market share; and (b) auditor industry portfolio share. The industry market share approach regards an accounting firm as an audit expert within an industry when the firm —has differentiated itself from its competitors in terms of market share within a particular industry" (Neal and Riley 2004 p.170). In contrast,

they (Neal and Riley 2004 p.170) posit that the industry portfolio share approach regards ―‖the relative distribution of audit services and related fees across the various industries for each audit firm considered individually".

Whilst both methods offer respective merits, this study uses the industry market share approach. Craswell et al. (1995 p.300) justified adoption of this approach maintaining that ―demand for industry specialization drives audit firm investments in specialization and leads to industry-based clienteles". Such arguments provide the underlying rationale for using market share data to infer industry specialization. Thus, the measure for determining audit specialization is expressed below in *Equation 5* as:

$$IMS_{j,t} = \frac{\sum\limits_{j=1}^{J_{ik}} AFees_{ijk}}{\sum\limits_{i=1}^{I_k}\sum\limits_{j=1}^{J_{ik}} AFees_{ijk}}$$

[5]

The variable $IMS_{i,t}$ is the industry market share of audit firm i for time period t. Meanwhile, audit fees are defined by the variable *AFees* and the numerator in *Equation 3* is the sum of audit fees paid to audit firm i by all J_{ik} clients of audit firm i in industry k. Finally, the denominator is the sum of all audit fees paid to I_k audit firms with J_{ik} clients in industry k.

Prior research (e.g. Craswell and Taylor 1991; Mayhew and Wilkins 2003; Dunn and Mayhew 2004; Neal and Riley 2004) has used a range of industry market share cut-off points when determining if an audit firm is a specialist in a given industry. Predominantly the cut-off range is from 10% - 20%. For the purposes of the main analysis presented in this study a more restrictive cut-off is applied in determining an industry specialist. Specifically, if the $IMS_{i,t}$ score of audit firm i in time period t is greater than 20% for a given industry, then that audit firm i is classified as an industry specialist for that sector.

In scoring the dichotomous variable $SP_{i,t}$, firm i from industry sector k is scored one if the audit firm j engaged to conduct the external audit in time period t is defined as an industry specialist for industry sector k as per the relevant $IMS_{j,t}$; otherwise firm i is scored zero.

4.4.1.3 Measurement of auditor brand name

Within a given economy (whether at a local, national, regional or worldwide level) highly reputable and respected audit firms undoubtedly exist. Nonetheless, to appease the perceptions of capital market participants across a broad scale, and to have the ability to enter a market with a preceding reputation, is likely to be associated with a small band of audit firms. Despite being associated with various notable scandals and controversies, the

Big 4 international audit firms (i.e. PriceWaterhouseCoopers, Deloitte and Touché, KPMG and Ernst and Young) are routinely acknowledged by regulators, researchers, investors and corporate management as the brand leaders within the audit markets across the world. In recognition of such brand leadership there is a general underlying perception that *Big 4* audit firms are of a higher quality than *Non-Big 4* audit firms. This is because *Big 4* audit firms have greater access to resources and knowledge than *Non-Big 4* audit firms. Further, with more at stake in terms of reputation due to such brand recognition a *Big 4* audit firm is likely to instill higher quality standards to preserve reputational capital than a *Non-Big 4* audit firm. For the purposes of this study, therefore, auditor brand name (denoted by $BN_{i,t}$) is operationalized by awarding a score of one if the external auditor engaged by firm i in time period t is a *Big 4* audit firm; otherwise a score of zero is awarded.

4.4.2   Measurement of audit committee effectiveness

There is currently a lack of consensus on a precise measure for audit committee effectiveness. Following prior work (Beasley and Petroni 2001; Klein 2002a, 2002b; Van der Zahn and Tower 2004), this study develops a composite score for audit committee effectiveness based on the sub-committee's independence, expertise and diligence. Specifically, for firm i in time period t, a composite score for audit committee effectiveness (i.e. $ACE_{i,t}$) is based on a score of one being awarded for each of the following individual characteristics being met:

- Audit committee of firm i in time period t consists of a majority of independent directors.
- At least one independent audit committee member of firm i in time period t is a qualified person with financial expertise identified as possessing necessary educational qualifications (i.e. degree in accounting), professional credentials (i.e. member of a professional accounting body) or work experience (i.e. experience as a public accountant, auditor, principal or chief financial officer, controller, principal or chief accounting officer, CEO or president of a for-profit firm).
- Audit committee of firm i in time period t meets five or more times.

The range of scores for $ACE_{i,t}$, therefore, is from zero to three. $ACE_{i,t}$ can be decomposed into three measures representing each individual component: (1) audit committee independence (denoted as $IND_{i,t}$); (2) audit committee expertise (denoted as $EXP_{i,t}$); and (3) audit committee diligence (denoted as $DIL_{i,t}$). Each individual audit committee effectiveness component metric is scored as per the respective criteria outlined in scoring $ACE_{i,t}$. The calculation underpinning scores for $ACE_{i,t}$ can be represented mathematically as:

$$ACE_{i,t} = \sum (IND_{i,t} + EXP_{i,t} + DIL_{i,t}) \qquad [6]$$

Where:

$ACE_{i,t}$ = sum of the individual component scores underpinning audit committee effectiveness, that is audit committee independence ($IND_{i,t}$); audit committee financial expertise ($EXP_{i,t}$) and diligence of the audit committee ($DIL_{i,t}$) for firm i at the end of time period t;

$IND_{i,t}$ =a dichotomous indicator variable whereby firm i is given a score of one (1) if at the end of time period t a majority of the members of the audit committee are classified as independent directors; otherwise, firm i is scored zero (0);

$EXP_{i,t}$ =a dichotomous indicator variable whereby firm i is given a score of one (1) if at the end of time period t at least one member of the audit committee is deemed to have suitable financial expertise; otherwise, firm i is scored zero (0); and

$DIL_{i,t}$ =a dichotomous indicator variable whereby firm i is given a score of one (1) if during the period t the audit committee met five (5) or more times; otherwise, firm i is scored zero (0).

Justification for the proxy measures representing the three components of audit committee effectiveness is outlined in the following subsections.

4.4.2.1 Measurement of audit committee independence

$IND_{i,t}$ is measured based on the definition of an independent director proposed under Malaysian corporate governance regulations that conform closely with corporate governance regulations in major leading economies. However, following past literature (McMullen and Raghunandan 1996; Abbott and Parker 2000; Carcello and Neal 2000, 2003; Abbott et al. 2004; Bédard et al. 2004), the final decision of the researcher on whether an audit committee member is independent is determined based on a review of all information disclosed in the firm's annual reports.

Past literature outlines various ways of measuring audit committee member independence (Klein 2002a, 2002b; Abbott et al. 2003a; Abbott et al. 2003b; Xie et al. 2003; Vafeas 2005; Carcello et al. 2006). Some studies (Abbott et al. 2003a; Abbott et al. 2003b; Carcello et al. 2006) use a dichotomous variable giving a score of one when the audit committee entirely comprised of independent directors or zero otherwise. Alternatively, other studies (Klein 2002a, 2002b; Xie et al. 2003; Vafeas 2005) measure audit committee independence as the percentage of independent members in the audit committee. Consistent with Abbott et al. (2003a; 2003b) and Carcello et al. (2006), main findings reported in this study are based on use of a dichotomous variable; that is, a score of one is awarded when the audit committee of firm i at end of time period t is comprised of a majority of independent directors, and zero otherwise.

4.4.2.2 Measurement of audit committee financial expertise

Audit committee financial expertise has been recognized by various studies as the key component of audit committee effectiveness. Scholars, regulators and researchers (Beasley and Salterio 2001; Bédard et al. 2004; Van der Zahn and Tower 2004; DeFond et al. 2005; Krishnan and Visvanathan 2008) have classified expertise into two different

categories, that is, financial expertise and non-financial expertise. For this particular study, emphasis is placed on financial expertise given the predominant use of financial expertise in the past literature (McDaniel et al. 2002; DeFond et al. 2005; Dhaliwal et al. 2006; Krishnan and Visvanathan 2008) and lack of clarity and available information to determine an individual's non-financial expertise.

Consistent with prior literature (Xie et al. 2003; Bédard et al. 2004; Van der Zahn and Tower 2004; DeFond et al. 2005; Dhaliwal et al. 2006; Krishnan and Visvanathan 2008), this study measures $EXP_{i,t}$ such that an audit committee member is defined as having financial expertise if has existing or prior experience as a public accountant, auditor, principal or chief financial officer, controller, principal or chief accounting officer, and possesses recognized accounting qualifications and/or professional credentials. Thus, the variable $EXP_{i,t}$ is coded one if at least one member of the audit committee of firm i at the end of time period t is defined as being a financial expert. Otherwise a score of zero is awarded.

4.4.2.3 Measurement of audit committee diligence

Past literature (Menon and Williams 1994; Beasley et al. 2000; Xie et al. 2003; Abbott et al. 2004; Bédard et al. 2004; Farber 2005; Vafeas 2005) has often used the number of audit committee meetings as a proxy for audit committee diligence. It is suggested the number of audit committee meetings held is a representation of the degree of effort the audit committee puts forth in monitoring the financial reporting process. Although regulators in Malaysia (and generally worldwide) do not prescribe how often an audit committee should meet in a financial period, past literature (Menon and Williams 1994; McMullen and Raghunandan 1996; Abbott et al. 2003b; Abbott et al. 2004; Steward and Munro 2007) has used the audit committee meeting at least four or five times annually as a standard measure of audit committee diligence. For the purposes of this study, therefore, audit committee diligence (as denoted by $DIL_{i,t}$) is operationalized by awarding a score of one if the audit committee of firm i in time period t meets at least five times or more financial year; otherwise a score of zero is awarded.

4.5   Statistical tests and models

The main focus of this study is to examine whether direct custodian excellence influences the level of a firm's earnings conservatism with regards to timeliness and persistence.

To formally test whether Malaysian publicly listed firms subject to higher standards of direct custodian excellence are more likely to have higher levels of earnings conservatism, *Equation 1* and *Equation 2* are extended. This extension includes the incorporation of

intercept and slope coefficients for the interactive effects of the any influence of direct custodian excellence. The models are defined in *Equation 7* and *Equation 8*:

$$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 DCE_{i,t} + \alpha_3 NEGRET_{i,t}*DCE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t}$$
$$+ \beta_2 RET_{i,t}*DCE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*DCE_{i,t} + \sum\gamma_t + \varepsilon_{i,t} \qquad [7]$$

$$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 DCE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*DCE_{i,t} + \beta_0\Delta OPI_{i,t-1} +$$
$$\beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*DCE_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$$
$$+ \sum\gamma_t + \varepsilon_{i,t} \qquad [8]$$

Where:

$OPI_{i,t}$ = operating income firm i scaled by market value of equity of firm i at the beginning of the fiscal year t;

$RET_{i,t}$ = buy-and-hold return over fiscal year t of firm i (i.e. $(P_t – P_{t-1})/P_{t-1}$ where P_t is the price of shares for firm i three (3) months after the end of the fiscal year t and P_{t-1} is the price of shares for firm i nine (9) months prior to the fiscal year t)[33];

$NEGRET_{i,t}$= indicator variable with firm i scored one (1) if RET_t is negative, otherwise firm i scored zero (0);

$\Delta OPI_{i,t}$ = change in operating income of firm i in fiscal year t scaled by the market value of equity of firm i at the beginning of the fiscal year t (i.e. $MVE_{i,t-1}$);

$\Delta OPI_{i,t-1}$ = change in operating income of firm i in fiscal year $t-1$ scaled by the market value of equity of firm i at the beginning of the fiscal year $t-1$ (i.e. $MVE_{i,t-1}$);

$NEG\Delta OPI_{i,t-1}$= indicator variable with firm i scored one (1) if $\Delta OP_{i,t-1}$ is negative, otherwise firm i scored zero;

$DCE_{i,t}$ = sum of the composite scores for auditor quality (i.e. $AQ_{i,t}$) and audit committee effectiveness (i.e. $ACE_{i,t}$) for firm i at the end of time period t. Hence, $DCE_{i,t} = \sum(AQ_{i,t} + ACE_{i,t})$;

$\sum\gamma_t$ = represents fiscal year indicator variables;

α_k, β_k = coefficients; and

$\varepsilon_{i,t}$ = error term.

To formally test if a Malaysian publicly listed firm exposed to greater scrutiny of a higher quality auditor exhibits higher levels of earnings conservatism than a counterpart engaging a lower quality auditor, the composite proxy for auditor quality (i.e. $AQ_{i,t}$) is substituted for $DCE_{i,t}$ in *Equation 9* and *Equation 10*:

$$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 AQ_{i,t} + \alpha_3 NEGRET_{i,t}*AQ_{i,t} + \beta_0 RET_{i,t} +$$
$$\beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*AQ_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*AQ_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$$
$$[9]$$

$$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 AQ_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*AQ_{i,t} + \beta_0\Delta OPI_{i,t-1} +$$
$$\beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*AQ_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$$
$$[10]$$

Where:

$OPI_{i,t}$ = operating income firm i scaled by market value of equity of firm i at the beginning of the fiscal year t;

$RET_{i,t}$ = buy-and-hold return over fiscal year t of firm i (i.e. $(P_t – P_{t-1})/P_{t-1}$ where P_t is the price of shares for firm i three (3) months after the end of the fiscal year t and P_{t-1} is the price of shares for firm i nine (9) months prior to the fiscal year t)[34];

$NEGRET_{i,t}$= indicator variable with firm i scored one (1) if RET_t is negative, otherwise firm i scored zero (0);

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[33]See footnote 29 for detailed explanations.
[34]See footnote 29 for detailed explanations.

$\Delta OPI_{i,t}$ = change in operating income of firm i in fiscal year t scaled by the market value of equity of firm i at the beginning of the fiscal year t (i.e. $MVE_{i,t-1}$);

$\Delta OPI_{i,t-1}$ = change in operating income of firm i in fiscal year $t-1$ scaled by the market value of equity of firm i at the beginning of the fiscal year $t-1$ (i.e. $MVE_{i,t-1}$);

$NEG\Delta OPI_{i,t-1}$= indicator variable with firm i scored one (1) if $\Delta OP_{i,t-1}$ is negative, otherwise firm i scored zero;

$AQ_{i,t}$ = sum of the individual component scores underpinning auditor quality, that is auditor independence ($FEE_{i,t}$); auditor specialization ($SP_{i,t}$) and auditor brand name ($BN_{i,t}$) for firm i at the end of time period t. Hence, $AQ_{i,t} = \sum(FEE_{i,t} + SP_{i,t} + BN_{i,t})$;

$\sum\gamma_t$ = represents fiscal year indicator variables;

α_k, β_k = coefficients; and

$\varepsilon_{i,t}$ = error term.

To formally test if Malaysian publicly listed firms with more effective audit committees are more likely to have higher level of earnings conservatism than Malaysian publicly listed firms with less effective audit committee, the proxy for audit committee effective (i.e. $ACE_{i,t}$) is substituted for $DCE_{i,t}$ in *Equation 11* and *Equation 12*:

$$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 ACE_{i,t} + \alpha_3 NEGRET_{i,t}*ACE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*ACE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t} \quad [11]$$

$$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 ACE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_0 \Delta OPI_{i,t-1} + \beta_1 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2 \Delta OPI_{i,t-1}*ACE_{i,t} + \beta_3 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t} \quad [12]$$

Where:

$OPI_{i,t}$ = operating income firm i scaled by market value of equity of firm i at the beginning of the fiscal year t;

$RET_{i,t}$ = buy-and-hold return over fiscal year t of firm i (i.e. $(P_t - P_{t-1})/P_{t-1}$ where P_t is the price of shares for firm i three (3) months after the end of the fiscal year t and P_{t-1} is the price of shares for firm i nine (9) months prior to the fiscal year t)[35];

$NEGRET_{i,t}$= indicator variable with firm i scored one (1) if RET_t is negative, otherwise firm i scored zero (0);

$\Delta OPI_{i,t}$ = change in operating income of firm i in fiscal year t scaled by the market value of equity of firm i at the beginning of the fiscal year t (i.e. $MVE_{i,t-1}$);

$\Delta OPI_{i,t-1}$ = change in operating income of firm i in fiscal year $t-1$ scaled by the market value of equity of firm i at the beginning of the fiscal year $t-1$ (i.e. $MVE_{i,t-1}$);

$NEG\Delta OPI_{i,t-1}$= indicator variable with firm i scored one (1) if $\Delta OP_{i,t-1}$ is negative, otherwise firm i scored zero;

$ACE_{i,t}$ = sum of the individual component scores underpinning audit committee effectiveness, that is audit committee independence ($IND_{i,t}$); audit committee financial expertise ($EXP_{i,t}$) and diligence of the audit committee ($DIL_{i,t}$) for firm i at the end of time period t. Hence, $ACE_{i,t} = \sum(IND_{i,t} + EXP_{i,t} + DIL_{i,t})$;

$\sum\gamma_t$ = represents fiscal year indicator variables;

α_k, β_k = coefficients; and

$\varepsilon_{i,t}$ = error term.

In determining the influence of direct custodian excellence (auditor quality/audit committee effectiveness) on earnings conservatism, the sign and significance of the coefficients on β_2 and β_3 are considered. If a) higher standards of direct custodian excellence, b) higher auditor quality c) a more effective audit committee, is associated with firms

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[35]See footnote 29 for detailed explanations.

reporting conservative earnings on a timely basis, then the β_2 and β_3 coefficients in tests of *Equations 7*, *9* and *11*should be positive and significant. Positive and significant β_2 and β_3 coefficients would indicate greater asymmetric timeliness in the recognition of good and bad news. In the reverse news regression model defined by *Equations 8*, *10* and *12*, more conservative earnings would imply that a decline in earnings is a one period shock that reverses almost immediately whilst increases in earnings continue in subsequent period. If there is an increase in the reversal of earnings declines and persistence of earnings increase due to a) higher standards of direct custodian excellence, b) higher auditor quality, and c) a more effective audit committee, the β_2 and β_3 coefficients in tests based on *Equations 8*, *10* and *12*should be significant and negative.

4.6   Sensitivity analysis

Although the Basu (1997) timeliness and persistence models are commonly used methods measuring earnings conservatism, these approaches are not without limitation (e.g. Dietrich, Muller and Riedl 2003, 2007; Givoly et al. 2007; Roychowdhury and Watts 2007). Dietrich et al. (2007), for example, argue that the difference in slopes predicted and reported by Basu (1997) when first testing his (Basu 1997) models reflects sample variance-ratio and truncation biases. Also, Ball and Shivakumar (2005) state the Basu (1997) models cannot differentiate transitory gain and loss components in earnings from random errors in accruals. They (Ball and Shivakumar, 2005) further noted that the reverse regression (or persistence) approach defined by Basu (1997) assumes asymmetrical and efficient reaction to economic news. Given limitations of the Basu (1997) models, further analysis is performed using alternative measures of earnings conservatism such as that by Ball and Shivakumar (2005). Their (Ball and Shivakumar 2005) measure is based on the underlying relationship between contemporaneous accruals and cash flows.

A key aspect of the Basu (1997) timeliness model of earnings conservatism involves the computation of share price returns. The finance and accounting literature documents a range of methods used by researchers to calculate returns. By way of robustness tests, analysis performed using the Basu (1997) timeliness of earnings conservatism will be performed again using alternative measures of returns such as market-adjusted returns using different index benchmarks.

Aside from returns, different calculation bases have been used in computing earnings. For instance, some researchers have based earnings on net income after extraordinary items whilst others have concentrated on earnings in respect solely to operating activity components. To determine if the main findings from this study may be subject to earnings computation biases, additional regression tests (based on *Equations 7* to *12*) are performed using alternative methods for calculating earnings.

In respect to the determination of $DCE_{i,t}$, $AQ_{i,t}$ and $DCE_{i,t}$ scores, alternative criteria and benchmarks have been proposed in the literature. For example, in regards to auditor independence this study applies a non-audit fee to audit fee ratio cut-off of 1:5 (or 20%). Given this cut-off is generally arbitrary with the lack of a definitive consensus in the research literature the cut-off may be tightened or loosened accordingly. In recognizing scores for the independent variable proxies (i.e. $DCE_{i,t}$, $AQ_{i,t}$ and $DCE_{i,t}$) can change depending on cut-off benchmark levels applied, a range of tests are performed again after applying both tighter and more lenient cut-off for different components underpinning direct custodian excellence.

Prior research also suggests earnings conservatism may be influenced by key firm-level characteristics such as firm size, leverage, industry type and growth opportunities (Beekes et al. 2004; Lara, Osma and Mora 2005; Roychowdhury and Watts 2007). To gauge if the main findings presented in this thesis may suffer from firm-level characteristic biases, a range of robustness tests are performed. For instance, the pooled sample is partitioned into sub-samples based on industry sectors. The regression analysis (based on *Equations 7* to *12*) is then performed again using each industry sub-sector sample.

4.7   Conclusion

The main focus of this chapter was to detail the research method used to test the hypotheses of this study. Initial discussion provides justification of the sample selected, source documentation chosen and time period analyzed. Subsequently, measures for the dependent and independent variables used in this study were outlined before the main empirical tests undertaken in this study were identified.

In the next chapter (Chapter 5) the main descriptive statistics are reported. Discussion formally details the actual selection process culminating in the final useable sample. A breakdown of the final useable sample by industry sector is then detailed. Descriptive statistics spanning key firm-level characteristics (i.e. firm size and financial performance) of the final useable sample are then presented. Finally, descriptive results for direct custodian excellence (as per the two major components of auditor quality and audit committee effectiveness) are then detailed supported by breakdowns for key factors such as independence, diligence and expertise.

CHAPTER 5   DESCRIPTIVE RESULTS

5.1   Introduction

Chapter 4 outlined the research method applied in this study. Discussion initially outlined the procedure for determining the final useable sample, documentation to be gathered and measurement of the dependent and independent variables. The major statistical tests and the key multiple regression models to formally test the hypotheses were also defined in Chapter 4. Finally, the discussion in Chapter 4 detailed the robustness and sensitivity tests to be performed.

In this chapter (Chapter 5), the main descriptive statistics are reported. Discussion first concentrates on formally describing the selection process of the final useable sample with an industry breakdown. Descriptive statistics spanning key firm-level characteristics (i.e. firm size and financial performance) of the final useable sample is then presented. In the third and fourth major sections of the chapter, descriptive results for auditor quality and audit committee effectiveness, with breakdowns for key factors, are presented.

5.2   Sample selection process

Analysis conducted in this study is based on a randomly selected sample of 100 Malaysian firms listed on the Main Market of the Bursa Malaysia as of January 1, 2002 and continuously listed till December 31, 2007. The first step in determining the final useable sample was to establish an initial sample of Malaysian firms listed on the Bursa Malaysia Main Market as of January 1, 2002. This initial sample comprised 847 firms.

From the initial sample relevant exclusions based were made. First, all firms that had been liquidated, delisted and/or suspended during any part of the specified observation period were excluded. This totaled 188 firms. Consistent with prior literature, firms (i.e. a total of 54 observations) from the banking, finance, brokerage, and investment services industry were excluded. To reduce any abnormalities associated with an IPO, all firms that listed during the 2001 calendar year were also excluded as were any firms subject to merger and acquisition activities during the observation window. Thus, 21 firms with 2001 calendar year IPOs, and one firm involved in merger and acquisition activity, were excluded. Following the relevant exclusions the final initial sample (from which 100 firms were to be randomly selected) comprised 583 firms. The selection process is summarized in Table 5.1.

Table 5.1: Sampling selection procedures

Details	N
All publicly listed firms on Bursa Malaysia Main Market as at January 1, 2002	847
Less:	
i) Liquidated, delisted and suspended firms	(188)
ii) Banks, finance, brokerage investment services firms	(54)
iii) Firms with IPO in 2001	(21)
iv) Firms involved in merger and acquisition activities	(1)
Firms available for random selection	583

After randomly selecting 100 firms from the final initial sample of 583 the key source documentation (i.e. annual reports for the 2002–2007 financial years of each firm) to determine auditor quality and audit committee effectiveness was sought.[36] If all sought annual reports could be collected without there being any missing data the final useable sample for analytical purposes would comprise 600 firm-year observations. Despite an extensive search of archives, databases, firm and stock exchange websites, and direct requests to firms, 18 annual reports could not be obtained. All collected annual reports were then comprehensively reviewed to determine if required information could be obtained. From this comprehensive review it was determined that data for 25 firm-year observations could not be established.[37] After exclusions for missing documentation and data the final useable sample to be used in the analytical component of this study is 557 firm-year observations.

Table 5.2 provides a breakdown of the final useable sample by the major industry classification of the Bursa Malaysia (see Table 5.2 Panel A) and by each calendar year (see Table 5.2 Panel B) this study covers.

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[36] Share price data could not be obtained from annual reports. Rather, this information was obtained from Bursa Malaysia archives and DataStream.

[37] To ensure a final useable sample of 600 firm-year observations a select and replace option could have been used. As the exclusion for missing documentation and data did not eliminate a randomly selected firm entirely the select and replace option was not undertaken so as to preserve the integrity of the original random selection process.

Table 5.2: Industry breakdown

Panel A: Breakdown of firm-year observations by industry sector		
Sector Name	**N**	**%**
Construction	98	17.594
Consumer Products	102	18.313
Industrial Products	129	23.160
Mining	23	4.129
Plantation	12	2.154
Property	86	15.440
Technology	12	2.154
Trading & Services	95	17.056
Total	**557**	**100.000**
Panel B: Breakdown of firm-year observations by calendar year		
Year	**N**	**%**
2002	84	15.081
2003	91	16.338
2004	92	16.517
2005	96	17.235
2006	96	17.235
2007	98	16.517
Total	**557**	**100.000**

As indicated in Table 5.2 Panel A, the *Industrial Products* industry has the highest proportion of firm-year observations across the final useable sample (i.e. 129 of 557 firm-year observations or 23.160%). The *Consumer Products* industry has the second highest level of representation (i.e. 102 firm-year observations or 18.313% of final useable sample). In contrast, the *Plantation* and *Technology* industry sectors have the lowest proportions with only 12 firm-year observations only (or 2.154% of the final useable sample).

Relative to an industry sector breakdown of the Bursa Malaysia as at January 1, 2002, the industry distribution for the final useable sample is quite similar.[38] For example, as at January 1, 2002 firms from the *Industrial Products* industry represented 20.240% of all firms listed on the Bursa Malaysia Main Market. Meanwhile, firms from the *Plantation* and *Technology* industry sectors comprised on 2.774% and 2.401% of all firms listed on the Bursa Malaysia Main Market as at January 1, 2002.

With respect to the calendar year breakdown (see Table 5.2 Panel B), no single calendar year had a full complement of observations.[39] The highest number of observations for any one calendar year for the study's observation window is 2007 with 98 observations representing 17.594% of the final useable sample. In contrast, 2002 has the lowest

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[38] For comparison purposes, percentage of firms for the actual market of Bursa Malaysia is used instead of the percentage of firm-year observations. The details are presented in Appendix D: Table D:1.
[39] The maximum number of observations for a single calendar year is 100; hence, a full complement of observations.

representation with 84 observations (i.e. 15.081% of the final useable sample). The increasing proportional representation per calendar year is not unexpected given that is more likely missing data will occur in earlier rather than later years.

5.3   Descriptive results of basic firm characteristics

This section provides descriptive statistics for the final useable sample across two basic firm characteristics: (i) firm size; and (ii) financial performance.

5.3.1   Firm size

Table 5.3 reports firm size information for the final useable sample, with a breakdown across Bursa Malaysia industry classifications, across three commonly defined size dimensions: (i) total assets (see Table 5.3 Panel A); (ii) market capitalization (see Table 5.3 Panel B); and (iii) cash flows from operating activities (see Table 5.3Panel C).

Average firm size by total assets for the final useable sample is RM853,716,159 (see Table 5.3 Panel A). Firms from the *Mining* industry have the highest average total assets across the eight main industry sectors of the Bursa Malaysia (i.e. RM1,761,796,696) with firms from the *Technology* industry having the lowest (i.e. RM217,953,083). The smallest firm by total assets from any an individual firm-year observation is from the *Property* industry (i.e. RM15,105,000) whereas the largest by total assets is from the *Industrial Products* industry (i.e. RM9,936,780,000).

In respect to market capitalization, average firm size for the final useable sample is RM894,756,072 (see Table 5.3 Panel B). As for industry sectors, the average size (based on market capitalization) of firms from the *Consumer Product*, *Industrial Products* and *Trading & Services* sectors are the highest (i.e. RM1,166,307,973; RM1,314,970,816 and RM1,359,725,761 respectively). As with total assets, the smallest industry sector based on market capitalization is the *Technology* industry (i.e. RM115,541,510) with the *Construction* industry being the second smallest on average (i.e. RM238,454,061). In regards to an individual firm-year observation, the *Industrial Products* industry had the highest market capitalization value (i.e. RM20,776,686,000) and the *Consumer Products* industry the lowest (i.e. RM1,963,400).

Table 5.3: Firm size characteristics with an industry sector breakdown

Panel A: Total assets (RM millions)

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	544.697	340.139	528.146	40.334	3,876.831
Consumer Products	102	437.948	197.545	462.226	33.023	1,768.794
Industrial Products	129	1,224.397	289.706	2,355.468	49.362	9,936.780
Mining	23	1,761.797	329.444	2,656.379	93.140	7,260.433
Plantation	12	471.791	352.085	334.301	77.593	1,118.000
Property	86	736.475	388.934	964.801	15.105	4,342.096
Technology	12	217.953	211.113	71.424	108.189	317.215
Trading & Services	95	1,130.385	479.798	1,646.194	42.053	6,930.369
Total	557	853.716	324.552	1,545.432	15.105	9,936.780

Panel B: Market capitalization (RM millions)

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	238.454	117.673	317.963	7.993	1,982.449
Consumer Products	102	1,166.308	173.702	2,731.742	1.963	14,062.353
Industrial Products	129	1,314.971	110.880	3,815.928	5.676	20,776.686
Mining	23	896.395	117.048	1,286.591	18.205	3,609.358
Plantation	12	740.503	405.143	764.243	45.000	2,253.626
Property	86	306.424	118.298	544.271	31.419	3,633.767
Technology	12	115.542	105.933	51.788	68.107	248.964
Trading & Services	95	1,359.726	372.886	2,785.573	27.866	18,300.00
Total	557	894.756	135.809	2,528.679	1.963	20,776.686

Panel C: Cash flows from operating activities (RM millions)

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	28.891	12.992	73.614	-121.114	500.716
Consumer Products	102	72.287	12.365	196.047	-78.315	976.669
Industrial Products	129	114.118	11.588	342.148	-109.093	1,740.778
Mining	23	76.684	4.433	161.124	-41.504	601.122
Plantation	12	57.395	47.535	62.285	-14.058	148.672
Property	86	16.755	5.163	61.898	-133.094	355.630
Technology	12	20.901	8.378	23.038	-2.712	59.737
Trading & Services	95	120.610	15.989	319.289	-61.134	1,699.022
Total	557	72.761	10.710	235.562	-133.094	1,740.778

If judging firm size based on cash flow from operating activities, the average for the final useable sample is RM72,761,152 (see Table 5.3 Panel C). The *Trading & Services* industry is the sector with the highest average cash flow from operating activities (i.e. RM120,610,269) followed by the *Industrial Products* industry. Conversely, the *Property* industry is the smallest sector based on average cash flow from operating activities (i.e.RM16,754,701) with the *Technology* industry being the second smallest (i.e. RM20,900,949). The *Property* industry also has the smallest amount of cash flows from operating activities for an individual firm-year observation (i.e. RM-133,094,000) with the *Industrial Products* industry having the highest (RM1,740,778,000).

Overall, firms from the *Industrial Products* and *Trading & Services* industries are relatively similar in average size if considering each major size dimension jointly. This is likely due to these two industry sectors having a lengthy established history in Malaysia's economic development. In contrast, the *Technology* industry is consistently the smallest industry sector on average when considering the three size dimensions. This is primarily due to Malaysia still being an emerging economy and the *Technology* industry has yet to become as entrenched as other sectors.

Whilst Table 5.3 provided a breakdown of the alternative firm size dimensions by industry sectors, Table 5.4 provides a firm size breakdown on a calendar year basis. As shown in Table 5.4 Panel A, aside from a dip from 2002 to 2003, average annual firm size by total assets increases year-on-year. The decline in average annual firm size by total assets from 2002 to 2003 may be explained by the severe acute respiratory syndrome crisis (SARS) that led to a serious recession in South-East Asia that would have reduced asset values. The increase in annual average firm size by total assets year-on-year from 2003 to 2007 is indicative of the economic growth in Malaysia following the SARS crisis and greater global prosperity.

In contrast to firm size by total assets, Table 5.4 Panel B results show average annual firm size by market capitalization does not have a definitive upward (or downward) trend across the observation window. Rather, the annual firm size by market capitalization increases (declines) from 2002 to 2003 (2003 to 2005) and 2005 to 2006 (2006 to 2007). Average annual firm size by market capitalization is greatest in 2006 (i.e. RM1,026,243,088) and lowest in 2005 (i.e.RM754,662,087). The individual firm-year observation with the lowest market capitalization value is recorded in 2002 (i.e. RM1,963,400) with the highest in 2006 (i.e. RM20,776, 686,000).

Similar to average annual firm size by market capitalization, there is a lack of any definitive trend in changes in average annual firm size by cash flow from operating activities. As reported in Table 5.4 Panel C, the average annual firm size by cash flow from operating activities declines (increases) from 2002 to 2003 (2003 to 2005) and 2005 to 2006 (2006 to 2007). The highest average annual firm size by cash flow from operating activities is in 2007 (i.e. RM97,828,424) with the lowest in 2003 (i.e. RM59,316,908). On an individual firm-year observation basis, 2004 has the lowest amount of cash flows from operating activities (i.e. RM-133,094,000) with the highest in 2006 (i.e. RM1,740,778,000).

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Table 5.4: Firm size on yearly basis

Panel A: Total assets (RM millions)

Year	N	Mean	Median	Std Dev	Min	Max
2002	84	803.179	267.953	1,513.721	15.105	9,936.780
2003	91	789.410	285.005	1,447.831	40.334	9,414.204
2004	92	819.244	318.118	1,484.275	43.548	9,489.807
2005	96	874.175	335.805	1,580.286	34.167	9,397.167
2006	96	883.053	372.606	1,539.087	39.467	9,493.122
2007	98	940.329	369.239	1,713.411	33.023	9,793.303
Total	557	853.716	324.552	1,545.432	15.105	9,936.780

Panel B: Market capitalization (RM millions)

Year	N	Mean	Median	Std Dev	Min	Max
2002	84	849.401	126.938	2,344.296	1.963	13,950.061
2003	91	917.898	153.200	2,292.500	2.749	14,062.353
2004	92	822.068	116.698	2,253.585	5.105	15,928.793
2005	96	754.662	106.865	2,258.439	3.927	17,017.095
2006	96	1,026.243	144.005	2,975.631	3.927	20,776.686
2007	98	988.812	146.966	2,931.267	5.676	19,688.383
Total	557	894.756	135.809	2,528.679	1.963	20,776.686

Panel C: Cash flows from operating activities (RM millions)

Year	N	Mean	Median	Std Dev	Min	Max
2002	84	63.886	8.120	201.980	-78.315	1,441.904
2003	91	59.317	5.842	192.975	-52.872	1,385.383
2004	92	65.423	8.230	219.831	-133.094	1,590.909
2005	96	78.352	12.999	255.336	-121.114	1,597.306
2006	96	69.122	12.706	264.995	-116.326	1,740.778
2007	98	97.828	19.299	263.954	-82.879	1,589.575
Total	557	72.761	10.710	235.562	-133.094	1,740.778

Overall, the trough in average annual firm size for the final useable sample (as measured by average total assets and cash flows from operating activities) in 2003 is reflective of the economic trouble besieging Malaysia during the SARS crisis. In contrast, the peak in 2007 values reflects the strong global economy prior to the Global Financial Crisis of 2008/2009.

5.3.2   *Financial performance*

Table 5.5 provides information on the financial performance of the 557 firm-year observations with a breakdown by Bursa Malaysia industry classifications. The key measures for financial performance are: (a) return on assets (ROA); (b) market-to-book value (MTB); and (c) cash flows from operating activities deflated by the market value of equity (CFO).

Table 5.5: Financial performance on industry basis

Panel A: Return on assets (ROA- %)

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	2.353	2.568	14.950	-105.935	74.503
Consumer Products	102	6.450	5.129	12.611	-23.265	50.582
Industrial Products	129	2.480	3.403	9.121	-40.259	28.026
Mining	23	3.372	2.500	8.702	-13.438	21.477
Plantation	12	3.357	7.068	11.324	-17.813	15.646
Property	86	1.724	1.795	5.574	-27.651	23.817
Technology	12	-0.682	4.162	14.931	-44.333	9.356
Trading & Services	95	4.582	3.353	23.402	-59.734	194.276
Total	557	3.414	2.980	14.052	-105.935	194.276

Panel B: Market-to-book value (MTB - %)

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	118.132	85.095	114.258	10.199	616.746
Consumer Products	102	366.790	100.789	886.864	-1.316	6,227.573
Industrial Products	129	123.842	90.247	120.194	-69.435	961.374
Mining	23	137.660	100.894	259.358	-756.016	554.162
Plantation	12	173.709	186.925	112.313	38.286	360.048
Property	86	75.686	51.120	91.031	19.842	693.964
Technology	12	94.100	64.631	77.585	24.431	301.914
Trading & Services	95	334.592	171.419	555.165	-29.932	3,934.697
Total	557	196.841	87.735	467.341	-756.016	6,227.573

Panel C: Cash flow from operating activities deflated by market value (CFO - %)

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	4.764	3.740	8.970	-24.220	37.130
Consumer Products	102	8.046	5.380	14.004	-34.440	57.870
Industrial Products	129	4.902	5.040	8.085	-22.840	28.800
Mining	23	3.543	1.450	8.822	-12.740	29.460
Plantation	12	8.834	9.505	9.340	-4.970	22.970
Property	86	1.604	1.275	5.792	-16.800	23.780
Technology	12	10.104	5.645	10.618	-2.370	26.660
Trading & Services	95	4.905	3.130	11.503	-33.120	41.680
Total	557	5.085	3.610	10.184	-34.440	57.870

As shown in Table 5.5 Panel A, the average ROA for the final useable sample (N = 557 firm-year observations) is 3.414%. ROA average, meanwhile, varies between industries. For example, the average ROA for observations within the *Consumer Products* industry is the largest (i.e. 6.450%) whilst observations comprising the *Technology* industry had the lowest average ROA (i.e. -0.682%). As for individual observations, the lowest ROA is from the *Construction* industry (-105.935%) with the highest being from the *Trading & Services* industry (194.276%).

In respect to MTB, Table 5.5 Panel B shows the average MTB of the final useable sample is 196.841%. Observations from the *Consumer Products* industry have the highest

average MTB of 366.790% which is just higher than the *Trading & Services* industry (i.e. 334.592%). In contrast, observations forming the *Property* industry have the lowest average MTB of 75.686%. As for individual observations, the lowest MTB value is from the *Mining* industry (-756.016%) and the highest in the *Consumer Products* industry (i.e. 6228.00%).

As indicated in Table 5.5 Panel C, the average CFO for the final useable sample is 5.085%. Across the eight main Bursa Malaysia industries the *Technology* industry has the highest average CFO (i.e. 10.104%) that is just higher than for the *Plantation* and *Consumer Products* industries (i.e. 8.834% and 8.046% respectively). In contrast, the *Property* industry has the lowest CFO average (i.e. 1.604%). Meanwhile, the *Consumer Products* industry has the smallest and highest CFO values (-34.440% and 57.870% respectively).

Overall, financial performance (based on ROA, MTB and CFO) for the *Consumer Products* industry appears on average to be relatively high compared to the other major industry sectors of the Bursa Malaysia. Though firms in the *Industrial Products* and *Trading & Services* industries were found to be the largest on average, firms from the *Consumer Products* industry appear to utilize assets more effectively in generating financial performance. Conversely, firms in the *Property* industry did not appear to have strong financial performance fundamentals.

Meanwhile, Table 5.6 provides an annual breakdown of the financial performance (based on ROA, MTB and CFO) of the final useable sample.

As shown in Table 5.6 Panel A the annual average ROA is generally quite stable around 2.000%–3.000% with two spikes in 2004 and 2007. Specifically, in 2002, 2003 and 2005 the average ROA is approximately 2.000% whilst for 2006 it is approximately 3.000%. In 2004, meanwhile, average ROA is close to 6.000% whilst in 2007 it is around 5.000%. The spikes in 2004 may be a by-product of Malaysia's emergence from the economic recession spurned by the SARS crisis whereas the spike in 2007 reflects the global boom in the period prior to the Global Financial Crisis. On an individual observations basis, the lowest (highest) ROA value occurs in 2003 (2004).

In the case of MTB values, the annual average rises from 2002 to 2003 (i.e. 221.884% to 293.206%) before falling for the next two years (i.e. 2004 and 2005). There is again a rise in annual average MTB from 2005 to 2006 (i.e. 129.245% to 165.563%) with stability between 2006 and 2007 (i.e. 165.563% compared to 164.423%). On an individual observation basis the lowest MTB value is reported in 2003 (i.e. -756.016%) with the highest in 2005 (i.e. 6227.573%).

Table 5.6: Financial performance on yearly basis

Panel A: Return on assets (ROA)						
Year	N	Mean	Median	Std Dev	Min	Max
2002	84	2.000	2.207	9.259	-36.640	37.476
2003	91	1.811	2.642	17.815	-105.935	74.503
2004	92	6.058	2.940	21.235	-19.154	194.276
2005	96	2.109	2.666	10.503	-59.574	34.485
2006	96	3.219	3.506	11.029	-44.333	44.419
2007	98	5.102	4.457	9.917	-30.662	50.582
Total	**557**	**3.414**	**2.980**	**14.052**	**-105.935**	**194.276**

Panel B: Market-to-book value (MTB)						
Year	N	Mean	Median	Std Dev	Min	Max
2002	84	221.884	112.591	497.338	-756.016	3,934.697
2003	91	293.206	119.776	670.815	-29.932	5,086.680
2004	92	216.362	83.212	670.042	-1.316	6,227.573
2005	96	129.245	70.256	189.528	-0.852	1,617.003
2006	96	165.563	89.484	236.511	-0.755	1,836.875
2007	98	164.423	83.767	308.902	-69.435	2,311.235
Total	**557**	**196.841**	**87.735**	**467.341**	**-756.016**	**6,227.573**

Panel C: Cash flows from operating activities deflated by market value of equity (CFO)						
Year	N	Mean	Median	Std Dev	Min	Max
2002	84	4.288	3.530	8.799	-18.290	40.450
2003	91	4.105	2.770	9.600	-33.120	56.270
2004	92	4.605	2.865	9.151	-11.640	49.160
2005	96	5.018	3.675	10.511	-34.440	42.700
2006	96	5.054	3.505	10.560	-18.870	51.590
2007	98	7.228	5.390	11.847	-28.140	57.870
Total	**557**	**5.085**	**3.610**	**10.184**	**-34.440**	**57.870**

As reported in Table 5.6 Panel C the annual average CFO value is quite stable between 2002 and 2006 (between 4.000% and 5.000%). In 2007 the annual average CFO value rises to approximately 7.000%. The stability of the annual average CFO values during the majority of the observation period suggests the firms in the final useable sample were able to maintain persistent steady (and generally improving) cash flow streams. On an individual observation basis the smallest CFO value (i.e. -34.440%) is recorded in 2005 and the highest (i.e. 58.870%) in 2007.

Overall, Table 5.6 suggests the financial performance of firms included in the final useable sample is quite stable year-on-year based on ROA and CFO. In terms of MTB, however, annual financial performance appears to display greater variability.

5.4 Descriptive result of auditor quality

This section provides descriptive results related to the quality of the auditor associated with firms in the final useable sample. The initial discussion concentrates on audit

fee descriptive information with particular attention to the brand name of the audit firm. Discussion then covers the two key features of auditor quality: (a) auditor independence; and (b) auditor specialization

5.4.1   Fees and brand name

As auditor independence and auditor specialization is frequently defined in terms of audit fees (i.e. total fees, audit fees and non-audit fees), it is important to describe the fees paid by the final useable sample. Table 5.7 provides total fee, audit fee and non-audit fee information with a breakdown by the major industry classifications of the Bursa Malaysia.

Table 5.7: Total fees, audit fees and non-audit fees by industry

Panel A: Total fees (RM'000)						
Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Construction	98	258.748	131.000	506.496	23.300	4,672.000
Consumer Products	102	192.410	100.600	220.942	32.000	1,179.000
Industrial Products	129	341.064	180.670	467.070	20.000	2,630.000
Mining	23	251.920	128.500	565.980	15.500	2,806.000
Plantation	12	163.128	175.307	79.287	51.000	296.000
Property	86	187.757	126.538	193.420	31.000	942.670
Technology	12	145.595	123.229	55.766	93.000	288.663
Trading & Services	95	412.010	205.477	445.665	16.000	2,451.655
Total	557	276.063	137.000	404.170	15.500	4,672.000
Panel B: Audit fees (RM'000)						
Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Construction	98	217.646	105.986	422.425	23.300	3,829.000
Consumer Products	102	140.847	86.000	169.491	23.000	771.000
Industrial Products	129	273.436	110.844	406.544	20.000	2,455.000
Mining	23	124.459	124.715	96.300	15.500	392.000
Plantation	12	117.821	100.900	64.132	51.000	248.500
Property	86	140.585	100.250	127.204	31.000	555.000
Technology	12	113.552	114.000	30.047	42.600	161.000
Trading & Services	95	347.316	176.000	415.440	16.000	2,430.000
Total	557	218.480	110.000	336.037	15.500	3,829.000
Panel C: Non-audit fees (RM'000)						
Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Construction	98	41.102	6.650	96.055	0.000	843.000
Consumer Products	102	51.563	16.322	84.748	0.000	420.125
Industrial Products	129	67.629	21.000	129.905	0.000	1,034.000
Mining	23	127.461	6.750	520.927	0.000	2,511.000
Plantation	12	45.307	41.675	47.255	0.000	140.420
Property	86	47.172	15.000	83.043	0.000	476.670
Technology	12	32.043	8.250	48.637	0.000	166.116
Trading & Services	95	64.694	24.900	113.114	0.000	596.000
Total	557	57.584	16.200	145.492	0.000	2,511.000

Table 5.7 shows that for the final useable sample average total fees, audit fees and non-audit fees paid to the external auditor is RM276,063, RM218,480 and RM57,584 respectively (see Table 5.7 Panel A, Panel B and Panel C). With specific regard to total fees (see Table 5.7 Panel A), averages vary across the eight major Bursa Malaysia industry classifications. Overall the *Trading & Services* industry had the highest average total fees (i.e.RM412,010) which is more than 20% higher than the next highest industry average; that is, for the *Industrial Products* industry with an average of RM341,064. On the opposite side of the coin the *Technology* industry had the lowest average total fees (i.e. RM145,595). On an individual basis the smallest total fees paid was for a firm-year observation from the *Mining* industry (i.e. RM15,500) whilst the highest (i.e. RM4,672,000) is from the *Construction* industry.

As for audit fees, Table 5.7 Panel B shows the *Trading & Services* industry had the highest average (i.e. RM347,316) followed by the *Industrial Products* industry (i.e. RM273,436). Meanwhile, the *Technology* industry paid the lowest average audit fees (i.e. RM113,552) being just ahead of the *Plantation* industry (i.e. RM117,821). The lowest (highest) audit fees paid for an individual firm-year observation is for a firm in the *Mining* (*Construction*) industry, that is, RM15,500 (RM3,829,000).

Across the eight major Bursa Malaysia industry categories the *Mining* industry paid the highest average amount of non-audit fees (i.e. RM127,461) which is almost double that for any other industry group. Somewhat unsurprising given average total fees, the *Industrial Products* and *Trading & Services* industries had the next highest average non-audit fees (i.e. RM67,629 and RM64,694 respectively). As with total fees and audit fees, the *Technology* industry has the lowest average non-audit fees (RM32,043). The individual observation paying the highest non-audit fees was from the *Mining* industry (RM2,511,000) whilst there was at least one observation from each industry that did not pay any non-audit fees.

The high average fees (total, audit and non-audit) paid by the *Industrial Products* and *Trading & Services* industries is likely a by-product of firm size. As reported in Table 5.3 Panel A, for example, the average total assets of firms in the *Industrial Products* and *Trading & Services* industries were second and third highest behind the *Mining* industry. Moreover, the complexity of *Industrial Products* and *Trading & Services* industries may also contribute to higher average fees. As the *Technology* industry is the smallest sector based on size (see Table 5.3), it is not entirely unexpected that this industry sector paid the lowest average fees. It also reinforces the perception the *Technology* industry is still in its infancy in Malaysia.

Table 5.8, meanwhile, provides an annualized breakdown (as opposed to industry breakdown in Table 5.7) of total, audit and non-audit fees paid by firms in the final useable sample. Average total fees and audit fees have a similar year-on-year pattern. That is, from

2002 to 2004 average annual total fees and audit fees declined (see Table 5.8 Panel A and Panel B) before increasing year-on-year from 2004 to 2006. Between 2006 and 2007 average total fees and audit fees again declined. For non-audit fees (see Table 5.8 Panel C), the annualized average declined year-on-year from 2002 to 2003 (i.e.RM82,664 to RM41,625) before rising in 2004. Between 2004 and 2005 average non-audit fees declined again (i.e. RM47 971 to RM43,554). Following a substantial increase in 2006 (i.e. RM80,181) the average non-audit fees again declined in 2007 (i.e. RM51,536).

Table 5.8: Malaysian total fees, audit fees and non-audit fees by years

Panel A: Total fees (RM'000)						
Year	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
2002	84	307.010	127.350	590.172	16.000	4,672.000
2003	91	248.271	132.000	311.024	15.500	1,613.000
2004	92	245.501	138.106	270.761	15.500	1,187.000
2005	96	249.969	136.450	302.746	19.440	1,701.000
2006	96	319.047	157.393	484.150	31.000	2,806.000
2007	98	287.492	162.500	394.159	32.500	2,167.000
Total	557	276.063	137.000	404.170	15.500	4,672.000
Panel B: Audit fees (RM'000)						
Years	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
2002	84	224.346	89.788	459.915	16.000	3,829.000
2003	91	206.646	100.200	280.870	15.500	1,538.000
2004	92	197.530	110.577	231.954	15.500	1,075.000
2005	96	206.415	112.250	264.728	19.440	1,688.000
2006	96	238.866	126.900	383.313	27.000	2,455.000
2007	98	235.956	123.857	358.636	32.500	2,128.000
Total	557	218.480	110.000	336.037	15.500	3,829.000
Panel C: Non-audit fees (RM'000)						
Years	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
2002	84	82.664	26.750	170.688	0.000	1,034.000
2003	91	41.625	20.000	53.949	0.000	259.000
2004	92	47.971	10.750	86.998	0.000	534.941
2005	96	43.554	13.806	77.809	0.000	430.857
2006	96	80.181	18.500	264.506	0.000	2,511.000
2007	98	51.536	13.650	102.684	0.000	596.000
Total	557	57.584	16.200	145.492	0.000	2,511.000

The fluctuations in average annualized total, audit and non-audit fees are likely a combination of introduction of additional observations between years (particularly for the period 2002–2005) and substantial one-off payments in a given year. Between 2002 and 2003, for example, seven additional observations were included (see Table 5.8). Firms underlying these observations may have been smaller and less complex leading to lower fees; hence, the decline in average total, audit and non-audit fees. Meanwhile, in 2002 the

largest individual payment for audit fees (i.e.RM3,829,000 see Table 5.8 Panel B) was made. The payment is more than 50% higher than the next highest individual audit fee in 2006 (i.e. RM2,455,000) and 2.5 times larger than the largest audit fees paid in 2003 (i.e. RM1,538,000). The large one-off payment for audit fees in 2002 may have caused a spike in average total fees and audit fees in that year. Similarly, in 2006 the highest individual non-audit fee (i.e. RM2,511,000) is paid (see Table 5.8 Panel C). This is 2.5 times larger than the next highest individual non-audit fee payment in 2003 (i.e. RM1,034,000), and more than 5 times larger than the highest individual payment for non-audit services in 2005 (i.e. RM430,857) and 2007 (i.e. RM596,000) respectively. The large individual payment for non-audit services in 2006, thus, significantly contributes to the spike in average annual total and non-audit fees in 2006.[40]

Table 5.9 reports a breakdown of the average fees (total, audit and non-audit) paid to audit firms by brand name. Of the final useable sample of 557 firm-year observations, the *Big 4* audit firms were involved in 326 cases (or 58.528%). Ernst and Young (EY) had the largest share of the audit market covering 172 of 326 (or 52.761%) firm-year observations associated with *Big 4* audit firms. The dominance of EY can in part be explained by the acquisition of a number of clients from Arthur Andersen[41] in 2001. KPMG Peat Marwick (KPMG) had the second highest audit market share of the *Big 4* (79 of 326 *Big 4* firm-year observations or 24.231%) closely followed by PWC, that is PriceWaterhouseCoopers (69 of 326 *Big 4* firm-year observations or 21.166%). The audit market share of Deloitte and Touché (DT), meanwhile, is virtually negligible (6 of 326 *Big 4* firm-year observations or 1.841%). In respect to *Non-Big 4* audit firms, BDO Binder had the highest market representation, being engaged on 25 firm-year observations (i.e. 10.823% of all 231 *Non-Big 4* firm observations).

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[40] It may also be speculated the decline in average total fees, audit fees and non-audit fees between 2002 and 2004 could also be attributed in part to introduction of new regulations in the wake of corporate scandals such as Enron, Parmalat and WorldCom.

[41] In Malaysia Ernst & Young took over the operations of Arthur Andersen (previously considered as a *Big5* firm), thereby leading to a jump in clientele (Ahamad-Rapani 2006).

Table 5.9: Malaysian total fees, audit fees and non-audit fees by audit firms

Panel A: Total fees (RM'000)						
Auditors	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
*Big 4:**						
DEL	6	339.667	353.000	93.940	226.000	472.000
EY	172	310.853	123.500	431.854	20.000	2,630.000
KPMG	79	323.955	170.000	598.272	17.000	4,672.000
PWC	69	337.574	206.459	334.457	60.300	2,128.000
Non-Big 4	231	213.755	129.008	307.814	15.500	2,806.000
Total	557	276.063	137.000	404.170	15.500	4,672.000
Panel B: Audit fees (RM'000)						
Auditors	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
*Big 4:**						
DEL	6	283.333	285.000	47.681	226.000	333.000
EY	172	253.856	110.000	381.896	20.000	2,455.000
KPMG	79	248.385	105.000	487.615	17.000	3,829.000
PWC	69	248.688	148.000	283.839	39.000	2,128.000
Non-Big 4	231	171.205	99.255	236.999	15.500	2,430.000
Total	557	218.480	110.000	336.037	15.500	3,829.000
Panel C: Non-audit fees (RM'000)						
Auditors	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
*Big 4:**						
DEL	6	56.333	43.500	62.752	0.000	141.000
EY	172	56.998	17.675	98.152	0.000	461.000
KPMG	79	75.570	23.000	158.732	0.000	1,034.000
PWC	69	88.886	40.729	117.785	0.000	596.000
Non-Big 4	231	42.551	10.000	175.054	0.000	2,511.000
Total	557	57.584	16.200	145.492	0.000	2,511.000

Legend:*Big 4* firms' abbreviations: DEL is Deloitte and Touche, EY is Ernst and Young, KPMG is KPMG Peat Marwick, PWC is PriceWaterhouseCoopers.

The dominance of the *Big 4* audit firms is not unexpected based on prior research of the Malaysian audit market. Ahamad-Rapani (2006), for example, found based on year 2000 data the *Big 4* audit firms controlled 68.88% of the Malaysian firms listed on the Bursa Malaysia Main Board. The higher representation of *Non-Big 4* (i.e. 41.472%) in this study is attributed to use of the Main Market that was formed from a merger of the Main Board and Secondary boards of Bursa Malaysia. This merger diluted the audit market.[42] Further, the collapse of Arthur Andersen likely prompted some firms to shift to a *Non-Big 4* audit firm.

As reported in Table 5.9, average total fees, audit fees and non-audit fees of each *Big 4* audit firm are higher than for *Non-Big 4* audit firms. For example, in respect to total fees

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[42] Before the introduction of the Main Market, most firms listed on Main board of the Bursa Malaysia were audited by *Big 4* firms but those on the Secondary Board were audited by *Non-Big 4* audit firms (Ahamad-Rapani 2006).

the average amount paid to *Non-Big 4* audit firms (i.e.RM213,755) is approximately a third less than for any of the *Big 4* audit firms. This differential in fees is consistent with prior worldwide research (i.e. Caneghem 2010) that suggests *Big 4* audit firms receive a fee premium relative to *Non-Big 4* audit firms, and is indicative of the perspective *Non-Big 4* audit firms are likely to provide services to smaller, less complex firms for which lower fees are charged.[43]

Amongst the *Big 4* audit firms DEL had the highest average total fees (i.e. RM339,667 see Table 5.9 Panel A) closely followed by PWC (i.e. RM337,574). The bulk of the higher average total fees paid to DEL can be attributed to audit fees whilst for PWC non-audit fees play a substantial role. Specifically, as reported in Table 5.9 Panel B, DEL has the highest average audit fees amongst the *Big 4* audit firms (i.e. RM283,333) whilst PWC has the second lowest (i.e. RM248,688). Meanwhile, PWC had the highest average non-audit fees amongst *Big 4* audit firms (i.e.RM88,886) and DEL the lowest (i.e. RM56,333)—see Table 5.9 Panel C). On an individual observation basis, KMPG was paid the highest individual amount of total fees (i.e. RM4,672,000), audit fees (i.e.RM3,829,000) and non-audit fees (i.e. RM1,034,000).

5.4.2 Auditor independence

As discussed in Chapter 4 Section 4.4.1, the proxy measure is based on the ratio of non-audit fees to total fees. Specifically, an audit firm for an individual firm-year observation is viewed as independent if the ratio of non-audit services to total fees paid for firm i to the incumbent auditor during fiscal year t is less than 20%. When the condition for an individual firm-year observation is met a score of one is assigned.[44] Table 5.10 provides information on auditor independence (i.e. firm-year observations scored one based on the defined proxy measure) with a breakdown by industry, year of observation and audit firm brand name.

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[43] It is noted, however, that *Non-Big 4* audit firms are periodically engaged in large audits. For example, the largest payment of total fees to an individual *Non-Big 4* firm is RM2,806,000. In the main, however, *Non-Big 4* audit firms service smaller entities.

[44] See Chapter 4 (Section 4.4.1.1) for further detailed discussion on the measurement of auditor independence.

Table 5.10: Auditor independence

Panel A: Breakdown by industry sector

Sector Name	N	N Scored 1	%
Construction	98	66	67.347
Consumer Products	102	53	51.961
Industrial Products	129	77	59.690
Mining	23	18	78.261
Plantation	12	7	58.333
Property	86	46	53.488
Technology	12	7	58.333
Trading & Services	95	55	57.895
Total	557	329	59.066

Panel B: Breakdown by year of observation

Year	N	N Scored 1	%
2002	84	40	47.619
2003	91	51	56.044
2004	92	58	63.043
2005	96	61	63.542
2006	96	57	59.375
2007	98	62	63.275
Total	557	329	59.066

Panel C: Breakdown by auditor brand

Auditors	N	N Scored 1	%
*Big 4:**			
DEL	6	3	50.000
EY	172	109	63.372
KPMG	79	48	60.759
PWC	69	26	37.681
Non-Big 4	231	143	61.905
Total	557	329	59.066

Legend:*Big 4* firms' abbreviations: DEL is Deloitte and Touché, EY is Ernst and Young, KPMG is KPMG Peat Marwick, PWC is PriceWaterhouseCoopers.

Table 5.10 shows 329 of the 557 (i.e. 59.066%) firm-year observations comprising the final useable sample were scored one for auditor independence. On an industry basis the *Mining* industry has the largest proportion of firm-year observations scored one for auditor independence (i.e. 78.261%). This result is quite interesting given average audit fees and non-audit fees for the *Mining* industry (see Table 5.7 Panel B and Panel C) are very close. The result presented in Table 5.10 Panel A, therefore, suggests the majority of the *Mining* industry firms paid only a small amount of non-audit fees with some paying substantial amounts. The industry sector with the second highest proportion scoring one for auditor independence is the *Industrial Products* industry (i.e. 67.347%) whilst the *Consumer Products* industry had the least (i.e. 51.961%).

The annualized breakdown reported in Table 5.10 Panel B shows 2002 had the lowest proportion of firm-year observations scoring one for auditor independence (i.e. 47.619%) whilst 2005 had the highest proportion (i.e. 63.542%). On a year-on-year basis, the proportion of observations per year being scored one for auditor independence increased annually from 2002 to 2005 before a decline in 2006. The proportion again rose in 2007. The general increase in the proportion of observations in each year being scored one for auditor independence across the observation window (aside from the dip in 2006) is likely due to the strengthening of corporate governance standards governing auditor/client relationships in Malaysia and increased scrutiny of auditor independence by stakeholders. This is particularly true for the increase between 2002 and 2003 that followed the fallout from worldwide corporate accounting scandals.

In respect to the brand name breakdown presented in Table 5.10 Panel C, a higher number of firm-year observations associated with a *Big 4* auditor are scored one for auditor independence than those associated with *Non-Big 4* audit firms (i.e. 186 compared to 143). However, a higher proportion of firm-year observations associated with a *Non-Big 4* audit firm are scored one for auditor independence than those associated with *Big 4* audit firms (i.e. 61.905% compared to 57.055%). Between the *Big 4* audit firms, EY had the highest proportion of associated firm-year observations scored one for auditor independence (i.e. 63.372%) which was closely followed by KPMG (i.e. 60.759%). PWC, meanwhile, had the lowest proportion of firm-year observations scored one for auditor independence (i.e. 37.681%). The low proportion for PWC could be due to the type of firm this audit firm typically audits. That is, PWC may predominantly audit firms from an industry that regularly demands (or requires) the provision of associated non-audit services. Findings presented in the next section provide further insights into this issue.

5.4.3 Audit specialization

The second pivotal feature of auditor quality addressed in this study is auditor specialization.[45] As discussed in Chapter 4 Section 4.4.1, for this study an auditor for firm i is considered a specialist if the auditor has a 20% market share of total audit fees in industry k with industry market share determined by total audit fees of auditor j in industry k divided by total audit fees received by all auditors in industry k. If the aforementioned condition is met the firm-year observation is scored one. Table 5.11 provides a summary of the determination of market share and auditor specialization.[46]

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[45] See Chapter 4 (Section 4.4.1.2) for a more detailed discussion of previous auditor specialization literature.
[46] In Table 5.11 the market share of *Non-Big 4* audit firms are accumulated. While the market share may be greater than 20%, none of the individual market shares for *Non-Big-4* audit firms in a given industry is in excess of 20%. Hence, a specialized auditor is only attributable to a *Big 4* audit firm.

Table 5.11: Malaysian auditing firm's market shares and auditor specialization

| | Big 4 Audit Firms* | | | | | | | | | | | | Panel E: Non-Big 4 | | | Panel F: Total Audit Fees | | | Panel G: Specialist Auditor | |
| | Panel A: DEL | | | Panel B: EY | | | Panel C: KPMG | | | Panel D: PWC | | | | | | | | | | |
Industry	N	RM'mil	%	N	RM'mil	%	N	RM'mil	%	N	RM'mil	%	N	RM'mil	%	N	RM'mil	%	N	%
Construction	6	1.700	7.970	24	1.696	7.952	**18**	10.850	**50.870**	6	0.526	2.466	44	6.557	30.742	98	21.329	100.000	18	18.367
Consumer Products	0	0.000	0.000	**23**	4.494	**31.282**	30	2.737	19.052	13	1.811	12.606	36	5.324	37.060	102	14.366	100.000	23	22.549
Industrial Products	0	0.000	0.000	**47**	20.141	**57.099**	20	4.535	12.856	11	2.981	8.451	51	7.617	21.594	129	35.274	100.000	47	36.434
Mining	0	0.000	0.000	**6**	0.612	**21.384**	1	0.017	0.594	0	0.000	0.000	16	2.233	78.022	23	2.862	100.000	6	26.087
Plantation	0	0.000	0.000	**6**	0.396	**28.006**	**6**	1.018	**71.994**	0	0.000	0.000	0	0.000	0.000	12	1.414	100.000	12	100.000
Property	0	0.000	0.000	**29**	3.739	**30.924**	0	0.000	0.000	**25**	5.132	**42.445**	32	3.220	26.631	86	12.091	100.000	54	62.791
Technology	0	0.000	0.000	**6**	0.728	**53.412**	0	0.000	0.000	0	0.000	0.000	6	0.635	46.588	12	1.363	100.000	6	50.000
Trading & Services	0	0.000	0.000	**31**	11.856	**35.933**	4	0.466	1.412	**14**	6.710	**20.336**	46	13.963	42.319	95	32.995	100.000	45	47.368
Total	6	1.700	1.397	172	43.662	35.879	79	19.623	16.125	69	17.160	14.101	231	39.549	32.499	557	121.694	100.000	211	37.881

Legend: *Big 4 firms' abbreviations: DEL is Deloitte and Touché, EY is Ernst and Young, KPMG is KPMG Peat Marwick, PWC is PriceWaterhouseCoopers. Auditors identified as specialist auditors are highlighted in bold.

As EY is the external auditor for the highest number and percentage of firm-year observations within the final useable sample, it is not surprising EY is the market leader (based on raw numbers) across a majority of the eight major industry categories of Bursa Malaysia. Specifically, EY had the highest number of observations in the (a) *Construction,* (b) *Consumer Products,* (c) *Industrial Products,* (d) *Mining,* (e) *Property,* (f) *Technology,* and (g) *Trading & Services* industries (see Table 5.11 Panel B). EY and KPMG have an equal number of observations in the *Plantation* industry (see Table 5.11 Panel B and Panel C). For the *Consumer Products* industry, KPMG is the audit firm with the highest number of firm-year observations (i.e. N = 30; see Table 5.11 Panel C).

Just as EY dominates the raw number of observations in the majority of industries, this *Big 4* audit firm also dominates the market share in the majority of industries. Indeed, EY has the highest market share (based on the sum of audit fees received by the auditor from audits of firms in a given industry divided by total audit fees paid by firms in the given industry) in five Bursa Malaysia industry categories. These industries are: (i) *Consumer Product*; (ii) *Industrial Product*; (iii) *Mining*; (iv) *Technology*; and (v) *Trading & Services* (see Table 5.11 Panel B). As reported in Table 5.11 Panel C, KPMG has the highest market share in the *Construction* (i.e. 50.870%) and *Plantation* (i.e. 71.994%) industries. Finally, PWC is the market leader by share in the *Property* industry (i.e. 42.445%; see Table 5.11 Panel D).

In respect to overall market share that underpinned the auditor specialization, Ernst and Young also has the largest market share of 35.879% of the big brand names. This is followed by KPMG Peat Marwick (16.125%) and PriceWaterhouseCoopers (14.101%). Deloitte and Touché has the smallest market share of 1.397%.

Overall, 211 of the 557 firm-year observations (or 37.881%) of the final useable sample are classified as having been audited by a specialist auditor (see Table 5.11 Panel G). In terms of raw number of observations, the *Property* industry had the highest representation (i.e. 54) closely followed by the *Industrial Products* (i.e. 47) and *Trading & Services* (i.e. 45) industries. The *Mining* and *Technology* industries had the least raw number of firm-year observations identified as being audited by a specialist (i.e. six). On a percentage basis all firm-year observations associated with the *Plantation* industry are deemed to have been audited by a specialist whilst the *Construction* industry had the lowest percentage (i.e. 18.367%).

5.5   Descriptive result of audit committee effectiveness

The second major direct custodian described in this study is the audit committee. This study hypothesized a more effective audit committee is likely to be positively associated with earnings conservatism. For this thesis audit committee effectiveness is

defined by: (a) independence; (b) financial expertise; and (c) diligence. This section provides descriptive statistics related to the audit committee's size and effectiveness properties.

5.5.1   Size of the audit committee

Table 5.12 provides information on the size of the audit committee for a final useable sample with a breakdown by industry (see Panel A) and year of observation (see Panel B). The average size of audit committees for the final useable sample comprises 3.623 members with a median of 3.000. The minimum number of members on the audit committee of an individual firm-year observation is 2.000 and the maximum is 6.000.

Table 5.12: Size of audit committee

Panel A: Breakdown by industry sector						
Sector Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Construction	98	3.663	3.000	0.773	3.000	5.000
Consumer Products	102	3.843	4.000	0.887	2.000	6.000
Industrial Products	129	3.713	4.000	0.675	3.000	5.000
Mining	23	3.174	3.000	0.388	3.000	4.000
Plantation	12	4.083	4.500	0.996	3.000	5.000
Property	86	3.581	4.000	0.603	3.000	5.000
Technology	12	3.500	3.500	0.522	3.000	4.000
Trading & Services	95	3.326	3.000	0.471	3.000	4.000
Total	**557**	**3.623**	**3.000**	**0.718**	**2.000**	**6.000**
Panel B: Breakdown by year of observation						
Sector Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
2002	84	3.702	4.000	0.757	3.000	6.000
2003	91	3.648	4.000	0.766	2.000	6.000
2004	92	3.641	4.000	0.704	3.000	6.000
2005	96	3.635	4.000	0.713	3.000	6.000
2006	96	3.646	4.000	0.696	3.000	6.000
2007	98	3.480	3.000	0.677	3.000	6.000
Total	**557**	**3.623**	**3.000**	**0.718**	**2.000**	**6.000**

As shown in Table 5.12 Panel A, the average size of an audit committee in the *Mining*, *Property*, *Technology* and *Trading & Services* industries are below the full final useable sample average. The *Mining* industry has the lowest average audit committee membership (i.e. 3.174) followed by the *Trading & Services* industry (i.e. 3.326). As the average total assets for the *Mining* and *Trading & Services* industries are substantially higher than other industry sectors (aside from the *Industrial Products* industry) it is somewhat surprising the audit committee size is low. This could suggest that whilst firms in the *Mining* and *Industrial Products* industries have large asset bases, accounting for these items is not complex, thereby, requiring a smaller audit committee for monitoring purposes. Another interesting observation is that whilst firms in the *Plantation* industry are amongst the

smallest based on total assets and market capitalization, this sector has the highest average audit committee by size (i.e. 4.083). On an individual firm-year observation basis the smallest and largest audit committees comprising two members and six members respectively are from the *Consumer Products* industry (see Table 5.12 Panel A).

In terms of the annual breakdown (see Table 5.12 Panel B) the highest average audit committee size is recorded in 2002 (i.e. 3.702) and the lowest in 2007 (i.e. 3.480). Between 2003 and 2006 the average size of audit committees of firms included in the final useable sample remained quite stable. Across the observation period the average size of audit committees of firms in the final useable sample is above the minimum recommended by *The Code* in Malaysia. Nonetheless, the decline overall in audit committee size from 2002 to 2007 could be attributed to several factors. For example, audit committees are relatively new to the corporate governance structure of Malaysian publicly listed firms. With the passage of time and development of experience, Malaysian publicly listed firms may have found smaller audit committees more cohesive and effective. Alternatively, with growth of the Malaysian economy between 2002 and 2007, more firms have sought to list. This is likely to have put a resource strain on qualified individuals able to sit on boards of directors and audit committees.

5.5.2   *Audit committee independence*

Audit committee independence is commonly measured as the ratio (expressed as a percentage) of independent directors on the audit committee to total audit committee membership. As reported in Table 5.13, the average (median) audit committee independence of the final useable sample is 71.750% (66.667%). This average is consistent with prior audit committee research covering South-East Asian nations (e.g. Van der Zahn and Tower 2004).

Table 5.13 Panel A provides a breakdown by industry audit committee independence. On average the *Trading & Services* industry has the highest percentage of audit committee independence (i.e. 75.351%) with the *Plantation* industry having the lowest average (i.e. 61.944%). With respect to individual firm-year observations, the lowest level of audit committee independence (i.e. 25.000%) is recorded in the *Industrial Products* industry. Only the *Plantation* industry did not have at least one firm-year observation whereby the entire audit committee was comprised of independent directors.

On an annual basis Table 5.13 Panel B results show audit committee independence is virtually constant (between 70.000% and 71.000%) between 2002 and 2006 before a rise in 2007 to 77.109%. The increase in average audit committee independence in the last observation year may likely be due to the introduction of new corporate governance regulations governing audit committees that came into effect in 2007. Indeed, a key amendment of the revised Malaysian Code of Corporate Governance effective in 2007 was

aimed at strengthening the audit committee by proposing the sub-committee be comprised of a majority of independent members.

Table 5.13: Percentage of independent audit committee from total audit committee

Panel A: Breakdown by industry sector						
Sector Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Construction	98	69.864	66.667	14.337	33.333	100.000
Consumer Products	102	74.935	75.000	11.936	50.000	100.000
Industrial Products	129	69.341	66.667	14.972	25.000	100.000
Mining	23	71.014	66.667	9.689	66.667	100.000
Plantation	12	61.944	60.000	5.017	50.000	66.667
Property	86	71.066	66.667	9.572	50.000	100.000
Technology	12	73.611	75.000	9.289	66.667	100.000
Trading & Services	95	75.351	75.000	12.150	66.667	100.000
Total	**557**	**71.750**	**66.667**	**12.904**	**25.000**	**100.000**
Panel B: Breakdown by year of observation						
Sector Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
2002	84	70.972	66.667	13.486	25.000	100.000
2003	91	70.256	66.667	10.619	25.000	100.000
2004	92	70.399	66.667	11.281	25.000	100.000
2005	96	70.521	66.667	11.141	25.000	100.000
2006	96	70.903	66.667	11.938	25.000	100.000
2007	98	77.109	75.000	16.678	25.000	100.000
Total	**557**	**71.750**	**66.667**	**12.904**	**25.000**	**100.000**

Consistent with prior literature (e.g. Klein 2002a; Carcello and Neal 2003; Agrawal and Chadha 2005; Vera-Munoz 2005) an audit committee in this study is deemed to be most effective when it consists of independent directors. Thus, as described in Chapter 4 Section 4.4.2 a firm-year observation is scored one if the associated audit committee to that observation is comprised mainly of independent directors.[47] Table 5.14 reports (with a breakdown by industry and year) the number and percentage of firm-year observations scoring one for audit committee independence based on the measure used in this study.

For the entire final useable sample Table 5.14 shows only 64 of 557 (i.e. 11.490%) firm-year observations scored one where audit committees were comprised mainly of independent directors. On an industry basis the *Trading & Services* industry is the sector with the largest percentage of mainly independent audit committee members (i.e. 17.895% or 17 of 95 *Trading & Services* industry observations). The second largest is the *Consumer Products* industry with 15 of 102 (or 14.706%) observations having mainly independent

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[47] See Chapter 4 (Section 4.4.2.1) for detailed discussion on the measurement of an audit committee's independence.

audit committee members. The *Plantation* industry did not have a single firm-year observation associated with mainly independent audit committee members.

Table 5.14: Audit committee independence

Panel A: Breakdown by industry sector			
Sector Name	**N**	**N Scored 1**	**%**
Construction	98	13	13.365
Consumer Products	102	15	14.706
Industrial Products	129	11	8.527
Mining	23	2	8.696
Plantation	12	0	0.000
Property	86	5	5.814
Technology	12	1	8.333
Trading & Services	95	17	17.895
Total	557	64	11.490
Panel B: Breakdown by year of observation			
Sector Name	**N**	**N Scored 1**	**%**
2002	84	9	10.714
2003	91	5	5.495
2004	92	6	6.522
2005	96	7	7.292
2006	96	8	8.333
2007	98	29	29.592
Total	557	64	11.490

On an annual basis (see Table 5.14 Panel B) the proportion of audit committees with mainly independent members dropped between 2002 and 2003 (i.e. 10.714% to 5.495%) before rising (steadily) on an annual basis from 2003 to 2006 (i.e. 5.495% to 8.333%). In 2007 the proportion of audit committees with mainly independent members also increased from the prior year though the increase is more noticeable. Indeed, of the 98 firm-year observations in 2007, 29 (or 29.592%) had proportion of audit committees with mainly independent members. This is fourfold increase over 2006. This rapid increase is likely due to the revised Malaysian Code of Corporate Governance that became effective in 2007 and that emphasized the importance of an independent audit committee.

5.5.3 *Audit committee financial expertise*

Financial expertise is another key component of audit committee effectiveness. As per earlier discussion in this thesis, an audit committee is deemed to have financial expertise if at least one independent director on the sub-committee has an accounting degree and also has recognized professional accounting credentials. If the noted conditions are met then a

firm-year observation is scored one.[48] Table 5.15 provides an industry and annual breakdown of audit committee financial expertise.

Table 5.15: Audit committee financial expertise

Panel A: Breakdown by industry sector			
Sector Name	**N**	**N Scored 1**	**%**
Construction	98	44	44.898
Consumer Products	102	44	43.137
Industrial Products	129	35	27.132
Mining	23	2	8.696
Plantation	12	4	33.333
Property	86	27	31.395
Technology	12	6	50.000
Trading & Services	95	34	35.789
Total	557	196	35.189
Panel B: Breakdown by year of observation			
Sector Name	**N**	**N Scored 1**	**%**
2002	84	27	32.143
2003	91	31	34.066
2004	92	31	33.696
2005	96	35	36.458
2006	96	35	36.458
2007	98	37	37.755
Total	557	196	35.189

For the entire final useable sample 196 of 557 firm-year observations (i.e. 35.189%) were associated with audit committees that had a financial expert as a member. On an industry basis, Table 5.15 Panel A indicates the *Technology* industry firm-year observations have the highest percentage of audit committees with financial expertise, that is, 6 of 12 (or 50.000%).The industry sector with the second largest percentage is the *Construction* industry (i.e. 44.898%) which is followed by the *Consumer Products* industry at 43.137%. The *Mining* industry had the lowest percentage of firm-year observations associated with an audit committee having a financial expert that is 8.696%.

Across the observation window there is an increase in the proportion of firm-year observations associated with audit committees having a financial expert. The change year-on-year, though, is not altogether substantive except for between 2004 and 2005 when percentages increased from 33.696% to 36.458%. The year with the largest percentage of firm-year observations scoring one for financial expertise is 2007 with the smallest in 2002 (i.e. 37.755% and 32.143% respectively).

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[48]See Chapter 4 (Section 4.4.2.2) for detailed discussion on the measurement of audit committee financial expertise.

Despite new corporate governance regulations stressing the importance of financial experts on the audit committee, the results presented in Table 5.15 Panel B suggest Malaysian publicly listed firms may not be as proactive toward adding financial experts as one may expect. This could be due to the lack of financial experts willing to sit on audit committees, or mere apathy.

5.5.4 *Audit committee diligence*

Diligence is the final component of audit committee effectiveness considered in this study. Table 5.16 provides information on number of audit committee meetings undertaken by firms included in the final useable sample. A breakdown by industry and year is also documented in Table 5.16.

Table 5.16: Audit committee diligence (actual number of meetings)

Panel A: Breakdown by industry sector						
Sector Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Construction	98	5.020	5.000	0.930	4.000	10.000
Consumer Products	102	4.716	5.000	0.825	3.000	7.000
Industrial Products	129	4.605	5.000	0.666	3.000	7.000
Mining	23	4.391	4.000	1.158	3.000	7.000
Plantation	12	4.750	5.000	0.622	4.000	6.000
Property	86	5.070	5.000	0.955	3.000	8.000
Technology	12	4.583	4.500	0.669	4.000	6.000
Trading & Services	95	5.137	5.000	0.930	3.000	9.000
Total	557	4.855	5.000	0.887	3.000	10.000
Panel B: Breakdown by year of observation						
Sector Name	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
2002	84	4.917	5.000	1.020	3.000	8.000
2003	91	4.912	5.000	0.839	3.000	7.000
2004	92	4.761	5.000	0.830	3.000	7.000
2005	96	4.833	5.000	0.937	4.000	9.000
2006	96	4.865	5.000	0.936	3.000	10.000
2007	98	4.847	5.000	0.765	3.000	7.000
Total	557	4.855	5.000	0.887	3.000	10.000

For the entire final useable sample audit committees met on average 4.855 times. Across the eight major Bursa Malaysia industry categories, the *Trading & Services* sector had the highest average number of audit committee meetings per firm-year observation, that is, 5.137 times. In contrast, the lowest average number of audit committee meetings per firm-year observation for a given industry sector is the *Mining* industry, that is, 4.391 times. The lowest number of times an audit committee met in an individual firm-year is three times. This low is observed in the *Trading & Services*, *Consumer Product*, *Industrial Products* and

Mining industries. In contrast, the *Construction* industry had the highest number of audit committee meetings (i.e. 10 times) for an individual firm-year observation.

Table 5.16 Panel B shows that the average number of audit committee meetings for each observation year is quite stable ranging from a low of 4.761 times in 2004 to a high in 2002 of 4.917 times. Across the observation period there is no distinctive upward or downward trend in annual average diligence. There is a minor decline from 2002 to 2004 before an increase from 2004 to 2006. There is a slight decline from 2006 to 2007 (i.e. 4.865 times to 4.847 times).

As discussed in Chapter 4 Section 4.4.2, a firm-year observation is scored one if during that year of observation the audit committee met five times or more.[49] Table 5.17 provides details of audit committee diligence with a breakdown by industry and year.

Table 5.17: Audit committee diligence

Panel A: Breakdown by industry sector			
Sector Name	**N**	**N Scored 1**	**%**
Construction	98	71	72.449
Consumer Products	102	56	54.902
Industrial Products	129	68	52.713
Mining	23	5	21.739
Plantation	12	8	66.667
Property	86	62	72.093
Technology	12	6	50.000
Trading & Services	95	73	76.842
Total	557	349	62.657
Panel B: Breakdown by year of observation			
Year	**N**	**N Scored 1**	**%**
2002	84	50	59.524
2003	91	62	68.132
2004	92	52	56.522
2005	96	57	59.375
2006	96	61	63.542
2007	98	67	68.367
Total	557	349	62.657

As reported in Table 5.17, 349 of the 557 firm-year observations of the final useable sample were scored one. This represents 62.657% of the final useable sample. On an industry basis, the *Trading & Services* industry had the highest proportion of diligent audit committees that is 73 of 95 observations or 76.842%. This is closely followed by the *Construction* and *Property* industries, that is, 71 of 98 observations (or 72.449%) and 62 of 86 observations (or 72.093%) respectively. The smallest percentage is for the *Mining*

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[49] See Chapter 4 (Section 4.4.2.3) for detailed discussion on the measurement of audit committee diligence.

industry where only 21.739% firm-year observations for this industry are associated with a diligent audit committee.

In respect of the annual breakdown, Table 5.17 Panel B shows considerable year-on-year changes in audit committee diligence across the observation period. There is an increase year-on-year of the proportion of observations in a given year being scored one for audit committee diligence from: (a) 2002 to 2003; and (b) 2004 to 2007. Meanwhile, there is a decline from 2003 to 2004. The year with the highest proportion of observations being scored one is in 2007 (i.e. 68.367%) with the lowest in 2004 (i.e. 56.522).

5.6 Descriptive result for composite scores $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$

While previous sections discussed descriptive statistics for each independent variable features in individual, this section will present the discussions using composite scores (i.e. direct custodian excellence, audit quality and audit committee effectiveness). As discussed in Chapter 4 Section 4.4, two major components of direct custodian excellence are auditor quality and audit committee effectiveness. The direct custodian excellence variable is measured by combining the scores for auditor quality and the scores for audit committee effectiveness. Table 5.18 provides information on these composite scores with breakdown by industry and year of observation[50].

Table 5.18 Panel A Column I shows that the average composite scores of direct custodian excellence on an industry basis is 3.487. On average the *Plantation* industry has the largest composite score of direct custodian excellence (i.e. 4.500) with the *Mining* industry having the lowest composite score (i.e. 2.652). With respect to individual firm-year observations, for the smallest composite scores of $DCE_{i,t}$, the entire industries have $DCE_{i,t}$ composite scores of at least one firm-year observation except for the *Plantation* industry with composite scores of three. Meanwhile, for the largest composite scores of $DCE_{i,t}$, only the *Mining* industry did not show maximum composite scores of six (i.e. five).

On an annual basis, Table 5.18 Panel B Column I shows that 2002 had the lowest average composite scores of direct custodian excellence (i.e. 3.274) whilst 2007 had the highest composite score (i.e. 3.582). On a year-on-year basis, the results shows average composite scores of direct custodian excellence do not have a definitive upward or downward trend across the study period. The average annual scores increase (decrease) from 2002 to 2003 (2003 to 2004), 2004 to 2005 (2005 to 2006) and 2006 to 2007. In respect to individual firm-year observations, at least one firm-year observation has composite scores of one for the entire usable sample.

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[50] Please refer to Table G: 1 for explanation on descriptive statistics for composite scores of $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$.

Table 5.18: Descriptive statistics for composite scores of $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$

Panel A: Breakdown by major industry classification

Industry	N	Column I:$DCE_{i,t}$ composite score					Column II:$AQ_{i,t}$ composite score					Column III:$ACE_{i,t}$ composite score				
		Mean	Median	Std Dev	Min	Max	Mean	Median	Std Dev	Min	Max	Mean	Median	Std Dev	Min	Max
Construction	98	3.490	4.000	1.058	1.000	6.000	1.408	1.000	0.810	0.000	3.000	2.082	2.000	0.755	0.000	3.000
Consumer Products	102	3.353	3.000	1.087	1.000	6.000	1.392	1.000	0.924	0.000	3.000	1.961	2.000	0.716	1.000	3.000
Industrial Products	129	3.287	3.000	1.318	1.000	6.000	1.566	1.000	0.991	0.000	3.000	1.721	2.000	0.729	0.000	3.000
Mining	23	2.652	2.000	1.071	1.000	5.000	1.348	1.000	0.935	0.000	3.000	1.304	1.000	0.470	1.000	2.000
Plantation	12	4.500	4.500	1.168	3.000	6.000	2.583	3.000	0.515	2.000	3.000	1.917	2.000	0.793	1.000	3.000
Property	86	3.779	4.000	1.442	1.000	6.000	1.791	2.000	1.053	0.000	3.000	1.988	2.000	0.819	0.000	3.000
Technology	12	3.583	4.000	1.730	1.000	6.000	1.583	2.000	1.505	0.000	3.000	2.000	2.000	0.426	1.000	3.000
Trading & Services	95	3.695	4.000	1.297	1.000	6.000	1.568	1.000	1.136	0.000	3.000	2.126	2.000	0.640	1.000	3.000
Total	557	3.487	3.000	1.276	1.000	6.000	1.555	1.000	1.005	0.000	3.000	1.932	2.000	0.741	0.000	3.000

Panel B: Breakdown by year of observation

Year	N	Column I:$DCE_{i,t}$ composite score					Column II:$AQ_{i,t}$ composite score					Column III:$ACE_{i,t}$ composite score				
		Mean	Median	Std Dev	Min	Max	Mean	Median	Std Dev	Min	Max	Mean	Median	Std Dev	Min	Max
2002	84	3.274	3.000	1.206	1.000	6.000	1.429	1.000	0.997	0.000	3.000	1.845	2.000	0.720	1.000	3.000
2003	91	3.560	4.000	1.231	1.000	6.000	1.571	1.000	0.990	0.000	3.000	1.989	2.000	0.691	1.000	3.000
2004	92	3.489	4.000	1.262	1.000	6.000	1.641	2.000	0.990	0.000	3.000	1.848	2.000	0.769	0.000	3.000
2005	96	3.510	4.000	1.361	1.000	6.000	1.594	1.500	1.052	0.000	3.000	1.917	2.000	0.763	0.000	3.000
2006	96	3.479	3.000	1.314	1.000	6.000	1.521	1.000	1.036	0.000	3.000	1.958	2.000	0.724	0.000	3.000
2007	98	3.582	3.000	1.276	1.000	6.000	1.561	1.500	0.975	0.000	3.000	2.020	2.000	0.773	0.000	3.000
Total	557	3.487	3.000	1.276	1.000	6.000	1.555	1.000	1.005	0.000	3.000	1.932	2.000	0.741	0.000	3.000

With regards to auditor quality composite scores, as reported in Table 5.18 Panel A Column II, the average composite scores of auditor quality on an industry basis is 1.555. On average the *Mining* industry has the lowest composite score of auditor quality (i.e. 1.348) with *Plantation* industry having the largest composite score (i.e. 2.583). With respect to individual firm-year observations, only *Plantation* industry has composite scores of auditor quality of at least two for the lowest scores whilst the entire industries have none. Meanwhile, for the largest composite score of auditor quality, all firm-year observations are associated with higher quality of auditor with composite scores of three.

In respect to the annual breakdown, (see Table 5.18 Panel B Column II), the highest average auditor quality composite score is recorded in 2004 (i.e. 1.641) and the lowest in 2002 (i.e. 1.429). However, the average composite score included in the final useable sample remained quite stable for the rest of the annual years (ranged between 1.521 to 1.571). In respect to individual firm-year observations, none of firm-year observations was scored one (1) for the lowest level of auditor quality. Meanwhile, for the highest level of auditor quality, the entire firm-year observations were scored maximum composite scores of three.

Table 5.18 Panel A Column III shows that average composite scores of audit committee effectiveness on an industry basis is 1.932. Unlike the result shown in Table 5.18 Panel A Column II, the highest average composite scores for audit committee effectiveness is *Trading & Services* industry (i.e. 2.126). This is followed by the *Construction* and *Technology* industry with average composite scores of 2.082 and 2.000 respectively. The smallest average composite scores for audit committee effectiveness is the *Mining* industry (i.e. 1.304). With regards to individual firm-year observations, all firm-year observations across all industries were scored at least one except the *Construction*, *Industrial Products* and *Property* industries with nil composite scores. Meanwhile, for the largest composite scores of audit committee effectiveness, all firm-year observations are associated with effective audit committee with composite scores of three except for the *Mining* industry (i.e. two).

Overall, the *Plantation* and *Trading & Services* industries have the highest composite scores for direct custodian excellence, auditor quality and audit committee effectiveness. In contrast, the *Mining* industry is consistently being the industry with the lowest composite scores among the three variables. This could be due to *Mining* being an industry with the highest average non-audit fees, having the least number of firms identified as specialist and with poor diligence scores. In respect to the breakdown by year of observation, year 2002 remained as the year with the lowest composite scores across three variables (i.e. $DCE_{i,t}$, $ACE_{i,t}$ and $AQ_{i,t}$). The firms were still in the process of adopting rules and regulations proposed by *The Code* which were introduced in 2002, and this could explain the poor result in 2002.

5.7   Conclusion

This chapter focused extensively on reporting the main descriptive statistics of this study based on 557 final usable samples. Included in the first discussions were the sample selection process and the descriptive statistics for the final useable sample across the two basic firm characteristics of firm size and financial performance. Three commonly defined size dimensions of total assets, market capitalization and cash flows from operating activities were used to discuss firm size, whilst for financial performance, three key measures of return on assets (ROA),market-to-book value (MTB) and cash flows from operating activities deflated by the market value of equity (CFO) were used to discuss financial performance.

Then the chapter concentrated on reporting descriptive statistics for auditor quality and audit committee effectiveness, with industry and annual breakdowns. In respect to auditor quality, the discussion covered the three key features of auditor quality, auditor brand name, auditor independence and auditor specialization, whilst for audit committee effectiveness, the discussion covered sub-committee independence, financial expertise and diligence. The last section of this chapter presents the descriptive statistics of direct custodian excellence, audit quality and audit committee effectiveness based on composite scores results. The next chapter will presents the main findings of the study. The discussion covers the result of multiple regression analysis of the Basu (1997) timeliness and persistence approaches.

CHAPTER 6   FINDINGS OF THE STUDY

6.1   Introduction

Chapter 5 presented the main descriptive statistics of this study. The chapter focused on the sample selection process in determining the final usable sample comprising 557 firm-year observations. Descriptive statistics associated with key firm characteristics (i.e. firm's size and financial performance) of 557 firm-year-observations was thoroughly discussed. Meanwhile, the chapter also presented and discussed descriptive statistics of the two main components associated with direct custodian excellence (i.e. auditor quality and audit committee effectiveness).

The primary purpose of Chapter 6 is to present the main multivariate analysis findings of the study. Initial discussion in the chapter highlights the results of the multiple regression analysis[51] using the original model specifications of earnings conservatism (i.e. timeliness and persistence) defined by Basu (1997). This discussion provides a benchmark in considering the impact of direct custodian excellence (plus auditor quality and audit committee effectiveness) on earnings conservatism. Statistical results of multivariate analysis to test the study's general proposition is then reported and discussed. This is then followed by the presentation of the main empirical analysis results testing the key hypotheses.

6.2   Timeliness and persistence base models of earnings conservatism

As discussed in Chapter 1, an objective of this study is to examine the nature and extent of earnings conservatism amongst Malaysian publicly listed firms. In an initial step to achieve this objective, the original models of the timeliness and persistence of earnings persistence defined by Basu (1997) are tested using the final useable sample. Statistical results of these tests are presented in the following two sub-sections[52].

6.2.1   Timeliness of earnings conservatism

Table 6.1 presents empirical results of analysis testing the original Basu (1997) timeliness of earnings conservatism base model. Seven regressions are presented with results in Table 6.1 Column I (PS) including the full pooled sample with the remaining six for each specific individual year of the observation period.

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[51] Prior to conducting any of the analysis, items were checked extensively to clean the data, and where deemed necessary, adjusted in line with statistical procedures. Analysis showed no substantial and persistent problem with non-normality. A correlation matrix also was run to identify any potential multicollinearity problems in the regressions. Please refer to Appendix I (Table I:1) for details.
[52] Please refer to Appendix H (Table H:1, H:2, H:3 and H:4) for details descriptive statistics of variables entering regression model (i.e., timeliness and persistence approaches).

For the regression using the full 557 firm-year observations underpinning the study the Adjusted R^2 value indicates approximately only 5.90% of the variation in the dependent variable (i.e. $OPI_{i,t}$)[53] is explained by the independent and control variables, and interaction terms (see Table 6.1 Column I). On the basis of the observation year, the highest amount of variation in the dependent variable (i.e. $OPI_{i,t}$) explained by the independent variables and interaction term is for the regression using 2007 firm-year observations only (see Table 6.1 Column VII; 16.00%). In contrast, the regression using only 2003 firm-year observations sees the lowest amount of dependent variable variation explained by the regression model (see Table 6.1 Column III; -0.30%).

As show in Table 6.1, the coefficient on $NEGRET_{i,t}$ is positive (negative) for regression involving the pooled sample, and the 2002, 2005 and 2007 (2003, 2004 and 2006) observation year. Across the seven regressions reported in Table 6.1, only the coefficient $NEGRET_{i,t}$ for the 2007 observation-year (see Table 6.1 Column VII) is statistically significant at conventional levels (i.e. $p<0.10$).

In respect to $RET_{i,t}$, coefficients of this variable are positive in regressions for the pooled sample, and 2003, 2006 and 2007 observation-years (see Table 6.1 Column I, Column III, Column VI and Column VII). Of regressions with a positive coefficient on $RET_{i,t}$, regressions using the pooled sample (see Table 6.1 Column I) and 2007 firm-year observations (see Table 6.1. Column VII) are statistically significant (i.e. $p<0.01$). As for regressions with a negative sign on the $RET_{i,t}$ coefficient (see Table 6.1 Column II), Column IV (2004) and Column V (2005), only the regression using 2004 firm-year observations is statistically significant (i.e. $p< 0.05$).

As for the two-way $RET_{i,t}*NEGRET_{i,t}$ interaction term, coefficients on this variable are positive in all regressions reported in Table 6.1 except for that using 2006 firm-year observations (see Table 6.1 Column VI). For those regression with positive $RET_{i,t}*NEGRET_{i,t}$ coefficients, all are statistically significant (i.e. $p<0.05$ and $p<0.01$) except for the regression using 2003 firm-year observations (see Table 6.1 Column III). Meanwhile, the negative $RET_{i,t}*NEGRET_{i,t}$ coefficient in the regression using 2006 firm-year observations is also insignificant from zero (see Table 6.1 Column VI).

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[53] To solve problems related to outliers, winsoring of the 1st percentile and 99th percentile of $OPI_{i,t}$ values have been conducted.

Table 6.1: Regression analysis of earnings timeliness

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.098	3.343	0.051	0.704	0.016	0.323	0.182	3.413	0.082	1.189	0.037	0.990	0.058	1.714
$NEGRET_{i,t}$	0.033	1.052	0.130	1.286	-0.001	-0.017	-0.091	-1.352	0.003	0.037	-0.097	-0.871	0.109	1.793[Ψ]
$RET_{i,t}$	0.049	3.089[‡]	-0.030	-0.144	0.078	1.093	-0.305	-2.476[†]	-0.119	-0.715	0.043	1.449	0.065	3.416[‡]
$RET_{i,t}*NEGRET_{i,t}$	0.245	3.325[‡]	0.663	2.292[†]	0.058	0.193	0.510	3.042[‡]	0.497	2.100[†]	-0.054	-0.153	0.274	2.217[†]
Year 2002	-0.059	-1.638												
Year 2003	-0.075	-2.087[†]												
Year 2004	-0.011	-0.317												
Year 2005	-0.066	-1.871[†]												
Year 2006	-0.075	-2.104[†]												
Adjusted R^2	0.059		0.091		-0.003		0.087		0.036		0.020		0.160	
F-Value	5.391[‡]		3.778[†]		0.904		3.896[†]		2.167[Ψ]		1.638		7.162[‡]	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $OPI_{i,t}$ = operating income firm *i* scaled by market value of equity of firm *i* at the beginning of the fiscal year *t*; $RET_{i,t}$ = buy-and-hold return over fiscal year *t* of firm *i* (i.e. $(P_t - P_{t-1})/P_{t-1}$ where P_t is the price of shares for firm *i* three (3) months after the end of the fiscal year *t* and P_{t-1} is the price of shares for firm *i* nine (9) months prior to the fiscal year *t*); $NEGRET_{i,t}$= indicator variable with firm *i* scored one (1) if RET_t is negative, otherwise firm *i* scored zero (0); $\sum \gamma_t$ = represents fiscal year indicator variables; α_k, β_k = coefficients; ε_{jt} = error term; and Ψ, †, ‡= significant at the 0.10, 0.05 and 0.01 confidence levels.

6.2.2   Persistence of earnings conservatism

While Table 6.1 presented statistical results for the Basu (1997) timeliness of earnings conservatism basic model, Table 6.2 presents regression findings related to the persistence of earnings conservatism.

For the regression using the full 557 firm-year observations underpinning the study the Adjusted R^2 value indicates approximately only 8.40% of the variation in the dependent variable (i.e. $\Delta OPI_{i,t}$) is explained by the independent and control variables, and interaction terms (see Table 6.2 Column I). On the basis of the observation year, the highest amount of variation in the dependent variable (i.e. $\Delta OPI_{i,t}$) explained by the independent variables and interaction term is for the regression using 2002 firm-year observations only (see Table 6.2 Column II; 58.20%). In contrast, the regression using only 2004 firm-year observations sees the lowest amount of dependent variable variation explained by the regression model (see Table 6.2 Column IV; 3.80%).

In the case of the Basu (1997) persistence of earnings conservatism basic model, coefficients on $NEG\Delta OPI_{i,t-1}$ are positive in four of the regressions presented (i.e. Table 6.2 Column I, Column II, Column III and Column VII) and negative for the remaining three regressions (i.e. Table 6.2 Column IV, Column V and Column VI). Of the seven regressions presented in Table 6.2, none of the coefficients on $NEG\Delta OPI_{i,t-1}$ are statistically significant from zero.

As for the change on operating income from year *t-2* to *t-1* (defined by $\Delta OPI_{i,t-1}$), Table 6.2 results indicate the coefficient is negative except for regressions using the pooled sample (see Table 6.2 Column I), 2006 firm-year observations (see Table 6.2 Column VI) and 2007 firm-year observations (see Table 6.2 Column VII). For regression with negative $\Delta OPI_{i,t-1}$ coefficients, the $\Delta OPI_{i,t-1}$ coefficient in the regression using 2005 firm-year observations is statistically significant at the 5% confidence level. In contrast, for the regression using 2002 (2004) firm-year observations the significance of the $\Delta OPI_{i,t-1}$ coefficient is high (lower) at the 0.1% (10%) confidence level. The $\Delta OPI_{i,t-1}$ coefficient in the regression using 2003 firm-year observations is statistically insignificant. Meanwhile, all $\Delta OPI_{i,t-1}$ coefficients reported in Table 6.2 with a positive directionality are highly significant (i.e. p<0.01; see Table 6.2 Column I, Column VI and Column VII).

Table 6.2: Regression analysis of earnings persistence

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.528	1.176	0.119	0.981	0.017	0.201	0.115	0.826	-0.101	-1.153	0.018	0.130	-0.125	-0.109
$NEG\Delta OPI_{i,t-1}$	0.285	0.741	0.007	0.039	0.045	0.332	-0.135	-0.654	-0.036	-0.234	-0.044	-0.221	0.168	0.068
$\Delta OPI_{i,t-1}$	1.751	7.262[‡]	-1.259	-10.299[‡]	-0.026	-0.265	-0.449	-1.830[Ψ]	-0.255	-2.471[†]	1.154	7.679[‡]	4.009	5.097[‡]
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-1.994	-5.970[‡]	1.117	8.326[‡]	0.281	2.273[†]	0.051	0.155	-0.787	-5.012[‡]	-1.830	-8.560[‡]	-4.933	-1.020
Year 2002	-0.939	-1.468												
Year 2003	-0.920	-1.483												
Year 2004	-0.806	-1.297												
Year 2005	-0.965	-1.579												
Year 2006	-0.672	-1.092												
Adjusted R^2	0.084		0.582		0.089		0.038		0.477		0.444		0.194	
F-Value	7.401[‡]		39.517[‡]		3.918[†]		2.205[Ψ]		29.901[‡]		26.310[‡]		8.772[‡]	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \sum\gamma_t + \varepsilon_{i,t}$ where: $\Delta OPI_{i,t}$ = change in operating income of firm i in fiscal year t scaled by the market value of equity of firm i at the beginning of the fiscal year t (i.e. $MVE_{i,t-1}$); $\Delta OPI_{i,t-1}$ = change in operating income of firm i in fiscal year $t-1$ scaled by the market value of equity of firm i at the beginning of the fiscal year $t-1$ (i.e. $MVE_{i,t-1}$); $NEG\Delta OPI_{i,t-1}$= indicator variable with firm i scored one (1) if $\Delta OP_{i,t-1}$ is negative, otherwise firm i scored zero; $\sum\gamma_t$ = represent fiscal year indicator variables; α_k, β_k = coefficients; ε_{jt} = error term; and Ψ, †, ‡ significant at the 0.10, 0.05 and 0.01 confidence levels.

With regards to the two-way $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ interaction term, the directionality of the sign on coefficients for this variable are mixed in regression reported in Table 6.2. Specifically, the coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ is negative in four of the seven regressions (i.e. Table 6.2 Column I, Column V, Column VI and Column VII). Of regression with a negative coefficient on the two-way $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ interaction term, the coefficient is highly significant (i.e. $p<0.01$) for the pooled sample (see Table 6.2 Column I), 2005 firm-year observations (see Table 6.2 Column V) and 2006 firm-year observations (see Table 6.2 Column VI). Conversely, for regression in which the coefficient on the two-way $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ interaction term is positive, the coefficient is significant for regression using 2002 firm-year observations (see Table 6.2 Column II; $p<0.01$) and 2003 firm-year observations (see Table 6.2 Column III; $p<0.05$).

6.3   Test of the GP_{DCE}, GH_a and GH_b

It was hypothesized in Chapter 3 that earnings conservatism will be significantly higher in firms with greater direct custodian excellence ($DCE_{i,t}$) relative to firms with lower direct custodian excellence ($DCE_{i,t}$). Results of regression analysis to test this hypothesis in respect to the timeliness and persistence of earnings conservatism is presented in the following sub-sections.

6.3.1   Analysis of $DCE_{i,t}$ and timeliness of earnings conservatism

Table 6.3 presents main results of the statistical analysis (comprising seven regressions) of the association between $DCE_{i,t}$ and the timeliness of earnings conservatism.

As reported in Table 6.3 Column I (PS), approximate 5.90% of the variation in the dependent variable $OPI_{i,t}$ is explained by the variables of interest when the study's full 557 firm-year of observations are used. As for the regression using data from an individual observation year, the explanatory power of the test model fluctuates from a low of -1.20% (see Table 6.3 Column III) to a high of 19.60% (see Table 6.3 Column IV). *F-Values* reported in Table 6.3 suggest potential model specification concerns occur when analysing the persistence of earnings conservatism, and influence of direct custodian excellence, across a single periodic time frame (i.e. an individual year).

Table 6.3: Regression analysis of $DCE_{i,t}$ and timeliness of earnings conservatism

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.028	0.485	-0.148	-0.892	0.149	0.993	0.696	4.100	0.063	0.314	-0.065	-0.626	-0.125	-1.070
$NEGRET_{i,t}$	0.063	0.723	0.341	1.266	0.023	0.098	-0.677	-3.367[‡]	-0.068	-0.270	-0.661	-1.585	0.282	1.533
$DCE_{i,t}$	0.022	1.514	0.059	1.322	-0.044	-1.032	-0.115	-2.643[‡]	0.015	0.276	0.038	1.203	0.053	1.700[Ψ]
$NEGRET_{i,t}*DCE_{i,t}$	-0.011	-0.443	-0.064	-0.807	-0.005	-0.074	0.136	2.583[‡]	0.011	0.168	0.133	1.338	-0.049	-0.945
$RET_{i,t}$	0.123	2.652[‡]	0.209	0.473	-0.151	-0.890	-2.442	-4.257[‡]	-1.111	-1.394	0.151	2.048[†]	0.241	2.807[‡]
$RET_{i,t}*NEGRET_{i,t}$	0.147	0.671	0.894	1.103	0.554	0.729	2.594	3.925[‡]	1.075	1.145	-0.794	-0.504	-0.073	-0.192
$RET_{i,t}*DCE_{i,t}$	-0.026	-1.683[Ψ]	-0.071	-0.583	0.079	1.496	0.409	3.854[‡]	0.207	1.153	-0.046	-1.581	-0.055	-2.097[†]
$RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$	0.033	0.534	-0.077	-0.317	-0.178	-0.794	-0.393	-2.805[‡]	-0.083	-0.368	0.215	0.616	0.107	0.954
Year 2002	-0.058	-1.609												
Year 2003	-0.076	-2.130[†]												
Year 2004	-0.011	-0.319												
Year 2005	-0.067	-1.891[Ψ]												
Year 2006	-0.076	-2.125[†]												
Adjusted R^2	0.059		0.095		-0.012		0.196		0.035		0.076		0.170	
F-Value	3.931[‡]		2.239[†]		0.847		4.175[‡]		1.487		2.114[†]		3.834[‡]	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 DCE_{i,t} + \alpha_3 NEGRET_{i,t}*DCE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*DCE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*DCE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$
where*: $DCE_{i,t}$ = sum of firm i scores in time period t of $AQ_{i,t}$ and $ACE_{i,t}$. That is, $DCE_{i,t} = \sum(AQ_{i,t} + ACE_{i,t})$; see equations in Table 6.1 for definitions of other variables; and Ψ, $\dagger$, $\ddagger$ = significant at the 0.10, 0.05 and 0.01 confidence levels.

As with results reported in Table 6.1, the directionality and significance of the three variables forming the basic Basu (1997) timeliness of earnings conservatism model (i.e. $NEGRET_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) are mixed. For instance, the coefficient on $NEGRET_{i,t}$ is positive for regression involving the pooled sample (see Table 6.3 Column I), and 2002, 2003 and 2007 firm-year observations (see Table 6.3 Column II, Column III and Column VII respectively). The coefficients on $NEGRET_{i,t}$ in multiple regression reported in Table 6.3 are—regardless of whether directionality is negative or positive—only statistically significant for the regression using 2004 firm-year observations (see Table 6.3 Column IV; p<0.01).

In respect to influence of direct custodian excellence, four variables are of interest in regression results shown in Table 6.3. These are: (i) $DCE_{i,t}$; (ii) $NEGRET_{i,t}*DCE_{i,t}$; (iii) $RET_{i,t}*DCE_{i,t}$; and (iv) $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$.

In respect to $DCE_{i,t}$, the directional sign on coefficients for this variable across the seven regressions reported in Table 6.3 are predominantly positive. However, for the regression using (a) 2003 firm-year observations and (b) 2004 firm-year observations, the coefficient is negative (see Table 6.3 Column III and Column IV respectively). Of the regression in which a negative coefficient on $DCE_{i,t}$ is reported, only that using 2004 firm-year observations (see Table 6.3 Column IV) is statistically significant (i.e. p<0.01). Meanwhile, in regression where the coefficient on $DCE_{i,t}$, is positive, only that using 2007 firm-year observations is statistically significant (see Table 6.3 Column VII; p<0.10).

In regards to the two-way $NEGRET_{i,t}*DCE_{i,t}$ interaction term, the coefficient on this variable in regression reported in Table 6.3 are negative in four (of seven) cases; that is, for the pooled sample (see Table 6.3 Column I) and regression using 2002, 2003 and 2007 firm-year observations (see Table 6.3 Column II, Column III and Column VII). However, none of the four negative coefficients on the two-way $NEGRET_{i,t}*DCE_{i,t}$ interaction term in regression reported in Table 6.3 are statistically significant at conventional significance levels. In the case of regression shown in Table 6.3 where the coefficient on the two-way $NEGRET_{i,t}*DCE_{i,t}$ interaction term is positive (see Table 6.3 Column IV, Column V and Column VI), only that using 2004 firm-year observations is statistically significant (p<0.01).

As for the coefficients on the two-way $RET_{i,t}*DCE_{i,t}$ interaction term in the seven regressions reported in Table 6.3, three are positive (see Table 6.3 Column III, Column IV and Column V). Meanwhile, coefficients on the two-way $RET_{i,t}*DCE_{i,t}$ interaction term are only statistically significant in three of the seven regressions reported in Table 6.3. These are for regressions using the pooled sample (see Table 6.3 Column I; p<0.10), 2004 firm-year observations (see Table 6.3 Column IV; p<0.01) and 2007 firm-year observations (see Table 6.3 Column VII; p<0.05).

Finally, in respect to the three-way $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$ interaction term (that is, the primary variable of interest in testing the study's general hypothesis), coefficients are positive in the regression using the pooled sample, 2006 firm-year observations and 2007 firm-year observations (see Table 6.3 Column I, Column VI and Column VII respectively). Regardless of the directionality on the coefficients on the three-way $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$ interaction term in regression reported in Table 6.3, only one (i.e. in the regression using 2004 firm-year observations) is statistically significant at conventional levels (see Table 6.3 Column IV; p<0.01).

6.3.2   Analysis of $DCE_{i,t}$ and persistence of earnings conservatism

Table 6.4 reports the results of the main multivariate analysis performed to test the association between the persistence of earnings conservatism as defined by Basu (1997) and direct custodian excellence ($DCE_{i,t}$). Of the seven regressions reported in Table 6.4, one uses the pooled sample comprising 557 firm-year observations (see Table 6.4 Column I) whilst the remaining regressions use the number of observations for specific individual observation years (see Table 6.4 Columns II–VII).

As reported in Table 6.4 Column I, approximately 12.60% of the variation in the dependent variable $\Delta OPI_{i,t}$ is explained by the variables of interest when the study's full 557 firm-year of observations are used. As for the regressions using data from an individual observation year, the explanatory power of the test model fluctuates from a low of 5.90% (see Table 6.4 Column III) to a high of 91.30% (see Table 6.4 Column II).

For the regression using the pooled sample (see Table 6.4 Column I), the coefficient on $NEG\Delta OPI_{i,t-1},DCE_{i,t},\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ are positive whilst those on $NEG\Delta OPI_{i,t-1}*DCE_{i,t},$ $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*DCE_{i,t}$ are negative. Of the seven main variables of interest reported in Table 6.4 Column I, coefficients on four (i.e. $\Delta OPI_{i,t-1},\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1},\Delta OPI_{i,t-1}*DCE_{i,t.}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$) are statistically significant (i.e. p<0.01). Coefficients on the three remaining variables (i.e. $NEG\Delta OPI_{i,t-1},DCE_{i,t}$ and $NEG\Delta OPI_{i,t-1},DCE_{i,t}$) are all insignificant from zero (see Table 6.4 Column I).

Table 6.4: Regression analysis of $DCE_{i,t}$ and earnings persistence

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	-0.144	-0.185	0.011	0.064	-0.108	-0.404	0.310	1.102	-0.077	-0.408	-0.478	-2.432	-3.853	-1.264
$NEG\Delta OPI_{i,t-1}$	0.938	0.842	0.323	1.440	0.217	0.473	-0.927	-1.929$^{\Psi}$	-0.012	-0.029	0.298	1.085	4.061	0.599
$DCE_{i,t}$	0.169	0.923	0.015	0.306	0.033	0.470	-0.061	-0.796	-0.014	-0.267	0.119	2.371†	0.925	1.134
$NEG\Delta OPI_{i,t-1}*DCE_{i,t}$	-0.184	-0.612	-0.117	-1.771$^{\Psi}$	-0.047	-0.371	0.286	2.212†	0.001	0.005	-0.083	-1.097	-0.963	-0.579
$\Delta OPI_{i,t-1}$	8.305	6.801‡	-3.380	-8.866‡	0.751	1.070	0.026	0.028	-2.059	-7.430‡	10.282	19.770‡	30.579	7.091‡
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-8.615	-5.244‡	6.916	15.558‡	-0.266	-0.172	-9.798	-6.858‡	0.750	0.747	-10.520	-15.795‡	-31.633	-2.193†
$\Delta OPI_{i,t-1}*DCE_{i,t}$	-1.848	-5.469‡	0.681	5.607‡	-0.199	-1.119	-0.125	-0.513	0.573	6.843‡	-2.328	-17.690‡	-7.455	-6.240‡
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$	1.868	3.965‡	-1.862	-13.145‡	0.142	0.369	2.985	7.345‡	-0.508	-2.015†	2.109	8.889‡	7.526	1.606
Year 2002	-0.862	-1.374												
Year 2003	-0.799	-1.313												
Year 2004	-0.739	-1.216												
Year 2005	-0.939	-1.571												
Year 2006	-0.561	-0.929												
Adjusted R^2	0.126		0.913		0.059		0.483		0.650		0.882		0.414	
F-Value	7.707‡		125.559‡		1.810$^{\Psi}$		13.129‡		26.183‡		102.653‡		10.771‡	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 DCE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*DCE_{i,t} + \beta_0 \Delta OPI_{i,t-1} + \beta_1 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2 \Delta OPI_{i,t-1}*DCE_{i,t} + \beta_3 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $DCE_{i,t}$ = sum of firm i scores in time period t of $AQ_{i,t}$ and $ACE_{i,t}$. That is, $DCE_{i,t} = \sum(AQ_{i,t} + ACE_{i,t})$; see equations in Table 6.2 for definitions of other variables; and Ψ, $\dagger$, $\square$ = significant at the 0.10, 0.05 and 0.01 confidence level.

In the regression using only 2002 firm-year observations (see Table 6.4 Column II) the directionality of the coefficient on $NEG\Delta OPI_{i,t-1}, DCE_{i,t}, \Delta OPI_{i,t-1}$ and $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ are identical to the pooled sample regression (see Table 6.4 Column I). Consistent with the pooled sample regression (see Table 6.4 Column I) the coefficients on $NEG\Delta OPI_{i,t-1}$ and $DCE_{i,t}$, $\Delta OPI_{i,t-1}$ are insignificant from zero in the regression using only 2002 firm-year observations. In contrast, the coefficient on $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ is statistically significant ($p<0.10$) in the regression using only 2002 firm-year observations but it insignificant from zero when using the pooled sample (see Table 6.4 Column I). Consistent with the pooled sample regression results (see Table 6.4 Column I), the coefficients on $\Delta OPI_{i,t-1}, \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}, \Delta OPI_{i,t-1}*DCE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ are all statistically significant (i.e. $p<0.01$) in the regression using only 2002 firm-year observations. However, the directionality of the coefficients is reversed. That is, the coefficient on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ ($\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*DCE_{i,t}$) are negative (positive) in the regression using 2002 firm-year observations, but positive (negative) in the regression using the pooled sample.

The directionality of the coefficients on the seven primary variables in the regression using only 2003 firm-year observations (see Table 6.4 Column III) is identical to that reported in the regression using the pooled sample (see Table 6.4 Column I). However, unlike results reported using the pooled sample, all of the coefficients on the seven primary variables of interest are insignificant from zero in the regression using only 2003 firm-year observations.

In the case of the regression using only 2004 firm-year observations, the coefficients on $NEG\Delta OPI_{i,t-1}$, $DCE_{i,t}$, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*DCE_{i,t}$ are negative (see Table 6.4 Column IV). Of these four variables, the coefficient on $NEG\Delta OPI_{i,t-1}$ ($p<0.10$), $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ ($p<0.01$) and $NEG\Delta OPI_{i,t-1}$ ($p<0.05$) are statistically significant. For variables with positive coefficients in the regression using only 2004 firm-year observations (i.e. $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$) only two are statistically significant. This is for the two-way $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ (i.e. $p<0.05$) and three-way $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ (i.e. $p<0.01$) interaction terms respectively.

Directionality of the coefficients on the seven primary variables for the regression using only 2005 firm-year observations (see Table 6.4 Column V) are precisely the inverse of the directionality of coefficients in the regression using the pooled sample (see Table 6.4 Column I). As with results using the pooled sample, the coefficients on $\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}*DCE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ are statistically significant at conventional levels (i.e. $p<0.01$, $p<0.05$ and $p<0.01$ respectively). In contrast to Table 6.4 Column I (PS) results the coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in the regression using only 2005 firm-year

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observations (see Table 6.4 Column V) is insignificant from zero. Consistent with the regression using the pooled sample (see Table 6.4 Column I), the coefficients on $NEG\Delta OPI_{i,t-1},DCE_{i,t}$ and $NEG\Delta OPI_{i,t-1},DCE_{i,t}$ are all insignificant from zero (see Table 6.4 Column V).

For the two regressions using 2006 and 2007 firm-year observations (see Table 6.4 Column VI and Column VII) the directional sign of the coefficients on each of the seven primary variables are consistent with regression results using the pooled sample (see Table 6.4 Column I). Furthermore, as with regression results using the pooled sample, the coefficients on $\Delta OPI_{i,t-1}$ (see Table 6.4 Column VI and Column VII; p<0.01 respectively), $\Delta OPI_{i,t-1}$ *$NEG\Delta OPI_{i,t-1}$ (see Table 6.4 Column VI and Column VII; p<0.01 and p<0.05 respectively) and $\Delta OPI_{i,t-1}$ *$DCE_{i,t}$ (see Table 6.4 Column VI and Column VII; p<0.01 respectively) are statistically significant. Meanwhile, the coefficient on the three-way $\Delta OPI_{i,t-1}$*$NEG\Delta OPI_{i,t-1}$ *$DCE_{i,t}$ interaction term is statistically significant (see Table 6.4 Column VI; p<0.01) for the regression using only 2006 firm-year observations consistent with the regression using the pooled sample (see Table 6.4 Column I). The coefficient on the three-way $\Delta OPI_{i,t-1}$*$NEG\Delta OPI_{i,t-1}$ *$DCE_{i,t}$ interaction term is insignificant from zero in the regression using only 2007 firm-year observations. Finally, for the regression using only 2006 firm-year observations the $DCE_{i,t}$ coefficient is statistically significant (see Table 6.4 Column VI; p<0.05), a result in contrast with findings using the pooled sample (see Table 6.4 Column I).

6.4   Test of the GP_{AQ}, H_{1a} and H_{1b}

While previous sections presented statistical results of the effect of auditor quality and audit committee effectiveness in conjunction (termed as $DCE_{i,t}$) to earnings conservatism, this section provides statistical results of the effect of audit quality ($AQ_{i,t}$) to earnings conservatism in isolation as proposed in an earlier chapter (i.e. Chapter 3). It is anticipated that external auditors of high quality (as defined by level of independence, industry specialization and brand name) are more likely to encourage greater earnings conservatism to ensure higher quality of earnings reported. Results of regression analysis to test this hypothesis in respect to the timeliness and persistence of earnings conservatism is presented in the following sub-sections.

6.4.1   Analysis of $AQ_{i,t}$ and earnings timeliness

Table 6.5 presents empirical results of analysis testing the association of audit quality and the timeliness of earnings conservatism. Seven regressions are presented with results in Table 6.5 Column I (PS) including the full pooled sample with the remaining six for each specific year of the observations' period.

For the regression using the full 557 firm-year observations underpinning the study the Adjusted R^2 value indicates approximately only 5.40% of the variation in the dependent variable (i.e. $OPI_{i,t}$) is explained by the independent and control variables, and interaction terms (see Table 6.5 Column I). On the basis of the observation year, the lowest amount of variation in the dependent variable (i.e. $OPI_{i,t}$) explained by the independent variables and interaction term is for the regression using 2003 firm-year observations only (see Table 6.5 Column III; 3.70%). In contrast, the regression using only 2007 firm-year observations sees the highest amount of dependent variable variation explained by the regression model (see Table 6.5 Column VII; 19.10%).

As reported in Table 6.5, statistical results of the regression using pooled sample show mixed directionality of coefficients for seven main variables of the Basu (1997) modified earnings timeliness model. The coefficient of $NEGRET_{i,t}$, $NEGRET_{i,t}*AQ_{i,t}$, $RET_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$ and $RET_{i,t}*AQ_{i,t}$ are positive, whilst those on $AQ_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$ are negative. Of the seven main variables of interest reported in Table 6.5 Column I, coefficients on two (i.e. $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) are statistically significant at conventional levels (i.e. p<0.10).

In the regression using only 2002 firm-year observations (see Table 6.5 Column II), coefficients on five variables (i.e. $NEGRET_{i,t}$, $AQ_{i,t}$, $RET_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}* AQ_{i,t}$) are positive. Meanwhile, coefficients on the remaining two variables (i.e. $NEGRET_{i,t}*AQ_{i,t}$, and $RET_{i,t}*AQ_{i,t.}$) are negative. Nevertheless, of the seven regressions presented in Table 6.5, none of the coefficients are statistically significant from zero.

Unlike statistical result of regression using only 2002 firm-year observations with a majority of positive coefficients as shown in Table 6.5, fewer variables reported positive coefficients for regression using only 2003 firm-year observations. Only coefficients on three variables (i.e. $NEGRET_{i,t}*AQ_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$ and $RET_{i,t}*AQ_{i,t.}$) are positive. Unfortunately, none of the coefficients are statistically significant from zero except for $RET_{i,t}*AQ_{i,t.}$ variable which is statistically significant (p<0.05). Meanwhile, for variables with negative coefficients (i.e. $NEGRET_{i,t}$, $AQ_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$), however, all of the coefficients are statistically insignificant from zero.

Table 6.5: Regression analysis of $AQ_{i,t}$ and earnings timeliness

	Column I (PS) β	t-stat	Column II (2002) β	t-stat	Column III (2003) β	t-stat	Column IV (2004) β	t-stat	Column V (2005) β	t-stat	Column VI (2006) β	t-stat	Column VII (2007) β	t-stat
(Constant)	0.109	2.783	0.036	0.271	0.179	2.083	0.351	2.906	0.087	0.767	0.003	0.046	-0.127	-1.550
$NEGRET_{i,t}$	0.007	0.128	0.143	0.803	-0.060	-0.426	-0.248	-1.718$^\Psi$	-0.036	-0.241	-0.399	-1.657$^\Psi$	0.285	2.484†
$AQ_{i,t}$	-0.007	-0.435	0.011	0.164	-0.125	-2.466	-0.120	-2.265†	-0.004	-0.068	0.024	0.639	0.104	2.444†
$NEGRET_{i,t}*AQ_{i,t}$	0.017	0.568	-0.009	-0.096	0.050	0.599	0.111	1.644	0.026	0.335	0.182	1.560	-0.086	-1.290
$RET_{i,t}$	0.043	1.665$^\Psi$	0.079	0.230	-0.064	-0.673	-0.490	-0.772	-0.720	-1.848$^\Psi$	0.049	1.446	0.257	2.634‡
$RET_{i,t}*NEGRET_{i,t}$	0.251	1.948$^\Psi$	0.634	1.269	0.430	0.887	0.942	1.392	0.911	1.844$^\Psi$	-0.366	-0.389	-0.037	-0.184
$RET_{i,t}*AQ_{i,t}$	0.005	0.285	-0.078	-0.419	0.143	2.061†	0.107	0.491	0.353	1.665$^\Psi$	-0.006	-0.169	-0.099	-2.019†
$RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$	-0.004	-0.056	0.017	0.061	-0.332	-1.191	-0.261	-1.031	-0.233	-0.870	0.231	0.601	0.210	1.588
Year 2002	-0.058	-1.593												
Year 2003	-0.075	-2.084†												
Year 2004	-0.012	-0.350												
Year 2005	-0.066	-1.864$^\Psi$												
Year 2006	-0.076	-2.102†												
Adjusted R²	0.054		0.052		0.037		0.148		0.045		0.043		0.191	
F-Value	3.623‡		1.646		1.498		3.259†		1.642		1.615		4.272‡	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 AQ_{i,t} + \alpha_3 NEGRET_{i,t}*AQ_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*AQ_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*AQ_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$

where: $AQ_{i,t}$ = composite score index with firm *i* in time period *t* scored one (1) for each of following criteria met: (a) ratio of non-audit services to total audit fees (i.e. fees paid for audit and non-audit services) of firm *j* in time *t* is less than 0.20; (b) external auditor of firm *i* in time *t* is an industry specialist; and (c) external auditor is a *Big 4* audit firm (PWC, EY, Delloitte or KPMG). If criterion item not met then firm *i* in time period *t* scored zero (0) for that criterion. The range of the composite score index is from zero (0) to three (3); see equations in Table 6.1 for definitions of other variables; and Ψ, †, ‡= significant at the 0.10, 0.05 and 0.01 confidence levels.

With regards to the regression using only 2004 firm-year observations, the directionality of the coefficients on the seven primary variables (see Table 6.5 Column IV) is comparable to the statistical result reported in the regression using only 2003 firm-year observations (see Table 6.5 Column III). The coefficients on $NEGRET_{i,t}$, $AQ_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$ are negative, while the coefficients on the remainder of the variables (i.e. $NEGRET_{i,t}*AQ_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$ and $RET_{i,t}*AQ_{i,t.}$) are positive. However, in contrast to an insignificant result presented in the regression using only 2003 firm-year observations, the coefficients on $NEGRET_{i,t}$ (p-value < 0.10) and $AQ_{i,t}$ (p< 0.05) in the regression using only 2004 firm-year observations are statistically significant.

The directionality of the coefficients in the regression using only 2005 firm-year observations (see Table 6.5 Column V) is indifferent relative to previous two regressions (i.e. regressions using only 2003 and 2004 firm-year observations). The coefficients on three variables (i.e. $NEGRET_{i,t}*AQ_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$ and $RET_{i,t}*AQ_{i,t.}$) are negative, while the coefficients of the remainders of the variables (i.e. $NEGRET_{i,t}$, $AQ_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$) are positive. Nevertheless, the coefficients on $RET_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$ and $RET_{i,t}*AQ_{i,t}$ are statistically significant at conventional levels (see Table 6.5Column V; p<0.10). Meanwhile, the coefficients of the rest of the variables in the regression using only 2005 firm-year observations are statistically insignificant from zero.

In the regression using only 2006 firm-year observations (see Table 6.5 Column VI), the directionality of the coefficients on four variables (i.e. $AQ_{i,t,}$, $NEGRET_{i,t}* RET_{i,t}$, and $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$) are positive. Meanwhile, the coefficients on $NEGRET_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$ and $RET_{i,t}*AQ_{i,t,}$ are negative. Nevertheless, none of the coefficients is statistically significant from zero except for the coefficient on $NEGRET_{i,t}$ which is significant at conventional levels (i.e. p<0.10).

In the case of the regression using only 2007 firm-year observations (see Table 6.5 Column VII) the directionality of the coefficients on most variables (i.e. $NEGRET_{i,t,}$ $AQ_{i,t,,}$ $RET_{i,t}$, $RET_{i,t}*AQ_{i,t,}$ and $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$) are predominantly positive. In addition, the positively coefficients variables, except for the $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$ variable, are statistically significant (i.e. $NEGRET_{i,t}$ and $AQ_{i,t,}$ (p<0.01); $RET_{i,t}*AQ_{i,t,}$ (p<0.05). Meanwhile, only two variables (i.e. $NEGRET_{i,t}*AQ_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) are reported negatively coefficient. However, all negatively coefficient variables are insignificant from zero.

6.4.2 Analysis of $AQ_{i,t}$ and earnings persistence

While Table 6.5 presented statistical results of analysis testing the association of auditor quality and the timeliness of earnings conservatism, Table 6.6 presents main results

of the statistical analysis (comprising seven regressions) of the association between auditor quality and persistence of earnings conservatism.

As reported in Table 6.6 Column I, approximate 12.40% of the variation in the dependent variable $\Delta OPI_{i,t}$ is explained by the variables of interest when the study's full 557 firm-year of observations are used. As for the regressions using data from an individual observation year, the explanatory power of the test model fluctuates from a low of 11.00% (see Table 6.6 Column III) to a high of 97.70% (see Table 6.6 Column VII).

For the regression using the pooled sample (see Table 6.6 Column I), the coefficients on $NEG\Delta OPI_{i,t-1}$, $AQ_{i,t}$, $\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ are negative whilst those on $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*AQ_{i,t}$ are positive. Of the seven variables in the regression using the pooled sample, only the coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*AQ_{i,t}$ is highly significant at the 1% confidence level. The remainder, however, displayed statistically insignificant results.

In the case of the regression using only 2002 firm-year observations (see Table 6.6 Column II), across seven variables, the coefficients of four variables are statistically significant at a conventional level that is $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ ($p<0.01$); $NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}$ ($p<0.05$); and $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, ($p<0.10$). With respect to directionality of the coefficient, the coefficients on three variables (i.e. $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$) are negative. Conversely, the coefficients on $AQ_{i,t}$, $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, $\Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ are positive.

For the regression using only 2003 firm-year observations (see Table 6.6 Column III), the coefficients on two variables (i.e. $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$) of the seven variables in testing the association of earning persistence and auditor quality (in isolation) are statistically significant at the 5% confidence levels. The result is inconsistent when testing the association of earnings persistence and DCE (see Table 6.4 Column III), which reported no significant result. However, in term of directionality of the coefficient, the coefficients on $NEG\Delta OPI_{i,t-1}$, $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*AQ_{i,t}$ are negative. On the contrary, the coefficients on $AQ_{i,t}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ are positive.

Table 6.6: Regression analysis of $AQ_{i,t}$ and earnings persistence

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.927	1.605	0.104	0.711	-0.087	-0.525	0.271	1.652	-0.155	-1.192	-0.398	-2.665	1.146	3.026
$NEG\Delta OPI_{i,t-1}$	-0.083	-0.117	-0.429	-2.168[†]	-0.007	-0.023	-0.348	-1.342	0.246	0.958	0.235	1.149	-0.976	-1.140
$AQ_{i,t}$	-0.209	-0.877	0.011	0.119	0.053	0.619	-0.120	-1.304	-0.026	-0.364	0.086	1.164	-1.232	-5.895[‡]
$NEG\Delta OPI_{i,t-1}*AQ_{i,t}$	0.235	0.623	0.228	1.970[†]	-0.024	-0.159	0.261	1.952[Ψ]	-0.048	-0.369	-0.011	-0.096	1.162	2.793[‡]
$\Delta OPI_{i,t-1}$	-0.603	-1.178	-1.342	-2.243[†]	0.472	1.278	0.008	0.016	-0.776	-6.138[‡]	7.575	16.804[‡]	-17.157	-42.810[‡]
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-0.215	-0.299	-0.914	-1.446	-3.974	-2.084[†]	-1.401	-2.624[‡]	1.528	2.254[†]	-8.265	-17.989[‡]	16.490	12.195[‡]
$\Delta OPI_{i,t-1}*AQ_{i,t}$	1.518	5.183[‡]	0.040	0.136	-0.265	-1.398	-0.257	-0.942	0.868	5.868[‡]	-2.211	-14.388[‡]	17.172	56.149[‡]
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$	-1.221	-3.250[‡]	1.083	3.465[‡]	1.517	2.325[†]	1.516	5.190[‡]	-1.492	-5.464[‡]	1.981	6.870[‡]	-17.387	-18.719[‡]
Year 2002	-1.124	-1.791[Ψ]												
Year 2003	-0.959	-1.575												
Year 2004	-0.888	-1.458												
Year 2005	-0.911	-1.522												
Year 2006	-0.925	-1.529												
Adjusted R^2	0.124		0.821		0.110		0.654		0.638		0.835		0.977	
F-Value	7.556[‡]		55.405[‡]		2.591[†]		25.598[‡]		24.925[‡]		69.798[‡]		586.263[‡]	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 AQ_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*AQ_{i,t} + \beta_0 \Delta OPI_{i,t-1} + \beta_1 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2 \Delta OPI_{i,t-1}*AQ_{i,t} + \beta_3 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $AQ_{i,t}$ = composite score index with firm *i* in time period *t* scored one (1) for each of following criteria met: (a) ratio of non-audit services to total audit fees (i.e. fees paid for audit and non-audit services) of firm *j* in time *t* is less than 0.20; (b) external auditor of firm *i* in time *t* is an industry specialist; and (c) external auditor is a *Big 4* audit firm (PWC, EY, Delloitte or KPMG). If criterion item not met then firm *i* in time period *t* scored zero (0) for that criterion. The range of the composite score index is from zero (0) to three (3); see equations in Table 6.2 for definitions of other variables; and Ψ, †, □= significant at the 0.10, 0.05 and 0.01 confidence levels.

As demonstrated in Table 6.6 Column IV, the coefficients of the variable of prime interest, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ together with $\Delta OPI_{i,t-1}$ and $NEG\Delta OPI_{i,t-1}$ are highly significant (p<0.01). Meanwhile, the coefficient on $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ is also significant at the conventional level (p<0.10).Unfortunately, the coefficients on other variables are statistically insignificant from zero. In relation to the directionality of the coefficient, the coefficients on four variables are negative (i.e. $NEG\Delta OPI_{i,t-1}, AQ_{i,t}, \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and$\Delta OPI_{i,t-1}*AQ_{i,t}$). The remainder, in contrast, are positive.

In the regression using only 2005 firm-year observations (see Table 6.6 Column V), the majority of the coefficients on variables in testing earning persistence and auditor quality in isolation are statistically significant. For instance, the coefficients on $\Delta OPI_{i,t-1}, \Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ are highly significant at the 1% confidence level. In addition, the coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ is also statistically significant at the 1% confidence level. However, the coefficients on three variables in testing the Basu (1997) modified earnings persistence model (i.e. $NEG\Delta OPI_{i,t-1}, AQ_{i,t}$ and$NEG\Delta OPI_{i,t-1}*AQ_{i,t}$) are statistically insignificant. Pertaining to the directionality of the coefficient, the coefficients on $NEG\Delta OPI_{i,t-1}, \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and$\Delta OPI_{i,t-1}*AQ_{i,t}$ are positive, whilst the rest are negative.

It was revealed that the statistical result (i.e. in term significance levels for last four variables) in the regression using only 2006 firm-year observations (see Table 6.6 Column VI) is consistent with the statistical result shown in the regressions using only 2005 firm-year observations (see Table 6.6 Column V). However, instead of three variables reporting highly significant (p<0.01) results and one variable reporting statistically significant results (p<0.05) in the regression using only 2005 firm-year observations, the coefficients on all four variables (i.e. $\Delta OPI_{i,t-1}, \Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ variables) are highly significant (p<0.01) in the regression usingonly 2006 firm-year observations. The remainder of the variables remained statistically insignificant from zero. With regards to the directionality of the coefficients, the coefficients on $NEG\Delta OPI_{i,t-1}*AQ_{i,t}, \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*AQ_{i,t}$ are negative. In contrast, the coefficients on the rest of the variables are positive.

Table 6.6 Column VII presents the statistical result of testing the Basu (1997) modified earnings persistence model using only 2006 firm-year observations. The coefficients on three variables (i.e. $NEG\Delta OPI_{i,t-1}*AQ_{i,t}, \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and$\Delta OPI_{i,t-1}*AQ_{i,t}$) are positive whilst the coefficients on other variables are negative. Of the seven variables, the coefficients on the majority of the variables are highly significant at 0.01 conventional levels except for $NEG\Delta OPI_{i,t-1}$ which is statistically insignificant from zero.

6.5   Test of the GP_{ACE}, H_{2a} and H_{2b}

This section provides the main results for testing the effect of audit committee effectiveness ($ACE_{i,t}$) on earnings conservatism. It has been proposed earlier in Chapter 3 that a more effective audit committee (as defined by independence, financial expertise and diligence of sub-committee) is more likely to be able to enhance the quality of reported earnings, thus encouraging greater earnings conservatism. Results of regression analysis to test this hypothesis in respect to the timeliness and persistence of earnings conservatism is presented in the following sub-sections.

6.5.1   Analysis of $ACE_{i,t}$ and earnings timeliness

Table 6.7 presents the statistical result for the modified Basu(1997) timeliness model, testing the association of audit committee effectiveness and the timeliness of earnings conservatism. Seven regressions are presented with results in Table 6.7. Of the seven regressions reported in Table 6.7, one uses the pooled sample comprising 557 firm-year observations (see see Table 6.7 Column I) whilst the remaining regressions use the number of observations for specific individual observation years (see Table 6.7 Columns II–VII).

For the regression using the full 557 firm-year observations underpinning the study the Adjusted R^2 value indicates approximately only 7.40% of the variation in the dependent variable (i.e. $\Delta OPI_{i,t}$) is explained by the independent and control variables, and interaction terms (see Table 6.7 Column I). On the basis of the observation year, the highest amount of variation in the dependent variable (i.e. $\Delta OPI_{i,t}$) explained by the independent variables and interaction terms is for the regression using 2004 firm-year observations only (see Table 6.7 Column IV; 29.20%). In contrast, the regression using 2003 firm-year observations sees the lowest amount of dependent variable variation explained by the regression model (see Table 6.7 Column III; -0.80%).

Across seven regressions reported in Table 6.7, the coefficient on $NEGRET_{i,t}$ is statistically significant involving the 2002 ($p<0.05$) and 2006 ($p<0.10$) firm-year observations However, the coefficients on $NEGRET_{i,t}$ is statistically insignificant for the pooled sample, and the 2003, 2004, 2005 and 2007 year-observations. With regards to directionality of the coefficients, the coefficient on $NEGRET_{i,t}$ is positive for the pooled sample, and 2002, 2003, 2005 and 2006 year-observations, while negative for the 2004 and 2006 year observations.

Table 6.7: Regression analysis of $ACE_{i,t}$ and earnings timeliness

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	-0.035	-0.640	-0.340	-1.950	-0.146	-1.071	0.215	1.410	-0.006	-0.028	0.003	0.046	0.115	1.202
$NEGRET_{i,t}$	0.116	1.345	0.492	1.965[†]	0.202	0.728	-0.237	-1.339	0.014	0.049	-0.399	-1.657[Ψ]	0.141	0.733
$ACE_{i,t}$	0.073	3.004[‡]	0.224	2.410[†]	0.085	1.286	0.019	0.264	0.048	0.445	0.024	0.639	-0.021	-0.458
$NEGRET_{i,t}*ACE_{i,t}$	-0.049	-1.149	-0.208	-1.519	-0.106	-0.724	0.046	0.542	-0.006	-0.042	0.182	1.560	-0.021	-0.236
$RET_{i,t}$	0.162	4.045[‡]	0.102	0.187	0.055	0.279	-1.642	-4.463[‡]	0.048	0.054	0.049	1.446	0.098	2.293[†]
$RET_{i,t}*NEGRET_{i,t}$	0.059	0.280	0.721	0.949	-0.011	-0.012	1.441	3.228[‡]	0.051	0.049	-0.366	-0.389	0.504	1.206
$RET_{i,t}*ACE_{i,t}$	-0.071	-3.068[‡]	-0.086	-0.291	0.005	0.060	0.515	3.672[‡]	-0.080	-0.247	-0.006	-0.169	-0.029	-0.963
$RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$	0.110	1.044	-0.015	-0.035	0.040	0.082	-0.287	-1.496	0.235	0.532	0.231	0.601	-0.094	-0.501
Year 2002	-0.053	-1.484												
Year 2003	-0.070	-1.971[†]												
Year 2004	-0.007	-0.197												
Year 2005	-0.061	-1.753[Ψ]												
Year 2006	-0.065	-1.813[Ψ]												
Adjusted R^2	0.074		0.176		-0.008		0.292		-0.003		0.043		0.147	
F-Value	4.689[‡]		3.535[†]		0.895		6.351[‡]		0.962		1.615		3.381[†]	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 ACE_{i,t} + \alpha_3 NEGRET_{i,t}*ACE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*ACE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*ACE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$

where: $ACE_{i,t}$ = composite score index where firm i in time period t is scored one (1) for each of following criteria met: (a) audit committee of firm i in time period t is comprised mainly of non-executive independent directors; (b) at least one of the non-executive independent directors on the audit committee of firm i in time period t is suitably qualified and accredited to be deemed a financial accounting expert (i.e. a degree in accounting and a member of a professional accounting body); and (c) during the time period t the audit committee of firm i met five times or more. If a criterion is not met then firm i in time period t is scored zero (0) for that criterion. The range of the composite score is from zero (0) to three (3); see equations in Table 6.1 for definitions of other variables; and Ψ, †, ‡ = significant at the 0.10, 0.05 and 0.01 confidence levels.

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Unlike statistical results presented in Table 6.3 where the coefficient on $DCE_{i,t}$ (auditor quality and audit committee effectiveness in conjunction) is reported statistically significant for 2004 firm-year observations (see Table6.7 Column IV) and 2007 firm-year observations (see Table6.7 Column VII), Table 6.7 exhibited that the coefficient on $ACE_{i,t}$ (audit committee effectiveness in isolation) is statistically significant for the pooled sample and 2002 year-observation ($p<0.01$ and $p<0.05$ respectively). Pertaining to the sign of coefficient, the coefficients on $ACE_{i,t}$ are positive across seven regressions except for 2007 firm-year observations (see Table6.7 Column VII).

Inconsistent with the statistical result of the $ACE_{i,t}$ variable with two regressions (i.e. regressions using only the pooled sample and 2002 firm-year observations) which demonstrated statistically significant results, none of the coefficients on $NEGRET_{i,t}*ACE_{i,t}$ is statistically significant across seven regressions as tabulated in Table 6.7. In terms of directionality of coefficients on $ACE_{i,t}$, of the seven regressions the coefficients for five regressions (i.e. the pooled sample, and 2002, 2003, 2005 and 2007 firm-year observations) are negative. Meanwhile, the coefficients on $ACE_{i,t}$ for 2004 and 2006 firm-year observations are positive.

With regards to the $RET_{i,t}$ variable, Table 6.7 depicted that the coefficient on $RET_{i,t}$ is positive and statically significant for the pooled sample ($p<0.01$) and 2007 ($p<0.05$) firm-year observations. The significance result of the $RET_{i,t}$ variable in testing association of earnings timeliness and audit committee effectiveness (see Table 6.7) is found consistent with the significance result of the $RET_{i,t}$ variable result in testing the Basu (1997) basic earnings timeliness model as presented in Table 6.1. Apart from positive coefficients for the pooled sample and 2007 firm-year observations, four other regressions (i.e. 2002, 2003, 2005 and 2006) also reported positive coefficients. In contrast, the coefficient on $RET_{i,t}$ is negative for 2004 firm-year observations. Nevertheless, the coefficient (see Table 6.7 Column IV) is highly significant ($p<0.01$).

For the $RET_{i,t}*NEGRET_{i,t}$ variable, across seven regressions, the coefficients on $RET_{i,t}*NEGRET_{i,t}$ are positive and statistically significant ($p<0.05$) for 2004 firm-year observations (see Table 6.7 Column IV). A similar result was found in testing earnings timeliness with direct custodian excellence (combined effect of audit committee effectiveness and auditor quality) as presented in Table 6.3 Column IV). The coefficients on $RET_{i,t}*NEGRET_{i,t}$ for the remainder of the regressions (i.e. the pooled sample, and 2002, 2003, 2005, 2006 and 2007 firm-year observations) are statistically insignificant from zero. With respects to the sign of coefficients, apart from the coefficient on $RET_{i,t}*NEGRET_{i,t}$ using 2004 firm-year observations, the coefficients on $RET_{i,t}*NEGRET_{i,t}$ using the pooled

sample, and 2002, 2005 and 2007 firm-year observations also positive. Conversely, the coefficients on $RET_{i,t}*NEGRET_{i,t}$ using 2003 and 2006 firm-year observations are negative.

Another variable for testing audit committee effectiveness and earnings timeliness is the $RET_{i,t}*ACE_{i,t}$ variable. Table 6.7 depicted that the coefficient on $RET_{i,t}*ACE_{i,t}$ using 2004 firm-year observations is positive and highly significant ($p<0.01$). In addition, the coefficient on $RET_{i,t}*ACE_{i,t}$ using 2003 firm-year observationsalso reported a positive coefficient, however, it is not statistically significant from zero. In contrast, the coefficients on $RET_{i,t}*ACE_{i,t}$ for all the remaining regressionsare negative and statistically insignificant from zero except for the pooled sample ($p<0.01$).

Among other variables in the Basu (1997) modified earnings timeliness model, $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$ variable is of major interest to this research. Based on Table 6.7, none of the coefficients on the $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$ variable across seven regressions is significant at any conventional level. However, four regressions (i.e. the pooled sample, and 2003, 2005 and 2006 firm-year observations) exhibit positive coefficients for the $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$ variable. In contrast, the coefficients on $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$ variable for 2002, 2004 and 2007 firm-year observations are negative.

6.5.2   *Analysis of $ACE_{i,t}$ and earnings persistence*

While Table 6.7 presented statistical results of analysis testing of the association between audit committee effectiveness and the timeliness of earnings conservatism, Table 6.8 presents the main results of the statistical analysis (comprising seven regressions) of the association between audit committee effectiveness and persistence of earnings conservatism. Seven regressions are presented with results in Table 6.8 Column I including the full pooled sample with the remaining six for each specific year of the observations period (i.e. 2002 to 2007).

As reported in Table 6.8 Column I (PS), approximately 22.90% of the variation in the dependent variable $\Delta OPI_{i,t}$ is explained by the variables of interest when the study's full 557 firm-year observations are used. As for the regressions using data from an individual observation year, the explanatory power of the test model fluctuates from a low of 6.20% (see Table 6.8 Column III) to a high of 94.30% (see Table 6.8 Column II).

Table 6.8: Regression analysis of $ACE_{i,t}$ and earnings persistence

$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 ACE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.309	0.434	-0.119	-0.979	0.055	0.198	0.161	0.767	0.183	0.910	0.624	1.506	-2.223	-1.250
$NEG\Delta OPI_{i,t-1}$	0.748	0.762	0.261	1.493	-0.057	-0.136	0.101	0.314	-0.294	-0.860	-0.602	-0.930	2.308	0.610
$ACE_{i,t}$	0.131	0.439	0.071	1.126	-0.022	-0.165	-0.024	-0.237	-0.114	-1.137	-0.278	-1.334	0.689	0.814
$NEG\Delta OPI_{i,t-1}*ACE_{i,t}$	-0.253	-0.532	-0.149	-1.662[Ψ]	0.035	0.172	-0.037	-0.223	0.131	0.792	0.250	0.758	-0.696	-0.416
$\Delta OPI_{i,t-1}$	7.003	12.259‡	-2.488	-16.673‡	-0.403	-0.380	-0.721	-0.840	-3.005	-7.118‡	1.590	2.185†	21.192	17.078‡
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-6.434	-8.629‡	3.122	20.010‡	1.065	0.951	5.224	5.537‡	1.530	3.187‡	-1.345	-0.294	-22.836	-3.196‡
$\Delta OPI_{i,t-1}*ACE_{i,t}$	-2.630	-9.964‡	1.146	8.830‡	0.186	0.357	0.137	0.321	1.083	6.639‡	-0.470	-0.682	-7.375	-14.695‡
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$	2.025	4.914‡	-1.778	-13.286‡	-0.579	-0.933	-2.095	-4.624‡	-0.711	-2.995‡	0.009	0.004	7.776	2.186†
Year 2002	-1.173	-1.993†												
Year 2003	-0.880	-1.544												
Year 2004	-0.886	-1.547												
Year 2005	-0.895	-1.596												
Year 2006	-0.916	-1.620												
Adjusted R^2	0.229		0.943		0.062		0.686		0.650		0.445		0.762	
F-Value	14.799‡		198.105‡		1.857[Ψ]		29.426‡		26.256‡		11.877‡		45.450‡	
N	557		84		91		92		96		96		98	

Legend:

Column I, II, III, IV, V, VI and VII: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 ACE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t},$ where*: $ACE_{i,t}$* = composite score index where firm *i* in time period *t* is scored one (1) for each of following criteria met: (a) audit committee of firm *i* in time period *t* is comprised mainly of non-executive independent directors; (b) at least one of the non-executive independent directors on the audit committee of firm *i* in time period *t* is suitably qualified and accredited to be deemed a financial accounting expert (i.e. a degree in accounting and a member of a professional accounting body); and (c) during the time period *t* the audit committee of firm *i* met five times or more. If a criterion is not met then firm *i* in time period *t* is scored zero (0) for that criterion. The range of the composite score is from zero (0) to three (3); see equations in Table 6.2 for definitions of other variables; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

When effect of audit committee effectiveness on earnings persistence is examined in the regression using only the pooled sample (see Table 6.8 Column I), the coefficients on $NEG\Delta OPI_{i,t-1}*ACE_{i,t}$, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*ACE_{i,t}$ are negative. In contrast, the coefficients on other variables (i.e. $NEG\Delta OPI_{i,t-1}$, $ACE_{i,t}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$) are positive. Of variables with negative coefficients, the coefficients on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*ACE_{i,t}$ are highly significant (p<0.01) while the coefficients on $NEG\Delta OPI_{i,t-1}*ACE_{i,t}$, are statistically insignificant from zero. Meanwhile, of the variables with positive coefficients, the coefficients on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$ are statistically significant at 0.01 conventional levels. The other two variables with positive coefficients (i.e. $NEG\Delta OPI_{i,t-1}$ and $ACE_{i,t}$) conversely are not statistically significant.

With respects to the regression using only 2002 firm-year observations (see Table 6.8 Column II), the statistical result is consistent with the statistical result presented using the pooled sample model (i.e. the coefficients on $\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}*ACE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$ are highly significant (p<0.01). The only difference is the directionality of the coefficients of those variables. The coefficients on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$ are negative, whilst there are positive coefficients for $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$, and $\Delta OPI_{i,t-1}*ACE_{i,t}$. The statistical results for the remainder of the variables in the regression using only 2002 firm-year observations are found to be parallel to the statistical result shown in the regression using the pooled sample model in terms of sign of coefficient and significance of the results, except for $NEG\Delta OPI_{i,t-1}*ACE_{i,t}$ which shows a moderately significant result (p<0.10).

Unlike two previous regressions (i.e. see Table 6.8 Column I and Column II), none of the coefficients of the seven variables is statistically significant in the regression using only 2002 firm-year observations (see Table 6.8 Column III). In term of directionality of the coefficients, the coefficients of four variables (i.e. $NEG\Delta OPI_{i,t-1}$, $ACE_{i,t}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$) are negative, whilst positive for the remainder of the variables.

As depicted in Table 6.8 Column IV (2004), the coefficients on four variables (i.e. $ACE_{i,t}$, $NEG\Delta OPI_{i,t-1}*ACE_{i,t}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$) in the regression using only 2004 firm-year observations are negative. Of the variables with negative coefficients, the variable of prime interest, (i.e. $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$ variable) is found highly significant at the 1% confidence level. In contrast, of the variables with positive coefficients, only $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ is highly significant at the 1% confidence level.

For the regression using only 2005 firm-year observations (see Table 6.8 Column V), the statistical result for four variables (i.e. $\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}*ACE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$) are found consistent with the statistical result in the regressions using only 2002 firm-year observations (see Table 6.8 Column II), in term of

significance level (i.e. p<0.01) and directionality of the coefficients (i.e. positive/negative). For the rest of the variables (i.e. $NEG\Delta OPI_{i,t-1}ACE_{i,t}$ and $NEG\Delta OPI_{i,t-1}$ *$ACE_{i,t}$) the coefficients are statistically insignificant from zero. Meanwhile, in terms of directionality of the coefficients, the $NEG\Delta OPI_{i,t-1}$ and $ACE_{i,t}$ variables are reported as being negatively coefficient, while, positively coefficient for the $NEG\Delta OPI_{i,t-1}$ *$ACE_{i,t}$ variable.

In the case of the regression using only 2006 firm-year observations (see Table 6.8 Column VI), the coefficients on $\Delta OPI_{i,t-1}$, $NEG\Delta OPI_{i,t-1}$ *$ACE_{i,t}$ and $\Delta OPI_{i,t-1}$ *$NEG\Delta OPI_{i,t-1}$ *$ACE_{i,t}$ are positive. Nevertheless, only the coefficients on $\Delta OPI_{i,t-1}$ is statistically significant at the conventional level (i.e. p<0.05). Conversely, the coefficients on the remainder of the variables in the regression using only 2006 firm-year observations are negative but statistically insignificant from zero.

The result on the significance levels and directionality of the coefficients on $\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ *$NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}$ *$ACE_{i,t}$ in the regression using only 2007 firm-year observations (see Table 6.8 Column VII), is consistent with the significance levels and directionality of the coefficients for regression using pool sample. For other four variables, the coefficients on $NEG\Delta OPI_{i,t-1}$, $ACE_{i,t}$ and $\Delta OPI_{i,t-1}$ *$NEG\Delta OPI_{i,t-1}$ *$ACE_{i,t}$ are positive, while negative for $NEG\Delta OPI_{i,t-1}$ *$ACE_{i,t}$. The coefficient on the variable of prime interest, $\Delta OPI_{i,t-1}$ *$NEG\Delta OPI_{i,t-1}$ *$ACE_{i,t}$, however, is significant at the 5% confidence level.

6.6   Conclusion

This chapter focused extensively on reporting the main findings of this study. Included in the discussions were the statistical result analyses of statistical results of the Basu (1997) timeliness and persistence approaches. The discussions were broken down into four sections. The first section outlined the statistical results of the Basu's basic model. In the following sections, a new variable of $DCE_{i,t}$ was introduced into the Basu (1997) earnings conservatism model to examine the effect of direct custodian excellence (auditor quality and audit committee effectiveness in combination) and earnings conservatism. Meanwhile, section three examined the effect of auditor quality in isolation on earnings conservatism. Lastly, in the final section, the statistical results of the association of audit committee effectiveness and earnings conservatism were exhibited.

The following chapter (Chapter 7) provides sensitivity and robustness checks of this study. Several additional tests will be conducted to ascertain the credibility of the initial analysis. For the sensitivity test, earnings conservatism in Malaysia will be tested using the Ball and Shivakumar (2005) model which focuses on accruals and cash flows. In addition, various alternative measures of dependent and independent variables will be used as additional tests.

CHAPTER 7   SENSITIVITY ANALYSIS

7.1   Introduction

Chapter 6 presented the study's main multivariate analysis findings. Initial discussion in Chapter 6 highlighted multiple regression analysis results using the Basu (1997) base models of timeliness and persistence. Statistical results of analysis examining the impact of direct custodian excellence on earnings conservatism were then outlined. The end of Chapter 6 documented analysis results testing the individual effects of auditor quality and audit committee effectiveness on earnings conservatism.

Proceeding with the main analysis shown in Chapter 6, this chapter (Chapter 7) presents the major sensitivity and robustness tests conducted for this study. To determine the robustness of results using the Basu (1997) models, the approach of Ball and Shivakumar (2005)that focuses on accruals and cash flows is used as alternative proxy of earnings conservatism. Given there are different measures of earnings (e.g. earnings per share) and returns (e.g. market adjusted share return), the main tests are re-tested and presented in this chapter using these alternative measures. Conscious of potential *Big 4* audit firm biases, robustness tests are performed (and reported) whilst excluding specialist auditor and auditor brand name separately from the composite score. Regressions were also re-run to examine for any industry influence. Finally, robustness checks are performed using only the individual features of audit quality and audit committee effectiveness adopted in constructing the using composite scores index. Chapter 7 concludes with a summary of the main sensitivity and robustness test findings.

7.2   Alternative model—Ball and Shivakumar (2005)

As discussed in Chapter 4 Section 4.3, several alternative methods have been proposed to measure earnings conservatism. Consistent with prior literature, this study used the Basu (1997) models of timeliness and persistence as the primary benchmark for earnings conservatism in the main regression analysis. Another often used earnings conservatism model is that by Ball and Shivakumar (2005) that focuses on accruals and cash flows.[54]

Table 7.1 presents empirical results of tests using the Ball and Shivakumar (2005) model. Seven regressions in total are presented. Regression results presented in Table 7.1 Column I (PS) use the full pooled sample (comprising 557 firm-year observations). In contrast, results for the remaining regressions use the number of observations from each individual observation year (see Table 7.1 Column II–VII).

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[54] The Ball and Shivakumar (2005) method is based on the underlying premise that bad news is recognized and reflected in the accruals and cash flows faster than good news. Specifically, this will be reflected by higher (lower) accruals (cash flows) when economic losses are recognized.

Table 7.1: Regression analysis of Ball and Shivakumar (2005) model

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	-0.010	-0.890	-0.029	-2.009	0.004	0.121	-0.028	-1.597	-0.023	-1.447	-0.010	-0.627	-0.007	-0.445
$NEG\Delta CFO_{i,t}$	0.013	1.240	0.031	1.646	-0.013	-0.329	0.068	2.422†	-0.011	-0.517	-0.047	-2.016†	0.034	1.439
$\Delta CFO_{i,t}$	-0.452	-6.501†	-0.500	-3.986†	-0.715	-2.279†	-0.087	-0.460	-0.451	-2.107†	-0.558	-4.229†	-0.450	-4.011†
$\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}$	-0.004	-0.040	0.311	1.856Ψ	0.147	0.297	-0.067	-0.206	-0.297	-1.079	-0.688	-3.155†	0.449	2.073†
Year 2002	-0.021	-1.481												
Year 2003	-0.005	-0.385												
Year 2004	0.010	0.745												
Year 2005	-0.017	-1.219												
Year 2006	-0.005	-0.402												
Adjusted R²	0.214		0.362		0.096		0.129		0.261		0.498		0.228	
F-Value	19.923†		16.681†		4.191†		5.477†		12.204†		32.389†		10.550†	
N	557		84		91		92		96		96		98	

Legend:
Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \Delta ACC_{i,t} = \alpha_0 + \alpha_1 NEG\Delta CFO_{i,t} + \beta_0 \Delta CFO_{i,t} + \beta_1 \Delta CFO_{i,t}*NEG\Delta CFO_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$ where:$\Delta ACC_{i,t}$ = change in accruals (i.e. difference between operating income and cash flow from operating activities) of firm i in fiscal year t scaled by the book value of total assets of firm i at the beginning of the fiscal year t (i.e.$T_{i,t-1}$); $NEG\Delta CFO_{i,t}$= indicator variable with firm i scored one (1) if $\Delta CFO_{i,t}$ is negative, otherwise firm i scored zero; $\Delta CFO_{i,t}$ = change in cash flow from operating activities of firm i in fiscal year t scaled by the book value of total assets of firm i at the beginning of the fiscal year t (i.e.$TA_{i,t-1}$); $\sum\gamma_t$ = represents fiscal year indicator variables; α_k, β_k = coefficients; ε_{jt} = error term; Ψ, †, ▯ = significant at the 0.10, 0.05 and 0.01 confidence levels.

As reported in Table 7.1 Column I (PS), approximately 21.40% of the variation in the dependent variable $\Delta ACC_{i,t}$ is explained by the variables of interest. For regressions using data from an individual observation year (see Table 7.1 Column II–VII), explanatory power fluctuates from a low of 9.6% (see Table 7.1 Column III) to a high of 49.8% (see Table 7.1 Column VI).

As shown in Table 7.1, the coefficients on $NEG\Delta CFO_{i,t}$ are positive (negative) for regressions involving the pooled sample, and observation years 2002, 2004 and 2007 (2003, 2005 and 2006). However, only the coefficient on $NEG\Delta CFO_{i,t}$ for the 2004 and 2006 observation-years (see Table 7.1 Column IV and Column VI) are statistically significant at conventional levels (i.e. $p<0.05$) respectively.

In terms of $\Delta CFO_{i,t}$, coefficients on this variable are negative across all seven regressions presented in Table 7.1. Moreover, the coefficients are statistically significant (i.e. $p<0.01$ and $p<0.05$) in each regression except for the 2004 firm-year observation (see Table 7.1 Column IV) which is statistically insignificant from zero.

As for the two-way $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}$ interaction term, coefficients are negative for the pooled sample, and observation-years 2004, 2005 and 2006 (see Table 7.1 Column I, Column IV, Column V and Column VI). Of these regressions, the coefficient on $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}$ is statistically significant, only when using 2006 firm-year observations (i.e. $p<0.01$). For regressions with a positive sign on the $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}$ coefficient (see Table 7.1 Column II, Column III and Column VII), regressions using 2002 (i.e. $p<0.1$) and 2007 (i.e. $p<0.05$) firm-year observations are statistically significant at conventional levels.

Overall, Table 7.1 Column I results suggest the lack of earnings conservatism across the observation period. However, some results present in Table 7.1 Column II and VII suggest presence of earnings conservatism in some individual years (i.e. 2002 and 2007).

Despite a lack of clear evidence of earning s conservatism based on accruals and cash flows, Table 7.2 presents empirical results of analysis testing the association between direct custodian excellence and earnings conservatism based on the Ball and Shivakumar (2005) model. Again, of the seven regressions reported in Table 7.2, one uses the pooled sample comprising 557 firm-year observations (see Table 7.2 Column I) whilst the remaining regressions use the number of observations for specific individual observation years (see Table 7.2 Columns I–VII).

Table 7.2: Regression analysis of Ball and Shivakumar (2005) model—$DCE_{i,t}$

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat
(Constant)	-0.031	-1.354	-0.081	-2.243	-0.050	-0.540	-0.015	-0.273	-0.112	-2.295	-0.018	-0.382	-0.048	-1.134
$NEG\Delta CFO_{i,t}$	0.023	0.703	0.079	1.330	0.047	0.367	0.205	2.220[†]	0.044	0.719	-0.102	-1.476	0.073	0.921
$\Delta CFO_{i,t}$	-0.170	-0.920	0.341	0.918	-0.089	-0.087	0.395	0.547	1.134	2.069[†]	-0.597	-1.500	-0.288	-1.063
$\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}$	-0.849	-2.652[‡]	-0.598	-0.862	-1.758	-1.061	0.713	0.685	-2.722	-3.992[‡]	-1.184	-1.971[†]	-0.529	-0.792
$DCE_{i,t}$	0.006	1.119	0.019	1.738[Ψ]	0.015	0.606	-0.004	-0.304	0.024	1.960[†]	0.002	0.189	0.012	1.035
$DCE_{i,t}*NEG\Delta CFO_{i,t}$	-0.003	-0.365	-0.018	-1.084	-0.016	-0.468	-0.037	-1.512	-0.014	-0.850	0.016	0.832	-0.011	-0.519
$\Delta CFO_{i,t}*DCE_{i,t}$	-0.089	-1.648	-0.315	-2.388[†]	-0.175	-0.641	-0.127	-0.672	-0.447	-3.149[‡]	0.010	0.090	-0.054	-0.591
$\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*DCE_{i,t}$	0.253	2.824[‡]	0.332	1.679[Ψ]	0.569	1.247	-0.253	-0.865	0.712	3.869[‡]	0.157	0.940	0.283	1.499
Year 2002	-0.021	-1.498												
Year 2003	-0.005	-0.359												
Year 2004	0.010	0.758												
Year 2005	-0.017	-1.253												
Year 2006	-0.003	-0.230												
Adjusted R²	0.223		0.377		0.086		0.149		0.350		0.487		0.237	
F-Value	14.305[‡]		8.162[‡]		2.213[†]		3.275[‡]		8.316[‡]		13.890[‡]		5.304[‡]	
N	557		557		557		557		557		557		557	

Legend:

Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \Delta ACC_{i,t} = \alpha_0 + \beta_1 NEG\Delta CFO_{i,t} + \beta_2 \Delta CFO_{i,t} + \beta_3 \Delta CFO_{i,t}*NEG\Delta CFO_{i,t} + \beta_4 DCE_{i,t} + \beta_5 DCE_{i,t}*NEG\Delta CFO_{i,t} + \beta_6 \Delta CFO_{i,t}*DCE_{i,t} + \beta_7 \Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*DCE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $DCE_{i,t}$ = see equations in Table 6.4. For definitions of other variables, see equations in Table 7.1; and; Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

For the regression using the full 557 firm-year observations (see Table 7.2 Column I), the adjusted-R^2 value indicates approximately 22.30% of the variation in the dependent variable (i.e. $\Delta ACC_{i,t}$) is explained by the independent, control and interaction variables. For regressions using individual observation year data, the highest amount of variation in the dependent variable (i.e. $\Delta ACC_{i,t}$) explained by the independent, control and interaction variables is when using 2006 firm-year observations (see Table 7.2 Column VI; 48.70%). In contrast, the regression using 2003 firm-year observations had the lowest explanatory power based on adjusted-R^2 values (see Table 7.2 Column III; 8.60%).

In respect to the influence of direct custodian excellence on earnings conservatism based on the Ball and Shivakumar (2005) model, four variables are of interest in the Table 7.2 results. These are: (i) $DCE_{i,t}$; (ii) $DCE_{i,t}*NEG\Delta CFO_{i,t}$; (iii) $\Delta CFO_{i,t}*DCE_{i,t}$; and (iv) $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*DCE_{i,t}$.

Table 7.2 reports that the coefficient on $DCE_{i,t}$ is negative in the regression using the 2004 year observations (see Table 7.2 Column IV) but statistically insignificant from zero. The coefficient on $DCE_{i,t}$ is positive in all remaining regressions reported in Table 7.2 with the majority being statistically significant. It is only for regressions using the 2002 and 2005 year observations (see Table 7.2 Column II and Column V) that the coefficient on $DCE_{i,t}$ is statistically significant at 10% and 5% confidence levels respectively.

As for the two-way $DCE_{i,t}*NEG\Delta CFO_{i,t}$, interaction term, coefficients are negative across all regressions shown in Table 7.2 except for that based on the 2006 year-observations (see Table 7.2 Column IV). None of the coefficients, however, are statistically significant at conventional levels. Meanwhile, for the two-way $\Delta CFO_{i,t}*DCE_{i,t}$ interaction term, coefficient directionality in each regression mirrors coefficients on $DCE_{i,t}*NEG\Delta CFO_{i,t}$. In contrast to $DCE_{i,t}*NEG\Delta CFO_{i,t}$ results, however, the coefficients on $\Delta CFO_{i,t}*DCE_{i,t}$ are significant in two of the regressions(i.e. 2002 firm-year observations, Table 7.2 Column II, $p<0.05$; and, 2005 firm-year observations, Table 7.2 Column V, $p<0.01$).

Finally, for the three-way $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*DCE_{i,t}$ interaction term, coefficients are positive in all regressions besides the 2004 year observations only. Of the six regressions with positive directionality, coefficients $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*DCE_{i,t}$ for the pooled sample, 2002 and 2005 year observations are statistically significant ($p<0.01$, $p<0.10$ and $p<0.01$ respectively). Coefficients on $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*DCE_{i,t}$in the remaining regressions shown in Table 7.2 are insignificant.

Overall, Table 7.2 results imply a significant, though a somewhat limited, association between direct custodian excellence and earnings conservatism based on accruals and cash flows.

Table 7.3 presents empirical results of testing of the association between audit quality and earnings conservatism based on the Ball and Shivakumar (2005) model. Meanwhile, Table 7.4 reports the additional regression analysis examining the audit committee effectiveness–earnings conservatism (based on Ball and Shivakumar 2005) linkage. Seven regressions are presented in both Table 7.3 and Table 7.4 consistent with the format of Table 7.1 and Table 7.2.

In respect to the primary variables of interest for Table 7.3 Column I (i.e.$AQ_{i,t}$; $AQ_{i,t}*NEG\Delta CFO_{i,t}$;$\Delta CFO_{i,t}*AQ_{i,t}$; and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$), the coefficients on $\Delta CFO_{i,t}*AQ_{i,t}$ and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$ are positive but negative are on $AQ_{i,t}$ and $AQ_{i,t}*NEG\Delta CFO_{i,t}$. None of the coefficients are statistically significant. For regressions using 2002 and 2003 firm-year observations (see Table 7.3 Column II and Column III) the coefficients on $AQ_{i,t}$ and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$ ($AQ_{i,t}*NEG\Delta CFO_{i,t}$ and $\Delta CFO_{i,t}*AQ_{i,t}$) are positive (negative) but insignificant from zero. Meanwhile, when using the 2004 observation year data the coefficients on $AQ_{i,t}$, $AQ_{i,t}*NEG\Delta CFO_{i,t}$,$\Delta CFO_{i,t}*AQ_{i,t}$ and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$ are negative. Of these, only the coefficient on $AQ_{i,t}*NEG\Delta CFO_{i,t}$ is statistically significant (p<0.10). When using 2005 firm-year observations only (see Table 7.3 Column V), the coefficients on $AQ_{i,t}$ and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$ ($AQ_{i,t}*NEG\Delta CFO_{i,t}$, and $\Delta CFO_{i,t}*AQ_{i,t}$) are positive (negative). The coefficients on $\Delta CFO_{i,t}*AQ_{i,t}$ (p<0.05) and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$ (p<0.01) are statistically significant. Table 7.3 Column VI, meanwhile, reports results using 2006 year observations only. Coefficients on the four primary variables are all positive and insignificant from zero. Finally, the coefficients on $AQ_{i,t}$, $\Delta CFO_{i,t}*AQ_{i,t}$ and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$ ($AQ_{i,t}*NEG\Delta CFO_{i,t}$) are positive (negative) and insignificant from zero in the regression using only 2007 year observations (see Table 7.3 Column VII).

Table 7.3: Regression analysis of Ball and Shivakumar (2005) model—$AQ_{i,t}$

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	-0.007	-0.468	-0.048	-1.862	0.001	0.010	-0.009	-0.265	-0.053	-1.732	-0.018	-0.700	-0.023	-0.820
$NEG\Delta CFO_{i,t}$	0.021	1.038	0.033	0.958	0.045	0.605	0.152	2.746[‡]	0.002	0.041	-0.067	-1.522	0.039	0.855
$\Delta CFO_{i,t}$	-0.486	-4.134[‡]	-0.206	-0.624	-0.578	-0.920	0.000	0.000	0.332	0.831	-0.624	-2.716[‡]	-0.456	-2.656[‡]
$\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}$	-0.162	-0.789	-0.285	-0.720	-0.149	-0.155	0.851	1.074	-1.591	-3.233[‡]	-0.989	-2.255[†]	0.181	0.396
$AQ_{i,t}$	-0.002	-0.255	0.017	0.935	0.002	0.069	-0.013	-0.811	0.019	1.196	0.007	0.446	0.009	0.552
$AQ_{i,t}*NEG\Delta CFO_{i,t}$	-0.004	-0.346	-0.006	-0.286	-0.033	-0.814	-0.052	-1.757[Ψ]	-0.006	-0.281	0.010	0.418	-0.002	-0.071
$\Delta CFO_{i,t}*AQ_{i,t}$	0.024	0.353	-0.265	-0.966	-0.084	-0.247	-0.021	-0.109	-0.499	-2.354[†]	0.038	0.297	0.025	0.190
$\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t}$	0.106	0.903	0.461	1.536	0.270	0.475	-0.685	-1.479	0.873	3.207[‡]	0.188	0.784	0.140	0.525
Year 2002	-0.021	-1.514												
Year 2003	-0.006	-0.433												
Year 2004	0.010	0.732												
Year 2005	-0.017	-1.274												
Year 2006	-0.004	-0.327												
Adjusted R²	0.218		0.359		0.096		0.173		0.321		0.487		0.207	
F-Value	13.922[‡]		7.645[‡]		2.363[†]		3.713[‡]		7.428[‡]		13.880[‡]		4.606[‡]	
N	557		557		557		557		557		557		557	

Legend:
Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \Delta ACC_{i,t} = \alpha_0 + \beta_1 NEG\Delta CFO_{i,t} + \beta_2 \Delta CFO_{i,t} + \beta_3 \Delta CFO_{i,t}*NEG\Delta CFO_{i,t} + \beta_4 AQ_{i,t} + \beta_5 AQ_{i,t}*NEG\Delta CFO_{i,t} + \beta_6 \Delta CFO_{i,t}*AQ_{i,t} + \beta_7 \Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*AQ_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $AQ_{i,t}$ = see equations in Table 6.6. For definitions of other variables, see equations in Table 7.1; and; Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.4 presents the empirical results of analysis testing the association between audit committee effectiveness and earnings conservatism based on the Ball and Shivakumar (2005) approach. Across seven regressions reported in Table 7.4 the coefficients on $ACE_{i,t}$ and $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*ACE_{i,t}$ are positive. In contrast, the coefficients on $ACE_{i,t}*NEG\Delta CFO_{i,t}$ and $\Delta CFO_{i,t}*ACE_{i,t}$ are negative in all seven regressions (except for the coefficient on $ACE_{i,t}*NEG\Delta CFO_{i,t}$ in the regression using only 2006 firm-year observations).The coefficient on $ACE_{i,t}$ is statistically significant in the regressions using all observations (Table 7.4 Column I (PS), p<0.05) and 2005 firm-year observations (Table 7.4 Column V (2005), p<0.05). For the two-way $ACE_{i,t}*NEG\Delta CFO_{i,t}$ interaction term the coefficients are statistically significant (p<0.10) only in the regression using 2002 firm-year observations. In contrast, for the two-way $\Delta CFO_{i,t}*ACE_{i,t}$ interaction term the coefficients are significant from zero when using the full sample, and 2002 and 2005 firm-year observations (see Table 7.4 Column I, Column II and Column V; p<0.01, p<0.05 and p<0.01). Finally, in the case of the three-way $\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*ACE_{i,t}$ interaction term, the coefficient is significant at the 1% (5%) confidence level when using the full sample and 2005 (2007) firm-year observations.

Table 7.4: Regression analysis of Ball and Shivakumar (2005) model—$ACE_{i,t}$

	Column I (PS)		Column II (2002)		Column III (2003)		Column IV (2004)		Column V (2005)		Column VI (2006)		Column VII (2007)	
	β	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat	**β**	*t*-stat
(Constant)	-0.052	-2.276	-0.081	-2.179	-0.088	-0.915	-0.046	-0.888	-0.127	-2.861	-0.014	-0.264	-0.045	-1.024
$NEG\Delta CFO_{i,t}$	0.022	0.753	0.120	2.204[†]	-0.015	-0.114	0.070	0.857	0.060	1.057	-0.104	-1.475	0.072	1.154
$\Delta CFO_{i,t}$	0.137	0.744	0.043	0.163	0.060	0.061	0.321	0.664	1.485	2.541[†]	-0.219	-0.338	-0.114	-0.395
$\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}$	-1.027	-3.606[‡]	0.297	0.694	-1.988	-1.262	-0.405	-0.494	-2.823	-3.828[‡]	-1.426	-1.846[Ψ]	-0.800	-1.404
$ACE_{i,t}$	0.023	2.297[†]	0.029	1.619	0.045	0.999	0.014	0.476	0.053	2.532[†]	0.001	0.041	0.020	0.988
$ACE_{i,t}*NEG\Delta CFO_{i,t}$	-0.006	-0.433	-0.044	-1.706[Ψ]	0.000	-0.005	-0.006	-0.153	-0.035	-1.246	0.033	0.959	-0.020	-0.667
$\Delta CFO_{i,t}*ACE_{i,t}$	-0.331	-3.453[‡]	-0.339	-2.298[†]	-0.382	-0.820	-0.312	-0.942	-0.998	-3.537[‡]	-0.160	-0.530	-0.188	-1.240
$\Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*ACE_{i,t}$	0.551	3.938[‡]	0.116	0.578	1.040	1.412	0.258	0.542	1.326	3.623[‡]	0.411	1.068	0.672	2.358[†]
Year 2002	-0.022	-1.603												
Year 2003	-0.006	-0.456												
Year 2004	0.009	0.622												
Year 2005	-0.017	-1.234												
Year 2006	-0.005	-0.344												
Adjusted R²	0.232		0.395		0.081		0.102		0.338		0.489		0.264	
F-Value	14.980[‡]		8.728[‡]		2.128[†]		2.471[‡]		7.926[‡]		13.983[‡]		5.977[‡]	
N	557		557		557		557		557		557		557	

Legend:
Column I, II, III, IV, V, VI and VII: $OPI_{i,t} = \Delta ACC_{i,t} = \Delta ACC_{i,t} = \alpha_0 + \beta_1 NEG\Delta CFO_{i,t} + \beta_2 \Delta CFO_{i,t} + \beta_3 \Delta CFO_{i,t}*NEG\Delta CFO_{i,t} + \beta_4 ACE_{i,t} + \beta_5 ACE_{i,t}*NEG\Delta CFO_{i,t} + \beta_6 \Delta CFO_{i,t}*ACE_{i,t} + \beta_7 \Delta CFO_{i,t}*NEG\Delta CFO_{i,t}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$ where: $ACE_{i,t}$ = see equations in Table 6.8. For definitions of other variables, see equations in Table 7.1 and; Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

7.3   Alternative measures of earnings and returns

Just as earnings conservatism may be measured using alternative techniques, earnings and returns may also be measured using different approaches. As different measures of earnings and returns can be employed, and subsequently utilized in the Basu (1997) timeliness and persistence models of earnings conservatism, the main regression results and findings could be affected. Consequently, robustness and sensitivity tests are performed using alternative measures of earnings and returns.

7.3.1   *Regression analysis of earnings timeliness*

The main test results using the Basu (1997) timeliness model (see Chapter 6) defined earnings as the operating profit of firm i for the period of t deflated by the market capitalization of firm i at the end of period t-1 (i.e. $OPI_{i,t}$). Meanwhile, returns ($RRet_{i,t}$) were defined as the raw (i.e. unadjusted) share returns of firm i for time period t that is ($P_t - P_{t-1}$)/P_{t-1} where P_t is the price of shares for firm i three (3) months after the end of the fiscal year t and P_{t-1} is the price of shares for firm i nine (9) months prior to the fiscal year t. For purposes of re-testing, earnings are redefined (alternative measure denoted as $OPIS_{i,t}$)[55] as the operating profit of firm i at the end of time period t deflated by the number of outstanding common shares of firm i at the end of time period t, and divided by the price per share of firm i at end of time period t. Meanwhile, returns are redefined (and denoted as $ARet_{i,t}$) as the market-adjusted share return of firm i for time period t that is [(($P_t - P_{t-1}$)/P_{t-1}) − (($KLCI_t$ - $KLCI_{t-1}$) /$KLCI_{t-1}$)] where P_t is the share price of firm i three (3) months after the end of time period t; P_{t-1} is the price of shares for firm i nine (9) months prior to the fiscal year t); $KLCI_t$ is the value of the Kuala Lumpur Composite Index three (3) months after the end of time period t; and $KLCI_{t-1}$ is the value of Kuala Lumpur Composite Index nine (9) months prior to the fiscal year t.

Table 7.5 presents statistical results of three regressions using the basic Basu (1997) earnings timeliness base model using the alternative measures of earnings and returns. The first regression (see Table 7.5 Column I) only included the alternative earnings measure (i.e. $OPIS_{i,t}$) whilst the regression in Table 7.5 Column II only used the alternative return (i.e. $ARet_{i,t}$). The third regression (see Table 7.5 Column III) used both alternative measures.

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[55] To solve problems related to outliers, winsoring of the 1st percentile and 99th percentile of $OPIS_{i,t}$ values have been conducted.

Table 7.5: Regression analysis of earnings timeliness

	Column I		Column II		Column III	
	β	*t*-stat	β	*t*-stat	β	*t*-stat
(Constant)	0.100	3.620	0.098	3.226	0.101	3.491
$NEGRET_{i,t}$	0.025	0.856				
$NEGARet_{i,t}$			0.052	1.710$^{\Psi}$	0.045	1.577
$RET_{i,t}$	0.046	3.050‡				
$ARet_{i,t}$			0.047	2.697‡	0.044	2.669‡
$RET_{i,t}*NEGRET_{i,t}$	0.234	3.350‡				
$ARet_{i,t}*NEGARet_{i,t}$			0.273	4.220‡	0.263	4.293‡
Year 2002	-0.049	-1.433	-0.090	-2.497†	-0.080	-2.331†
Year 2003	-0.077	-2.274†	-0.037	-1.049	-0.040	-1.211
Year 2004	-0.012	-0.348	-0.014	-0.402	-0.015	-0.452
Year 2005	-0.069	-2.058†	-0.063	-1.814$^{\Psi}$	-0.066	-2.014†
Year 2006	-0.076	-2.242†	-0.053	-1.547	-0.054	-1.642
Adjusted R²	0.062		0.070		0.074	
F-Value	5.604‡		6.265‡		6.519‡	
N	557		557		557	

Legend:
Regression results based on following model: (a) Column I–$OPIS_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; (b) Column II–$OPI_{i,t} = \alpha_0 + \alpha_1 NEGARet_{i,t} + \beta_0 ARet_{i,t} + \beta_1 ARet_{i,t}*NEGARet_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; and (c) Column III–$OPIS_{i,t} = \alpha_0 + \alpha_1 NEGARet_{i,t} + \beta_0 ARet_{i,t} + \beta_1 ARet_{i,t}*NEGARet_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$. ; where: $OPIS_{i,t}$ = operating profit for time period *t* deflated by the number of outstanding common share of firm *i* three (3) months after the end of time period *t*-1of firm *i* for the time period *t*deflated by the price per outstanding common share of firm *i* nine (9) months prior to the fiscal year *t* ; $ARet_{i,t}$ = market-adjusted share return of firm *i* for time period *t* that is $[((P_t - P_{t-1})/P_{t-1}) - ((KLCI_t - KLCI_{t-1})/KLCI_{t-1})]$ where P_t is the share price of firm *i* three (3) months after the end of time period *t* and P_{t-1} is the price of shares for firm *i* nine (9) months prior to the fiscal year *t*; $NEGARet_{i,t}$= indicator variable with firm *i* scored one (1) if $ARet_t$ is negative, otherwise firm *i* scored zero (0); For definitions of other variables, see equations in Table 6.1 and;Ψ, $\dagger$, $\square$ = significant at the 0.10, 0.05 and 0.01 confidence levels.

As reported in Table 7.5 Column I, Column II and Column III, directionality of the coefficients on three variables forming the basic Basu (1997) timeliness of earnings conservatism model are consistent withthe main statistical results (see Table 6.3 Column I). Furthermore, the significance of the coefficients is generally similar to the main statistical results. The only variation of note is the coefficient on $NEGRET_{i,t}$ is statistically insignificant for the main finding (see Table 6.3 Column I) but statistically significant at the 10% confidence level when returns are measured using a market-adjusted approach that is $ARet_{i,t}$ (see Table 7.5 Column II). Regardless, Table 7.5 results also support the existence of the timeliness of earnings conservatism amongst Malaysian publicly listed firms despite the use of alternative measures of earnings and return.

Table 7.6 presents empirical results of analysis retesting the association of direct custodian excellence and the timeliness of earnings conservatism using alternative measures of earnings and returns.

Table 7.6: Regression analysis of $DCE_{i,t}$ and earnings timeliness

	Column I		Column II		Column III	
	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.027	0.492	0.071	1.078	0.065	1.041
$NEGRET_{i,t}$	0.064	0.776				
$NEGARet_{i,t}$			0.005	0.057	0.008	0.099
$DCE_{i,t}$	0.023	1.674$^\Psi$	0.010	0.570	0.013	0.754
$NEGRET_{i,t}*DCE_{i,t}$	-0.013	-0.577				
$NEGARet_{i,t}*DCE_{i,t}$			0.012	0.468	0.009	0.371
$RET_{i,t}$	0.121	2.755‡				
$ARet_{i,t}$			0.112	2.069†	0.112	2.182†
$RET_{i,t}*NEGRET_{i,t}$	0.149	0.717				
$ARet_{i,t}*NEGARet_{i,t}$			0.121	0.605	0.104	0.549
$RET_{i,t}*DCE_{i,t}$	-0.026	-1.805$^\Psi$				
$ARet_{i,t}*DCE_{i,t}$			-0.023	-1.271	-0.024	-1.396
$RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$	0.029	0.499				
$ARet_{i,t}*NEGARet_{i,t}*DCE_{i,t}$			0.049	0.882	0.051	0.972
Year 2002	-0.048	-1.402	-0.090	-2.495†	-0.080	-2.328†
Year 2003	-0.079	-2.318†	-0.040	-1.127	-0.043	-1.296
Year 2004	-0.012	-0.347	-0.015	-0.437	-0.016	-0.489
Year 2005	-0.069	-2.077†	-0.063	-1.817$^\Psi$	-0.067	-2.025†
Year 2006	-0.077	-2.259†	-0.054	-1.561	-0.055	-1.667$^\Psi$
Adjusted R²	0.063		0.071		0.074	
F-Value	4.127‡		4.524‡		4.727‡	
N	557		557		557	

Legend:
Column I, II and III: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 DCE_{i,t} + \alpha_3 NEGRET_{i,t}*DCE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*DCE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*DCE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $DCE_{i,t}$ = see equations in Table 6.3. For definitions of other variables, see equations in Table 7.5 and; Ψ, $\dagger$, $\square$ = significant at the 0.10, 0.05 and 0.01 confidence levels.

In respect to Table 7.6 Column I (where $OPIS_{it}$ is used as the dependent variable rather than OPI_{it}), directionality and significance of the coefficients on each variable are generally consistent with the main results (see Table 6.4 Column I). The only notable variation is the coefficient on $DCE_{i,t}$ is statistically significant (i.e. p<0.10) when $OPIS_{it}$ is the dependent variable but insignificant when OPI_{it} is used. As for regressions using an alternative returns measure (see Table 7.6 Column II and Column III), coefficients on the majority of the variables remained the same as those presented in Table 6.3 Column I. A minor variation is associated with the coefficients on $NEGARet_{i,t}*DCE_{i,t}$ (versus $NEGRET_{i,t}*DCE_{i,t}$ in Table

6.4 Column I) that are positive but insignificant from zero compared to negative and insignificant from zero in the main test results. Consistent with Table 6.4 Column I, the coefficients on the main variable of interest (i.e. the three-way interaction term) are positive and insignificant from zero in the three regressionsshown in Table 7.6. Thus, despite using alternative measures for earnings and returns the Table 7.6 findings reaffirm the Table 6.4 Column I result implying lack of a significant association between direct custodian effectiveness and the timeliness of earnings conservatism.

Table 7.7 presents statistical results of tests of the association between auditor quality and earnings timeliness using alternative measures of earnings and returns.

Table 7.7: Regression analysis of $AQ_{i,t}$ and earnings timeliness

	Column I		Column II		Column III	
	β	*t*-stat	β	*t*-stat	β	*t*-stat
(Constant)	0.103	2.779	0.128	2.982	0.119	2.932
$NEGRET_{i,t}$	0.011	0.208				
$NEGARet_{i,t}$			0.008	0.144	0.014	0.275
$AQ_{i,t}$	-0.002	-0.118	-0.021	-1.036	-0.013	-0.678
$NEGRET_{i,t}*AQ_{i,t}$	0.009	0.331				
$NEGARet_{i,t}*AQ_{i,t}$			0.029	0.987	0.021	0.764
$RET_{i,t}$	0.043	1.749[Ψ]				
$ARet_{i,t}$			0.030	1.045	0.033	1.197
$RET_{i,t}*NEGRET_{i,t}$	0.250	2.047[†]				
$ARet_{i,t}*NEGARet_{i,t}$			0.297	2.647[‡]	0.293	2.650[‡]
$RET_{i,t}*AQ_{i,t}$	0.002	0.157				
$ARet_{i,t}*AQ_{i,t}$			0.013	0.729	0.009	0.522
$RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$	-0.011	-0.158				
$ARet_{i,t}*NEGARet_{i,t}*AQ_{i,t}$			-0.018	-0.293	-0.020	-0.336
Year 2002	-0.048	-1.386	-0.087	-2.416[†]	-0.077	-2.253[†]
Year 2003	-0.078	-2.273[†]	-0.035	-1.006	-0.039	-1.181
Year 2004	-0.013	-0.380	-0.014	-0.390	-0.016	-0.469
Year 2005	-0.069	-2.052[†]	-0.061	-1.744[Ψ]	-0.065	-1.976[†]
Year 2006	-0.076	-2.240[†]	-0.050	-1.425	-0.051	-1.550
Adjusted R²	0.056		0.067		0.069	
F-Value	3.760[‡]		4.304[‡]		4.451[‡]	
N	557		557		557	

Legend:
Column I, II and III: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 AQ_{i,t} + \alpha_3 NEGRET_{i,t}*AQ_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*AQ_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*AQ_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $AQ_{i,t}$ = see equations in Table 6.5.For definitions of other variables, see equations in Table 7.5;and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

With regards to the directionality of the coefficients on the prime variables of interest in Table 7.7 Column I, Column II and Column III, these are comparable and

consistent with the main associated statistical results reported in Table 6.5 Column I (PS). In terms of the significance of the coefficients, these are also highly comparable with Table 6.5 Column I. For example, for the main variable of concern (i.e. the three-way interaction terms) the coefficient on $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$ ($ARet_{i,t}*NEGARet_{i,t}*AQ_{i,t}$) in Table 7.7 Column I (Column II and Column II) is negative and statistically insignificant from zero as per Table 6.5 Column I findings. The results indicate the lack of association between auditor quality and the timeliness of earnings conservatism highlighted in Table 6.5 Column I is not affected by use of alternative measures of earnings and returns.

Table 7.8 presents statistical results from the Basu (1997) timeliness model testing the association of audit committee effectiveness and earnings timeliness using alternative measures of earnings and returns than those presented in the main associated results in Table 6.7 Column I.

As reported in Table 7.8 Column I, directionality and significance of the coefficient on each variable is consistent with that of the main associated results (see Table 6.7 Column I). For Table 7.8 Column II and Column III results, the directionality and significance on the coefficients yield some minor variation relative to Table 6.7 Column I results.For instance, the coefficient on $ARet_{i,t}*NEGARet_{i,t}$is negative in Table 7.8 Column II and Column III results rather than positive as in the Table 6.7 Column I results. Of major significance, however, is the difference associated with the three-way interaction term $ARet_{i,t}*NEGARet_{i,t}*ACE_{i,t}$. In Table 7.8 Column II and Column III results, the coefficients on $ARet_{i,t}*NEGARet_{i,t}*ACE_{i,t}$ are negative and significant (i.e. $p<0.01$). In contrast, for the main finding the coefficient on the corresponding three-way interaction term is positive and insignificant. Table 7.8 Column II and Column III results suggest an association between audit committee effectiveness and timeliness of earnings whereas Table 6.7 Column I results infer no such association. Thus, any audit committee effectiveness–timeliness of earnings conservatism association may be tenuous and dependent on the measure of returns.

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Table 7.8: Regression analysis of $ACE_{i,t}$ and earnings timeliness

	Column I β	Column I t-stat	Column II β	Column II t-stat	Column III β	Column III t-stat
(Constant)	-0.016	-0.319	-0.018	-0.296	0.007	0.125
$NEGRET_{i,t}$	0.094	1.151				
$NEGARet_{i,t}$			0.059	0.691	0.037	0.502
$ACE_{i,t}$	0.064	2.806[‡]	0.067	2.357[†]	0.055	2.185[†]
$NEGRET_{i,t}*ACE_{i,t}$	-0.041	-1.019				
$NEGARet_{i,t}*ACE_{i,t}$			-0.012	-0.291	-0.004	-0.103
$RET_{i,t}$	0.152	4.003[‡]				
$ARet_{i,t}$			0.175	3.887[‡]	0.161	3.805[‡]
$RET_{i,t}*NEGRET_{i,t}$	0.045	0.223				
$ARet_{i,t}*NEGARet_{i,t}$			-0.070	-0.372	-0.055	-0.322
$RET_{i,t}*ACE_{i,t}$	-0.067	-3.040[‡]				
$ARet_{i,t}*ACE_{i,t}$			-0.084	-3.072[‡]	-0.077	-2.993[‡]
$RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$	0.111	1.111				
$ARet_{i,t}*NEGARet_{i,t}*ACE_{i,t}$			0.195	2.106[†]	0.182	2.156[†]
Year 2002	-0.044	-1.293	-0.086	-2.394[†]	-0.076	-2.234[†]
Year 2003	-0.073	-2.163[†]	-0.035	-1.009	-0.040	-1.206
Year 2004	-0.008	-0.240	-0.010	-0.296	-0.012	-0.356
Year 2005	-0.065	-1.947[Ψ]	-0.059	-1.701[Ψ]	-0.063	-1.930[Ψ]
Year 2006	-0.066	-1.966[†]	-0.045	-1.324	-0.045	-1.391
Adjusted R²	0.075		0.086		0.088	
F-Value	4.758[‡]		5.367[‡]		5.469[‡]	
N	557		557		557	

Legend:
Column I, II and III: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 ACE_{i,t} + \alpha_3 NEGRET_{i,t}*ACE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*ACE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$ *where:* $ACE_{i,t}$ = see equations in Table 6.7.For definitions of other variables, see equations in Table 7.5;and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

7.3.2 Regression analysis of earnings persistence

Additional robustness and sensitivity tests using the Basu (1997) persistence of earnings conservatism model are performed using an alternative measure of earnings. Specifically, for the main test results reported in Table 6.4 Column I, Table 6.6 Column I and Table 6.6 Column I, earnings is defined as the change in operating profit of firm *i* for the period of *t-1* to *t* deflated by the market capitalization of firm *i* at the end of period *t-2* and *t-1* (i.e.$\Delta OPI_{i,t}$). The revised measure of earnings (denoted as $\Delta OPIS_{i,t-1}$) is defined as change in operating profit deflated by the number of outstanding common shares of firm *i* for the period of *t-1* to *t* divided by change in share price of firm *i* at the end of period *t-2* and *t-1*. Statistical results of regression using $\Delta OPIS_{i,t}$ are presented in Table 7.9 Column I, Column II, Column III and Column IV. Table 7.9 Column I shows the results of the Basu (1997) base

model for persistence of earnings conservatism, with Column II concentrating on the influence of direct custodian excellence. Meanwhile, Table 7.9 Column III (Column IV) considers the influence of auditor quality (audit committee effectiveness).

As shown in Table 7.9 Column I, the coefficients on $NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}$ are positive, while the coefficients on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ are negative. Directionality of the coefficients is consistent with results presented in Table 6.2 Column I (PS). As for significance levels, results are mixed. Both the coefficients on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ are significant (i.e. $p<0.01$ and $p<0.05$ respectively) when the alternative measure $\Delta OPIS_{it}$ is used. Meanwhile $NEG\Delta OPI_{i,t-1}$ is statistically insignificant from zero. These results, however, are highly similar to the main result presented in Chapter 6. The only noted variation is the coefficients on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Chapter 6 results were statistically significant at the 1% confidence level instead of 10% confidence level in Table 7.9 Column I. Table 7.9 Column II results show that across the seven variables of interest the coefficients on $NEG\Delta OPIS_{i,t-1}$, $DCE_{i,t}$, $NEG\Delta OPIS_{i,t-1}*DCE_{i,t}$ and $OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*DCE_{i,t}$ are negative. Directionality of the coefficients on the seven variables of interest in Table 7.9 Column II is, in the main, contrary to Table 6.4 Column I (PS). Specifically, only the signs on $\Delta OPIS_{i,t-1}$ and $NEG\Delta OPIS_{i,t-1}*DCE_{i,t}$ in Table 7.9 Column II is in the same direction for the corresponding variables (i.e. $\Delta OPI_{i,t-1}$ and $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$) in Table 6.4 Column I (PS). Aside from affecting directionality, use of the alternative measure of earnings also has an impact on the significance of the coefficients. The significance of the coefficients on $NEG\Delta OPIS_{i,t-1}*DCE_{i,t}$ and $\Delta OPIS_{i,t-1}*DCE_{i,t}$ in Table 7.9 Column II are similar to the corresponding variables (i.e. $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ and $\Delta OPI_{i,t-1}*DCE_{i,t}$) in Table 6.4 Column I (PS). Meanwhile, the coefficients on $\Delta OPIS_{it}$ and $OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*DCE_{i,t}$ are insignificant in Table 7.9 Column II results though significant at 1% confidence level for the corresponding ΔOPI_{it} and $OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ variables in Table 6.4 Column I (PS). Finally, the coefficient on $NEG\Delta OPIS_{i,t-1}*\Delta OPIS_{i,t-1}$ is significant at 1% confidence level in Table 7.9 Column II results but insignificant from zero for the corresponding $NEG\Delta OPI_{i,t-1}*\Delta OPI_{i,t-1}$ variable in Table 6.4 Column I (PS).

Table 7.9: Regression analysis of earnings persistence

	Column I		Column II		Column III		Column IV	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.194	0.886	0.324	0.933	0.286	1.063	0.150	0.429
$NEG\Delta OPIS_{i,t-1}$	0.868	1.466	-0.628	-0.952	-0.516	-0.760	0.191	0.262
$\Delta OPIS_{i,t-1}$	0.715	23.549‡	0.075	0.417	-0.272	-1.625	0.695	4.820‡
$\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}$	-0.274	-1.708$^{\Psi}$	0.380	3.049‡	0.156	0.565	-0.494	-2.591‡
$DCE_{i,t}$			-0.024	-0.315				
$NEG\Delta OPIS_{i,t-1}*DCE_{i,t}$			-1.374	-4.728‡				
$\Delta OPIS_{i,t-1}*DCE_{i,t}$			0.155	1.666$^{\Psi}$				
$\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*DCE_{i,t}$			-0.176	-0.578				
$AQ_{i,t}$					-0.005	-0.053		
$NEG\Delta OPIS_{i,t-1}*AQ_{i,t}$					-0.322	-0.926		
$\Delta OPIS_{i,t-1}*AQ_{i,t}$					0.106	0.405		
$\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*AQ_{i,t}$					0.234	0.948		
$ACE_{i,t}$							0.067	0.483
$NEG\Delta OPIS_{i,t-1}*ACE_{i,t}$							0.693	1.776$^{\Psi}$
$\Delta OPIS_{i,t-1}*ACE_{i,t}$							-0.320	-2.101†
$\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*ACE_{i,t}$							0.327	2.064†

Table 7.9: Regression analysis of earnings persistence (*continued*)

	Column I		Column II		Column III		Column IV	
	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat
Year 2002	-0.213	-0.670	-0.544	-1.829 [Ψ]	-0.231	-0.748	-0.236	-0.741
Year 2003	-0.621	-2.001	-0.076	-0.257	-0.568	-1.887 [Ψ]	-0.642	-2.073 [†]
Year 2004	-0.183	-0.590	-0.035	-0.118	-0.105	-0.351	-0.116	-0.375
Year 2005	-0.149	-0.487	-0.186	-0.636	-0.094	-0.314	-0.151	-0.496
Year 2006	-0.103	-0.337	0.324	0.933	-0.176	-0.596	-0.134	-0.439
Adjusted R²	0.517		0.561		0.550		0.523	
F-Value	75.283 [‡]		65.612 [‡]		57.518 [‡]		51.710 [‡]	
N	557		557		557		557	

Legend:

Regression results based on following model: (a) Column I—$\Delta OPIS_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPIS_{i,t-1} + \beta_0 \Delta OPIS_{i,t-1} + \beta_1 \Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1} + \sum\gamma_t + \varepsilon_{i,t}$; (b) Column II—$OPIS_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPIS_{i,t-1} + \alpha_2 DCE_{i,t} + \alpha_3 NEG\Delta OPIS_{i,t-1}*DCE_{i,t} + \beta_0 \Delta OPIS_{i,t-1} + \beta_1 \Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1} + \beta_2 \Delta OPIS_{i,t-1}*DCE_{i,t} + \beta_3 \Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*DCE_{i,t} + \sum\gamma_t + \varepsilon_{i,t;}$ (c) Column III—$OPIS_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPIS_{i,t-1} + \alpha_2 AQ_{i,t} + \alpha_3 NEG\Delta OPIS_{i,t-1}*AQ_{i,t} + \beta_0 \Delta OPIS_{i,t-1} + \beta_1 \Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1} + \beta_2 \Delta OPIS_{i,t-1}*AQ_{i,t} + \beta_3 \Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*AQ_{i,t} + \sum\gamma_t + \varepsilon_{i,t;}$ (d) Column IV—$OPIS_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPIS_{i,t-1} + \alpha_2 ACE_{i,t} + \alpha_3 NEG\Delta OPIS_{i,t-1}*ACE_{i,t} + \beta_0 \Delta OPIS_{i,t-1} + \beta_1 \Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1} + \beta_2 \Delta OPIS_{i,t-1}*ACE_{i,t} + \beta_3 \Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t,}$ where: $\Delta OPIS_{i,t}$ = change in operating profit deflated by the number of outstanding common shares of firm *i* for the period of *t* divided by change in share price of firm *i* at the end of *t-1*; $\Delta OPIS_{i,t-1}$ = change in operating profit deflated by the number of outstanding common shares of firm *i* for the period of *t-1* divided by change in share price of firm *i* at the end of period *t-2*; See definitions of $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$ in *Table 6.4, 6.6 and 6.8*. For definitions of other variables, see equations in Table 6.2and; Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.9 Column III shows directionality and significance of coefficients on variables forming the basic Basu (1997) persistence of earnings conservatism model (i.e. $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$) are similar to corresponding variables in Table 6.6 Column I. The only difference of note is the coefficient on $\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}$ is positive in Table 7.9 Column III, whereas the corresponding variable (i.e. $\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}$) in Table 6.6 Column I is negative. As for variables including the measure for auditor quality (i.e. $AQ_{i,t}$, $NEG\Delta OPIS_{i,t-1}*AQ_{i,t}$, $\Delta OPIS_{i,t-1}*AQ_{i,t}$ and $OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*AQ_{i,t}$), coefficients on all four variables are statistically insignificant from zero. This is partially inconsistent with the corresponding Table 6.6 Column I results where coefficients on $OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ are significant at the 1% confidence level. Also, in term of directionality for these four variables, the coefficients $NEG\Delta OPIS_{i,t-1}*AQ_{i,t}$, and $\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*AQ_{i,t}$ are negative and positive in Table 7.9 Column III results but positive and negative for the corresponding variables (i.e. $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$) in Table 6.6 Column I.

Finally, Table 7.9 Column IV indicates the directionality of coefficients on all seven variables is mainly consistent with corresponding variables in Table 6.8 Column I. However, the coefficient on $NEG\Delta OPIS_{i,t-1}*ACE_{i,t}$ ($\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*ACE_{i,t}$) is positive (negative) in Table 7.9 Column IV but negative (positive) for $NEG\Delta OPI_{i,t-1}*ACE_{i,t}$ ($\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$) in the corresponding Table 6.8 Column I. As for the significance of the coefficients in Table 7.9 Column IV relative to Table 6.8 Column I, there are three differences. Specifically, the coefficients on $NEG\Delta OPIS_{i,t-1}*ACE_{i,t}$, $\Delta OPIS_{i,t-1}*ACE_{i,t}$ and $\Delta OPIS_{i,t-1}*NEG\Delta OPIS_{i,t-1}*ACE_{i,t}$ in Table 7.9 Column IV are significant at 10%, 5% and 5% confidence levels. However, for the corresponding variables in Table 6.8 Column I (i.e. $NEG\Delta OPI_{i,t-1}*ACE_{i,t}$, $\Delta OPI_{i,t-1}*ACE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$) these are non-significant and significant at 1% and 1% confidence levels respectively.

Overall, the use of an alternative measure of earnings appears to have an impact on the association between the persistence of earnings conservatism and (a) direct custodian excellence, (b) auditor quality, and (c) audit committee effectiveness. Consequently, caution in interpreting the main results reported in Table 6.2, Table 6.4, Table 6.6 and Table 6.8 applies.

7.4   Brand name/specialist

Prior research across various lines of enquiry in the finance and accounting literature highlight the possible differential in engaging a highly reputed audit firm versus a less reputable counterpart. Typically, many researchers have drawn a distinction between the *Big*

4 audit firms and *Non-Big 4* firms.[56]As a further robustness check of the main findings, regression is performed again after: (a) excluding separately the measure for auditor brand name from the composite score to minimize *Big 4* bias; and (b) excluding specialist auditor rather than auditor brand name.

7.4.1 Regression analysis of earnings timeliness

Table 7.10 presents the empirical results using a revised composite score for direct custodian excellence (countering for any brand name and specialist biases) in respect to the timeliness of earnings conservatism. Two regressions are presented: (i) regression with brand name excluded (see Table 7.10 Column I); and (ii) regression with specialist excluded (see Table 7.10 Column II).

As shown in Table 7.10 Column I and Column II, the directionality and significance levels of the coefficients on the three variables forming the basic Basu (1997) timeliness of earnings model (i.e. $NEGRET_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) are consistent with the main results (see Table 6.3 Column I).

In terms of the influence of direct custodian excellence with brand name excluded (see Table 7.10 Column I), directionality of the coefficients on four variables of interest (i.e. $DCEBNEX_{i,t}$,$NEGRET_{i,t-1}*DCEBNEX_{i,t}$, $RET_{i,t-1}*DCEBNEX_{i,t}$ and $RET_{i,t-1}*NEGRET_{i,t-1}*DCEBNEX_{i,t}$) is consistent with Table 6.3 Column I results. In terms of the significance of the coefficients, meanwhile, some variations are found. For instance, the coefficient on $DCEBNEX_{i,t}$ is significant at 10% confidence level (see Table 7.10 Column I), whereas the coefficient on $DCE_{i,t}$ in the main results (see Table 6.3 Column I) is statistically insignificant. Furthermore, the coefficient on $RET_{i,t-1}*DCE_{i,t}$ in the main findings reported in Table 6.3 Column I is statistically significant at 10% confidence level, but the coefficient on the corresponding variable (i.e.$RET_{i,t-1}*DCEBNEX_{i,t}$) in the results shown in Table 7.10 Column Iis statistically significant at the 1% confidence level.

The regression results performed after excluding industry specialists (see Table 7.10 Column II) also yields coefficients on the four direct custodian variables of interest (i.e. $DCESPEX_{i,t}$, $NEGRET_{i,t-1}*DCESPEX_{i,t}$, $RET_{i,t-1}*DCESPEX_{i,t}$ and $RET_{i,t-1}*NEGRET_{i,t-1}*DCESPEX_{i,t}$) with the same directionality for coefficients on the associated variables in the main results reported in Table 6.3 Column I (PS). Again, some variations in terms of significance are noted. Specifically, the coefficient on $DCESPEX_{i,t}$ ($RET_{i,t-1}*DCESPEX_{i,t}$) is significant at the 5% (5%) confidence level whilst the corresponding variable from the main

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[56]The terms *Big 8, Big 6* or *Big 5* have also been used at alternative times. However, due to consolidation within the audit industry and major accounting/corporate scandals, the numbers of highly reputable audit firms have diminished from eight to the current level of four. The *Big 4* terms has been constant across the timeframe of this study. Consequently, to avoid confusion this term is applied here.

results–that is, $DCE_{i,t}$ ($RET_{i,t-1}*DCE_{i,t}$) is not statistically significant (significant at 10% confidence level).

Table 7.10: Regression analysis of $DCE_{i,t}$ and earnings timeliness

	Column I: *Brand Name Excluded*		Column II: *Specialist Excluded*	
	β	*t*-stat	*β*	*t*-stat
(Constant)	0.018	0.302	-0.020	-0.324
$NEGRET_{i,t-1}$	0.088	0.996	0.120	1.255
$RET_{i,t-1}$	0.167	3.529[‡]	0.157	3.350[‡]
$RET_{i,t-1}*NEGRET_{i,t-1}$	0.113	0.493	0.250	1.025
$DCEBNEX_{i,t}$	0.033	1.827[Ψ]		
$NEGRET_{i,t-1}*DCEBNEX_{i,t}$	-0.024	-0.821		
$RET_{i,t-1}*DCEBNEX_{i,t}$	-0.052	-2.637[‡]		
$RET_{i,t-1}*NEGRET_{i,t-1}*DCEBNEX_{i,t}$	0.058	0.736		
$DCESPEX_{i,t}$			0.043	2.281[†]
$NEGRET_{i,t-1}*DCESPEX_{i,t}$			-0.034	-1.118
$RET_{i,t-1}*DCESPEX_{i,t}$			-0.046	-2.417[†]
$RET_{i,t-1}*NEGRET_{i,t-1}*DCESPEX_{i,t}$			0.010	0.122
Year 2002	-0.058	-1.606	-0.055	-1.521
Year 2003	-0.075	-2.096[†]	-0.073	-2.047[†]
Year 2004	-0.011	-0.319	-0.009	-0.262
Year 2005	-0.066	-1.884[Ψ]	-0.063	-1.805[Ψ]
Year 2006	-0.074	-2.087[†]	-0.073	-2.050[†]
Adjusted R²	0.065		0.068	
F-Value	4.228[‡]		4.369[‡]	
N	557		557	

Legend:
Regression results based on following model: (a) Column I—$RET_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t-1} + \alpha_2 DCEBNEX_{i,t} + \alpha_3 NEGRET_{i,t-1}*DCEBNEX_{i,t} + \beta_0 RET_{i,t-1} + \beta_1 RET_{i,t-1}*NEGRET_{i,t-1} + \beta_2 RET_{i,t-1}*DCEBNEX_{i,t} + \beta_3 RET_{i,t-1}*NEGRET_{i,t-1}*DCEBNEX_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; (b) Column II—$RET_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t-1} + \alpha_2 DCESPEX_{i,t} + \alpha_3 NEGRET_{i,t-1}*DCESPEX_{i,t} + \beta_0 RET_{i,t-1} + \beta_1 RET_{i,t-1}*NEGRET_{i,t-1} + \beta_2 RET_{i,t-1}*DCESPEX_{i,t} + \beta_3 RET_{i,t-1}*NEGRET_{i,t-1}*DCESPEX_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; where: $DCEBNEX_{i,t}$= sum of firm i scores in time period t of $AQ_{i,t}$ and $ACE_{i,t}$. That is, $DCE_{i,t} = \sum(AQ_{i,t} + ACE_{i,t})$ where score from brand name feature is excluded from $AQ_{i,t}$ total score; $DCESPEX_{i,t}$= sum of firm i scores in time period t of $AQ_{i,t}$ and $ACE_{i,t}$. That is, $DCE_{i,t} = \sum(AQ_{i,t} + ACE_{i,t})$ where score from specialist feature is excluded from $AQ_{i,t}$ total score; For definitions of other variables, see equations in Table 6.3 and; Ψ, †, ‡ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.11 reports results of tests performed again examining the association between auditor quality and timeliness of earnings conservatism but after (a) brand name is excluded (see Table 7.1I Column I); and (b) industry specialist excluded (see Table 7.11 Column II).

Table 7.11: Regression analysis of $AQ_{i,t}$ and earnings timeliness

	Column I: *Brand Name Excluded*		Column II: *Specialist Excluded*	
	β	*t*-stat	β	*t*-stat
(Constant)	0.121	3.281	0.106	2.582
$NEGRET_{i,t-1}$	0.012	0.249	0.017	0.288
$RET_{i,t-1}$	0.054	$2.142^{\dagger}$	0.045	1.780^{Ψ}
$RET_{i,t-1}*NEGRET_{i,t-1}$	0.258	$2.045^{\dagger}$	0.341	$2.526^{\dagger}$
$AQBNEX_{i,t}$	-0.022	-0.874		
$NEGRET_{i,t-1}*AQBNEX_{i,t}$	0.019	0.448		
$RET_{i,t-1}*AQBNEX_{i,t}$	-0.008	-0.279		
$RET_{i,t-1}*NEGRET_{i,t-1}*AQBNEX_{i,t}$	-0.011	-0.095		
$AQSPEX_{i,t}$			-0.007	-0.282
$NEGRET_{i,t-1}*AQSPEX_{i,t}$			0.012	0.280
$RET_{i,t-1}*AQSPEX_{i,t}$			0.005	0.180
$RET_{i,t-1}*NEGRET_{i,t-1}*AQSPEX_{i,t}$			-0.088	-0.831
Year 2002	-0.060	-1.643	-0.056	-1.547
Year 2003	-0.076	$-2.120^{\dagger}$	-0.076	$-2.108^{\dagger}$
Year 2004	-0.012	-0.336	-0.014	-0.404
Year 2005	-0.066	-1.867^{Ψ}	-0.066	-1.878^{Ψ}
Year 2006	-0.077	$-2.143^{\dagger}$	-0.076	$-2.127^{\dagger}$
Adjusted R²	0.055		0.057	
F-Value	$3.706^{\ddagger}$		$3.792^{\ddagger}$	
N	557		557	

Legend:
Regression results based on following model: (a) Column I—$RET_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t-1} + \alpha_2 AQBNEX_{i,t} + \alpha_3 NEGRET_{i,t-1}*AQBNEX_{i,t} + \beta_0 RET_{i,t-1} + \beta_1 RET_{i,t-1}*NEGRET_{i,t-1} + \beta_2 RET_{i,t-1}*AQBNEX_{i,t} + \beta_3 RET_{i,t-1}*NEGRET_{i,t-1}*AQBNEX_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; (b) Column II—$RET_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t-1} + \alpha_2 AQSPEX_{i,t} + \alpha_3 NEGRET_{i,t-1}*AQSPEX_{i,t} + \beta_0 RET_{i,t-1} + \beta_1 RET_{i,t-1}*NEGRET_{i,t-1} + \beta_2 RET_{i,t-1}*AQSPEX_{i,t} + \beta_3 RET_{i,t-1}*NEGRET_{i,t-1}*AQSPEX_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; where: $AQBNEX_{i,t}$ = composite score index with firm i in time period t scored one (1) for each of following criteria met: (a) ratio of non-audit services to total audit fees (i.e. fees paid for audit and non-audit services) of firm j in time t is less than 0.20; and (b) external auditor of firm i in time t is an industry specialist; If criterion item is not met then firm i in time period t scored zero (0) for that criterion. The range of the composite score index is from zero (0) to two (2);$AQSPEX_{i,t}$ = composite score index with firm i in time period t scored one (1) for each of following criteria met: (a) ratio of non-audit services to total audit fees (i.e. fees paid for audit and non-audit services) of firm j in time t is less than 0.20; and (b) external auditor is a *Big 4* audit firm (PWC, EY, Delloitte or KPMG). If criterion item is not met then firm i in time period t scored zero (0) for that criterion. The range of the composite score index is from zero (0) to two (2); For definitions of other variables, see equations in Table 6.3and; Ψ, $\dagger$, $\square$ = significant at the 0.10, 0.05 and 0.01 confidence levels.

In the regression tabulated in Table 7.11 Column I with brand name excluded from the computation of auditor quality, directionality of the coefficients on all variables is consistent with the directionality of corresponding coefficients in Table 6.5 Column I except that related to $RET_{i,t-1}*AQBNEX_{i,t}$ and $RET_{i,t-1}*AQ_{i,t}$. For the former the coefficient is

negative (see Table 7.11 Column I) but positive for the latter (see Table 6.5 Column I). As for significance of the variables, $RET_{i,t-1}$ and $RET_{i,t-1}*NEGRET_{i,t-1}$ are significant at the 5% confidence level in Table 7.11 Column I finals but at the 10% confidence level in the main results (see Table 6.5 Column I). Coefficients on all other variables remained statistically insignificant at any conventional level.

Regression results testing the auditor quality – timeliness of earnings conservatism association whereby the industry specialist is excluded from the composite auditor quality score (see Table 7.11 Column II) shows directionality on the coefficients of all seven variables mirror that of corresponding variables in Table 6.5 Column I (PS) findings. Furthermore, the significance of the coefficients is consistent aside from that associated with $RET_{i,t}*NEGRET_{i,t}$ which is significant at 5% confidence level in Table 7.11 Column II results but at the 10% confidence level for the main results.

7.4.2 Regression analysis of earnings persistence

While Table 7.10 and Table 7.11 presented statistical results from the retesting of the Basu (1997) timeliness of earnings conservatism model using revised composite scores for direct custodian excellence and auditor quality, results presented in Table 7.12 and Table 7.13 concentrate on the persistence of earnings conservatism.

With regards to the three variables forming the basic Basu (1997) persistence of earnings conservatism model (i.e. $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$), the directionality and significance of the coefficients on these variables in Table 7.12 Column I (Brand NameExcluded) and Table 7.12 Column II (SpecialistExcluded) mirror the main findings presented in Table 6.4 Column I (PS).

In terms of the four direct custodian excellence associated variables in the regression where the composite score is calculated after excluding the score for brand name (i.e. Table 7.12 Column I; $DCEBNEX_{i,t}$, $NEG\Delta OPI_{i,t-1}*DCEBNEX_{i,t}$, $\Delta OPI_{i,t-1}*DCEBNEX_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCEBNEX_{i,t}$), the directionality and significance are consistent with the four corresponding variables in the main results (see Table 6.4 Column I) that is $DCE_{i,t}$, $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$, $\Delta OPI_{i,t-1}*DCE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$. Similarly, for the regression whereby the direct custodian excellence composite is calculated without consideration for industry specialists (see Table 7.12 Column II), the coefficients on the four direct custodian excellence associated variables (i.e. $DCESPEX_{i,t}$, $NEG\Delta OPI_{i,t-1}*DCESPEX_{i,t}$, $\Delta OPI_{i,t-1}*DCESPEX_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCESPEX_{i,t}$) have the same directionality and significance as the four corresponding variables in the main results (see Table 6.4 Column I) that is $DCE_{i,t}$, $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$, $\Delta OPI_{i,t-1}*DCE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$.

Table 7.12: Regression analysis of $DCE_{i,t}$ and earnings persistence

	Column I: *Brand Name Excluded*		Column II: *Specialist Excluded*	
	β	*t*-stat	β	*t*-stat
(Constant)	0.043	0.058	-0.286	-0.366
$NEG\Delta OPI_{i,t-1}$	1.021	0.962	1.261	1.120
$\Delta OPI_{i,t-1}$	9.871	11.695[‡]	10.213	12.529[‡]
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-9.507	-7.388[‡]	-9.679	-8.451[‡]
$DCEBNEX_{i,t}$	0.166	0.792		
$NEG\Delta OPI_{i,t-1}*DCEBNEX_{i,t}$	-0.238	-0.691		
$\Delta OPI_{i,t-1}*DCEBNEX_{i,t}$	-2.664	-9.965[‡]		
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCEBNEX_{i,t}$	2.413	5.106[‡]		
$DCESPEX_{i,t}$			0.236	1.112
$NEG\Delta OPI_{i,t-1}*DCESPEX_{i,t}$			-0.316	-0.916
$\Delta OPI_{i,t-1}*DCESPEX_{i,t}$			-2.643	-10.771[‡]
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCESPEX_{i,t}$			2.331	5.904[‡]
Year 2002	-1.112	-1.878 [Ψ]	-1.025	-1.759 [Ψ]
Year 2003	-0.975	-1.702 [Ψ]	-0.730	-1.292
Year 2004	-0.870	-1.519	-0.699	-1.237
Year 2005	-0.987	-1.752 [Ψ]	-0.915	-1.646
Year 2006	-0.719	-1.266	-0.630	-1.125
Adjusted R²	0.224		0.245	
F-Value	14.348[‡]		16.038[‡]	
N	557		557	

Legend:
Regression results based on following model: (a) Column I—$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 DCEBNEX_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*DCEBNEX_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*DCEBNEX_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCEBNEX_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; and (b) Column II—$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 DCESPEX_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*DCESPEX_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*DCESPEX_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCESPEX_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; where: $DCEBNEX_{i,t}$ and $DCESPEX_{i,t}$ = see definition in *Table 7.10*. For definitions of other variables, see equations in Table 6.4 and; Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.13 reports results of multivariate analysis performed testing earnings persistence using a revised composite score for auditor quality with findings contrasted to Table 6.6 Column I results. Specifically, in Table 7.13 Column I the computation of auditor quality excludes scores for brand name whilst Table 7.13 Column II results are based on auditor quality scored without consideration for industry specialization.

Relative to Table 6.6 Column I results, the coefficients on three of the corresponding variables reported in Table 7.13 Column I have contrasting directionality, that is, $NEG\Delta OPI_{i,t-1}$ (positive in Table 7.13 Column I versus negative Table 6.6 Column I), $\Delta OPI_{i,t-1}$ (negative versus positive) and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQBNEX_{i,t}$ (positive versus negative). Significance of coefficients also contrasts for four of the seven corresponding variables.

Specifically, the coefficient on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ are significant at the 5% and 1% confidence level in Table 7.13 Column I results but insignificant from zero in Table 6.6 Column I (PS) results. Also, the coefficient on $\Delta OPI_{i,t-1}*AQBNEX_{i,t}$ ($\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQBNEX_{i,t}$) is significant at the 1% confidence level in Table 7.13 Column I results but insignificant from zero for the corresponding variable, that is, $\Delta OPI_{i,t-1}*AQ_{i,t}$ ($\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$) in the main findings (see Table 6.6 Column I).

Table 7.13: Regression analysis of $AQ_{i,t}$ and earnings persistence

	Column I: *Brand Name Excluded*		Column II: *Specialist Excluded*	
	β	*t*-stat	β	*t*-stat
(Constant)	0.635	1.114	0.482	0.769
$NEG\Delta OPI_{i,t-1}$	0.149	0.221	0.262	0.337
$\Delta OPI_{i,t-1}$	1.534	2.512[†]	2.706	4.686[‡]
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-2.194	-2.948[‡]	-3.276	-4.375[‡]
$AQBNEX_{i,t}$	-0.116	-0.326		
$NEG\Delta OPI_{i,t-1}*AQBNEX_{i,t}$	0.133	0.236		
$\Delta OPI_{i,t-1}*AQBNEX_{i,t}$	0.207	0.388		
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQBNEX_{i,t}$	0.178	0.283		
$AQSPEX_{i,t}$			-0.001	-0.002
$NEG\Delta OPI_{i,t-1}*AQSPEX_{i,t}$			0.014	0.025
$\Delta OPI_{i,t-1}*AQSPEX_{i,t}$			-0.792	-1.818[Ψ]
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQSPEX_{i,t}$			1.076	1.902[Ψ]
Year 2002	-0.965	-1.501	-0.897	-1.400
Year 2003	-0.869	-1.393	-0.820	-1.316
Year 2004	-0.803	-1.288	-0.748	-1.199
Year 2005	-0.929	-1.516	-0.936	-1.530
Year 2006	-0.710	-1.148	-0.614	-0.994
Adjusted R²	0.080		0.085	
F-Value	5.050[‡]		5.294[‡]	
N	557		557	

Legend:
Regression results based on following model: (a) Column I—$OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 AQBNEX_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*AQBNEX_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*AQBNEX_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQBNEX_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; (b) Column II—$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 AQSPEX_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*AQSPEX_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*AQSPEX_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQSPEX_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; where: $AQBNEX_{i,t}$ and $AQSPEX_{i,t}$ = see definition in *Table 7.11*. For definitions of other variables, see equations in Table 6.6and; Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

For the regression using the specialist excluded from the composite score of auditor quality (see Table 7.13 Column II), the coefficients on four variables (i.e. $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$, $NEG\Delta OPI_{i,t-1}*AQSPEX_{i,t}$, and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQSPEX_{i,t}$) is positive, while

the remaining (i.e. $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$, $AQSPEX_{i,t}$ and $\Delta OPI_{i,t-1}*AQSPEX_{i,t}$) is negative. In comparison to the same test but using unrevised composite score for auditor quality, (see Table 6.6 Column I), the coefficients on three variables (i.e. $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$, $AQSPEX_{i,t}/AQ_{i,t}$ and $NEG\Delta OPI_{i,t-1}*AQSPEX_{i,t}$ /$NEG\Delta OPI_{i,t-1}*AQ_{i,t}$) are consistent. In respect to the significance level, consistent with Table 6.6 Column I (PS), the coefficients on $\Delta OPI_{i,t-1}*AQ_{i,t}$ / $\Delta OPI_{i,t-1}*AQBNEX_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}/\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ are significant at conventional levels. However, instead of significant at 1% confidence level, the coefficient on variables using a revised composite score for auditor quality is significant at 10% confidence level. Moreover, another variation is that the coefficient on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ for regression using a revised composite score is also significant at conventional levels (p<0.01), while insignificant for regression using an unrevised composite score of auditor quality.

7.5   *Big 4* versus *Non-Big 4* classifications

Whilst Section 7.4 addressed one particular aspect of a possible *Big 4/Non-Big 4* bias (with respect to the calculation of the composite score in relation to brand name and/or industry specialist), differences may also be noted if partitioning the firm-year observations by the type of auditor (i.e. *Big 4* or *Non-Big 4*) that conducted the audit. To this end, the main tests performed on the pooled sample (N = 557 firm-year observations) are repeated for a *Big 4* (N = 326 firm-year observations) and *Non-Big 4* (N = 231 firm-year observations) sub-samples.

7.5.1   *Regression analysis of earnings timeliness*

Table 7.14 presents empirical results of two regressions(Column I for *Big 4* sub-sample, and Column II for *Non-Big 4* sub-sample) testing the original Basu (1997) timeliness of earnings conservatism base model.

Directionality of the coefficients on the three primary variables underpinning the basic Basu (1997) timeliness of earnings conservatism model (i.e. $NEGRET_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) in the two regressions reported in Table 7.14 are consistent with the main results (see Table 6.1 Column I). For the test using *Big 4* firm-year observations the coefficients on $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$ are statistically significant (i.e. p<0.01). This result is consistent with the main findings. In contrast, for the regression including *Non-Big 4* firm-year observations, only the coefficient on $RET_{i,t}*NEGRET_{i,t}$ is statistically significant (i.e. p<0.10). Overall, Table 7.14 results suggest timeliness of earnings conservatism prevails across the *Big 4* and *Non-Big 4* sub-samples, though more pronounced in the former than latter.

Table 7.14: Regression analysis of earnings timeliness

	Column I: *Big 4*		Column II: *Non-Big 4*	
	β	*t*-stat	β	*t*-stat
(Constant)	0.089	2.535	0.106	2.086
$NEGRET_{i,t}$	0.046	1.258	0.010	0.186
$RET_{i,t}$	0.060	3.188[‡]	0.037	1.318
$RET_{i,t}*NEGRET_{i,t}$	0.248	2.715[‡]	0.223	1.836[Ψ]
Year 2002	-0.028	-0.640	-0.103	-1.655
Year 2003	-0.088	-2.075[†]	-0.048	-0.761
Year 2004	-0.020	-0.469	0.004	0.067
Year 2005	-0.035	-0.827	-0.103	-1.745[Ψ]
Year 2006	-0.025	-0.590	-0.136	-2.192[†]
Adjusted R²	0.073		0.042	
F-Value	4.206[‡]		2.251[†]	
N	326		231	

Legend:
Column I and II: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$where: See equations in Table 6.1 for definitions of all variables; and Ψ, †, □= significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.15 presents results of regression using the separate *Big 4* and *Non-Big 4* sub-samples that test the association between the timeliness of earnings conservatism and (a) direct custodian excellence (see Table 7.15 Column I and Column II), (b) auditor quality (see Table 7.15 Column III and Column IV) and (c) audit committee effectiveness (see Table 7.15 Column V and Column VI). The *Big 4* (*Non-Big 4*) sub-sample is used in regressions reported in Table 7.15 Column I, Column III and Column V (Column II, Column IV and Column VI).

Table 7.15: Regression analysis of $DCE_{i,t}$, $AQ_{i,t}$, $ACE_{i,t}$ and earnings timeliness

	Column I: *Big 4*		Column II: *Non-Big 4*		Column III: *Big 4*		Column IV: *Non-Big 4*		Column V: *Big 4*		Column VI: *Non-Big 4*	
	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat
(Constant)	-0.047	-0.514	0.032	0.322	0.140	1.783	0.141	2.381	-0.105	-1.658	-0.022	-0.224
$NEGRET_{i,t}$	0.154	1.052	0.093	0.624	0.032	0.257	-0.017	-0.224	0.165	1.631	0.130	0.855
$RET_{i,t}$	0.124	1.556	0.376	4.344[‡]	0.157	1.194	0.056	1.852 [Ψ]	0.109	2.683[‡]	0.452	4.322[‡]
$RET_{i,t}*NEGRET_{i,t}$	0.195	0.502	-0.098	-0.257	0.074	0.201	0.280	1.580	0.193	0.775	-0.284	-0.776
$DCE_{i,t}$	0.034	1.606	0.042	1.166								
$NEGRET_{i,t}*DCE_{i,t}$	-0.028	-0.790	-0.047	-0.811								
$RET_{i,t}*DCE_{i,t}$	-0.019	-0.832	-0.174	-4.192[‡]								
$RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$	0.016	0.170	0.163	1.112								
$AQ_{i,t}$					-0.021	-0.628	0.030	0.438				
$NEGRET_{i,t}*AQ_{i,t}$					0.005	0.090	-0.037	-0.343				
$RET_{i,t}*AQ_{i,t}$					-0.048	-0.750	-0.240	-2.555[†]				
$RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$					0.081	0.499	0.119	0.474				
$ACE_{i,t}$									0.102	3.558[‡]	0.061	1.394
$NEGRET_{i,t}*ACE_{i,t}$									-0.068	-1.339	-0.065	-0.851
$RET_{i,t}*ACE_{i,t}$									-0.036	-1.399	-0.222	-4.119[‡]
$RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$									0.037	0.291	0.261	1.465

Table 7.15: Regression analysis of $DCE_{i,t}$, $AQ_{i,t}$, $ACE_{i,t}$ and earnings timeliness (*continued*)

	Column I: *Big 4*		Column II: *Non-Big 4*		Column III: *Big 4*		Column IV: *Non-Big 4*		Column V: *Big 4*		Column VI: *Non-Big 4*	
	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat
Year 2002	-0.023	-0.525	-0.102	-1.693 [Ψ]	-0.036	-0.811	-0.110	-1.776	-0.018	-0.427	-0.092	-1.523
Year 2003	-0.085	-1.994 [†]	-0.032	-0.532	-0.092	-2.158 [†]	-0.050	-0.795	-0.085	-2.034 [†]	-0.025	-0.413
Year 2004	-0.018	-0.416	0.000	0.006	-0.020	-0.457	-0.011	-0.183	-0.011	-0.251	0.009	0.154
Year 2005	-0.036	-0.848	-0.092	-1.594	-0.035	-0.813	-0.106	-1.798 [Ψ]	-0.032	-0.761	-0.086	-1.487
Year 2006	-0.021	-0.490	-0.133	-2.228 [†]	-0.025	-0.579	-0.150	-2.428 [†]	-0.014	-0.325	-0.118	-1.965 [†]
Adjusted R²	0.069		0.109		0.073		0.063		0.106		0.103	
F-Value	3.023 [‡]		3.355 [‡]		3.123 [‡]		2.284 [†]		4.211 [‡]		3.191 [‡]	
N	326		231		326		231		326		231	

Legend:

Regression results based on following model: (a) Column I—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 DCE_{i,t} + \alpha_3 NEGRET_{i,t}*DCE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*DCE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*DCE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; (b) Column II—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 AQ_{i,t} + \alpha_3 NEGRET_{i,t}*AQ_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*AQ_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*AQ_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; and (c) Column III—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 ACE_{i,t} + \alpha_3 NEGRET_{i,t}*ACE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*ACE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*ACE_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; where: $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$ = see equations in Table 6.3, 6.5 and 6.7. For definitions of other variables, see equations in Table 6.1; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Directionality of the coefficients on the three variables (i.e. $NEGRET_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) that are included in all six regressions reported in Table 7.15, generally are consistent with the corresponding regressions reported in Table 6.3 Column I (PS), Table 6.5 Column I (PS) and Table 6.7 Column I (PS). Only three differences in directionality are noted: (1) negative sign on $RET_{i,t}*NEGRET_{i,t}$ in Table 7.15 Column II when positive for corresponding regression (see Table 6.3 Column I);(2) negative sign on $NEGRET_{i,t}$ in Table 7.15 Column IV when positive for corresponding regression (see Table 6.5 Column I); and (3) negative sign on $RET_{i,t}*NEGRET_{i,t}$ in Table 7.15 Column VI when positive for corresponding regression (see Table 6.7 Column I). The significance of the coefficients on $NEGRET_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$ also generally mirror that of the corresponding main results. However, some important variations are noted. Specifically, the coefficient on $RET_{i,t}$ in Table 7.15 Column I and Column III are insignificant from zero whereas the coefficient is significant for the corresponding main results (see Table 6.3 Column I and Table 6.5 Column I). Also, the coefficient on $RET_{i,t}*NEGRET_{i,t}$ is statistically insignificant at conventional levels in Table 7.15 Column III and Column IV but significant ($p<0.10$) in the corresponding main findings (see Table 6.5 Column I).

In regards to regression results (see Table 7.15 Column I and Column II) including the four variables associated with direct custodian excellence (i.e.$DCE_{i,t}$, $NEGRET_{i,t}*DCE_{i,t}$, $RET_{i,t}*DCE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$), directionality and significance of the coefficients are consistent with the main results reported in Table 6.3 Column I (PS) except in one case. Specifically, the coefficient on $RET_{i,t}*DCE_{i,t}$ is statistically significant (i.e. $p<0.01$) when using *Non-Big 4* firm-year observations but insignificant from zero for the main results (see Table 6.3 Column I).

Results reported in Table 7.15 Column III and Column IV associated with variables that include a measure for auditor quality (i.e.$AQ_{i,t}$, $NEGRET_{i,t}*AQ_{i,t}$, $RET_{i,t}*AQ_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$) have some variation from the main associated results tabulated in Table 6.5 Column I (PS). Specifically, the coefficient on $RET_{i,t}*AQ_{i,t}$ is positive and insignificant from zero in the main results (see Table 6.5 Column I). When regressions are performed using the partitioned *Big 4* and *Non-Big 4* sub-samples the coefficient on $RET_{i,t}*AQ_{i,t}$ is negative (see Table 7.15 Column III and Column IV). Further, for the regression using the *Non-Big 4* sub-sample, the $RET_{i,t}*AQ_{i,t}$ coefficient is significant at conventional levels that is $p<0.05$ (see Table 7.15 Column IV). Also, the coefficient on $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$ is positive and insignificant when using only *Big 4* sub-sample observations (see Table 7.15 Column III) but negative and insignificant in the main results (see Table 6.5 Column I).

As for results related to variables including a measure for audit committee effectiveness (i.e. $ACE_{i,t}$, $NEGRET_{i,t}*ACE_{i,t}$, $RET_{i,t}*ACE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$), the directionality of the coefficients on these variables as reported in Table 7.15 Column V and Column VI, mirror that of the main results reported in Table 6.7 Column I (PS). There is some variation, however, in terms of significance. Specifically, in the main results (see Table 6.7 Column I) the coefficients on $ACE_{i,t}$ and $RET_{i,t}*ACE_{i,t}$ are significant (i.e. $p<0.01$ respectively). For results shown in Table 7.15 Column V and Column VI, however, the coefficients on $ACE_{i,t}$ and $RET_{i,t}*ACE_{i,t}$ are insignificant from zero.

Whilst results of regressions performed after partitioning the sample into *Big-4* and *Non-Big-4* groupings present some differences to the main results (and between the two sub-groups), the variations are generally minor. Of greatest importance is the variations noted are not associated with the key three-way interaction terms (i.e. $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$, $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$). Specifically, Table 7.15 results indicate that regardless of the engagement of a *Big-4* or *Non-Big-4* audit firm, there persists to be a substantive lack of a significant association between the timeliness of earnings conservatism and (a) direct custodian excellence, (b) auditor quality, and (c) audit committee excellence. Thus, the findings in Table 7.15 reinforce the main results shown in Table 6.3 Column I, Table 6.5 Column I and Table 6.7 Column I respectively.

7.5.2 *Regression analysis of earnings persistence*

Table 7.16 presents empirical results of two regressions(Column I for *Big 4* sub-sample, and Column II for *Non-Big 4* sub-sample) testing the original Basu (1997) persistence of earnings conservatism base model.

Directionality and significance of the coefficients on the three primary variables underpinning the basic Basu (1997) persistence of earnings conservatism model (i.e. $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$) in the regression reported in Table 7.16 Column I are consistent with the main results (see Table 6.2 Column I). For the regression results using the *Non-Big 4* sub-sample (see Table 7.16 Column II), the coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ is also consistent with the corresponding main results tabulated in Table 6.2 Column I. However, the directionality of the coefficients on $NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}$ in Table 7.16 Column II are contrary to Table 6.2 Column I results. The non-significance of the coefficient on $\Delta OPI_{i,t-1}$ in Table 7.16 Column II results is also contrary to the significant (i.e. $p<0.01$) coefficient on $\Delta OPI_{i,t-1}$ for the main results (see Table 6.2 Column I). Overall, as the coefficients on the two-way interaction term (i.e. $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$) are negative and significant (and consistent with Table 6.2 Column I

results), the results suggest persistence of earnings conservatism prevails across the *Big 4* and *Non-Big 4* sub-samples.

Table 7.16: Regression analysis of earnings persistence

	Column I: *Big 4*		Column II: *Non-Big 4*	
	β	*t*-stat	*β*	*t*-stat
(Constant)	1.140	1.576	0.040	0.274
$NEG\Delta OPI_{i,t-1}$	0.577	0.941	-0.049	-0.372
$\Delta OPI_{i,t-1}$	3.637	8.753‡	-0.047	-0.634
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-3.797	-7.319‡	-0.770	-5.276‡
Year 2002	-2.149	-2.103†	-0.087	-0.404
Year 2003	-1.991	-2.023†	-0.036	-0.171
Year 2004	-1.850	-1.853$^{\Psi}$	0.139	0.679
Year 2005	-1.535	-1.552	-0.287	-1.444
Year 2006	-1.810	-1.819	0.061	0.302
Adjusted R²	0.188		0.168	
F-Value	10.380‡		6.800‡	
N	326		231	

Legend:
Column I and II:$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \beta_0\Delta OPI_{i,t-1} + \beta1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \sum\gamma_t + \varepsilon_{i,t}$; where*: see equations in Table 6.2 for definitions of all variables; and Ψ, †, □= significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.17 presents results of regressions using the separate *Big 4* and *Non-Big 4* sub-samples that test the association between the persistence of earnings conservatism and (a) direct custodian excellence (see Table 7.17 Column I and Column II), (b) auditor quality (see Table 7.17 Column III and Column IV) and (c) audit committee effectiveness (see Table 7.17 Column V and Column VI). The *Big 4* (*Non-Big 4*) sub-sample is used in regressions reported in Table 7.17 Column I, Column III and Column V (Column II, Column IV and Column VI).

Directionality and significance of the coefficients on the three variables (i.e.$NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$) included in all six regressions reported in Table 7.17 are relatively mixed in respect to consistency with corresponding coefficients in regressions reported in Table 6.4 Column I, Table 6.6 Column I and Table 6.8 Column I. The coefficients on $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 7.17 Column I and Column V, regressions are of the same direction and significance as the main corresponding results reported in Table 6.4 Column I and Table 6.8 Column I. The directionality of the coefficients on $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 7.17 Column IV is also consistent with the main findings reported in Table 6.6 Column I. However, the coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 7.17 Column IV is

significant at 5% confidence level but insignificant from zero for the main results (see Table 6.6 Colum I). As for the coefficients on $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 7.17 Column II, these are in the opposite direction to the main corresponding findings in Table 6.4 Column I. Further, all coefficients on $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 7.17 Column II are insignificant whereas in the main corresponding results (see Table 6.4 Column I) the coefficients on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ are statistically significant (i.e. $p<0.01$ respectively). As for the coefficients on $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 7.17 Column III, only that on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ is consistent with the main corresponding findings in Table 6.6 Column I. Furthermore, coefficients on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ are significant (i.e. $p<0.01$) whilst all coefficients on the $NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 6.6 Column I were insignificant from zero. Finally, the directionality of coefficients on $NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in Table 7.17 Column VI results are contrary to the main corresponding reports in Table 6.8 Column I. Further, the $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ coefficient in Table 7.17 Column VI is insignificant from zero, whereas the corresponding coefficient in Table 6.8 Column I is significant at the 1% confidence level.

In regards to regression results reported in Table 7.17 Column I related to the four variables associated with direct custodian excellence (i.e. $DCE_{i,t}$, $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$, $\Delta OPI_{i,t-1}*DCE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$), directionality and significance of the coefficients are consistent with the main results reported in Table 6.4 Column I. In contrast, the directionality on the coefficients of $DCE_{i,t}$, $NEG\Delta OPI_{i,t-1}*DCE_{i,t}$, $\Delta OPI_{i,t-1}*DCE_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ reported in Table 7.17 Column II are directly opposite to the coefficients on the corresponding variables in the main results (see Table 6.4 Column I). There are also some differences in respect to the significance of the coefficients reported in Table 7.17 Column II relative to corresponding main results in Table 6.4 Column I. Specifically, the coefficient on $DCE_{i,t}$ ($\Delta OPI_{i,t-1}*DCE_{i,t}$) is significant (not significant) at conventional levels in Table 7.17 Column II results but not significant (significant) at conventional levels for the main results reported in Table 6.4 Column I.

As for results reported in Table 7.17 Column III associated with four variables that include a measure for auditor quality (i.e. $AQ_{i,t}$, $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, $\Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$), directionality of the coefficients is in complete contrast to that for the main associated results tabulated in Table 6.6 Column I. The significance of the coefficients on $AQ_{i,t}$, $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, $\Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ in Table 7.17 Column III results, however, are consistent with Table 6.6 Column I findings. Meanwhile, for the regression on *Non-Big 4* sub-sample firm-year observations, the coefficients on $AQ_{i,t}$, $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, $\Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$ are

consistent with Table 6.6 Column I (PS) results. Again, however, significance of the coefficients varies. Specifically, the coefficient on $AQ_{i,t}$ ($\Delta OPI_{i,t-1}*AQ_{i,t}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$) is significant (not significant) at conventional levels in Table 7.17 Column IV results but not significant (significant) in Table 6.6 Column I findings.

In the case of tests reported in Table 7.17 Column V, the directionality of the coefficients on four variables including a measure for audit committee effectiveness (i.e. $ACE_{i,t}$, $NEGRET_{i,t}*ACE_{i,t}$, $RET_{i,t}*ACE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$) mirror that of the main results reported in Table 6.8 Column I. However, unlike Table 6.8 Column I results, the coefficient on $RET_{i,t}*ACE_{i,t}$ is not significant at conventional levels. Meanwhile, the directionality on the coefficients for $ACE_{i,t}$, $NEGRET_{i,t}*ACE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$ ($RET_{i,t}*ACE_{i,t}$) are contrary (consistent) with the directionality of the coefficients on corresponding variables of the main results (see Table 6.8 Column I). The coefficient on $ACE_{i,t}$ and $RET_{i,t}*ACE_{i,t}$ in Table 7.17 Column VI results, meanwhile, are contrary to Table 6.8 Column I findings.

In general, results of regression performed using only *Big 4* sub-sample firm-year observations was consistent with main results associated with direct custodial excellence and audit committee effectiveness (see Table 6.4 Column I and Table 6.8 Column I). Conversely, when considering auditor quality when isolating the analysis to *Big 4* sub-sample firm-year observations, this produces results contrary to the main findings (see Table 6.6 Column I). When only using *Non-Big 4* sub-sample firm-year observations, however, the additional regression analysis yields results usually inconsistent with the main results using the full sample. This is regardless of whether the focus is on direct custodial excellence, auditor quality or audit committee effectiveness. Overall, the *Big 4/Non-Big 4* dichotomy appears to have a bearing on the association between the persistence of earnings conservatism and: (a) direct custodial excellence; (b) auditor quality; and (c) audit committee effectiveness as reported in the main findings. This affect appears more centred on the engagement of *Non-Big 4* audit firms than a *Big 4* audit firm.

Table 7.17: Regression analysis of $DCE_{i,t}$, $AQ_{i,t}$, $ACE_{i,t}$ and earnings persistence

	Column I: *Big 4*		Column II: *Non-Big 4*		Column III: *Big 4*		Column IV: *Non-Big 4*		Column V: *Big 4*		Column VI: *Non-Big 4*	
	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat
(Constant)	-0.356	-0.240	0.668	2.465	0.656	0.477	0.321	1.719	0.591	0.490	0.387	1.526
$NEG\Delta OPI_{i,t-1}$	2.079	0.923	-0.549	-1.426	1.274	0.641	-0.340	-1.591	1.177	0.720	-0.293	-0.816
$\Delta OPI_{i,t-1}$	26.388	11.048‡	-0.152	-0.476	10.967	5.313‡	-0.284	-1.493	10.185	9.193‡	0.145	0.413
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-25.699	-8.679‡	0.465	0.715	-11.828	-4.933‡	-0.523	-2.255†	-9.597	-7.392‡	0.301	0.425
$DCE_{i,t}$	0.383	1.197	-0.250	-2.807‡								
$NEG\Delta OPI_{i,t-1}*DCE_{i,t}$	-0.500	-0.950	0.192	1.341								
$\Delta OPI_{i,t-1}*DCE_{i,t}$	-6.340	-9.649‡	0.039	0.438								
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$	6.093	7.381‡	-0.531	-2.069†								
$AQ_{i,t}$					0.178	0.332	-0.425	-2.543†				
$NEG\Delta OPI_{i,t-1}*AQ_{i,t}$					-0.311	-0.364	0.434	1.570				
$\Delta OPI_{i,t-1}*AQ_{i,t}$					-3.261	-3.619‡	0.287	1.391				
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$					3.564	3.428‡	-0.509	-0.878				
$ACE_{i,t}$									0.389	0.783	-0.192	-1.759Ψ
$NEG\Delta OPI_{i,t-1}*ACE_{i,t}$									-0.550	-0.697	0.142	0.815
$\Delta OPI_{i,t-1}*ACE_{i,t}$									-4.874	-6.359‡	-0.064	-0.495
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$									4.251	4.610‡	-0.499	-1.671Ψ

Table 7.17: Regression analysis of $DCE_{i,t}$, $AQ_{i,t}$, $ACE_{i,t}$ and earnings persistence (*continued*)

	Column I: *Big 4*		Column II: *Non-Big 4*		Column III: *Big 4*		Column IV: *Non-Big 4*		Column V: *Big 4*		Column VI: *Non-Big 4*	
	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat	β	*t*-stat
Year 2002	-1.960	-2.154[†]	-0.089	-0.421	-2.206	-2.171[†]	-0.111	-0.518	-2.110	-2.174[†]	-0.063	-0.295
Year 2003	-1.200	-1.369	-0.039	-0.191	-1.965	-2.016[†]	-0.067	-0.316	-1.350	-1.444	-0.018	-0.089
Year 2004	-1.378	-1.559	0.095	0.471	-1.771	-1.800[Ψ]	0.146	0.708	-1.594	-1.681[Ψ]	0.082	0.401
Year 2005	-1.158	-1.322	-0.320	-1.627	-1.396	-1.430	-0.292	-1.455	-1.433	-1.533	-0.300	-1.519
Year 2006	-1.044	-1.182	0.091	0.456	-1.450	-1.467	0.053	0.262	-1.784	-1.899[Ψ]	0.101	0.504
Adjusted R²	0.368		0.198		0.212		0.180		0.276		0.184	
F-Value	16.798[‡]		5.733[‡]		8.293[Ψ]		5.199[Ψ]		11.338[‡]		5.325[‡]	
N	326		231		326		231		326		231	

Legend:
Regression results based on following model: (a) Column I and II—$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 DCE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*DCE_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*DCE_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; (b) Column III and IV—$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 AQ_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*AQ_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*AQ_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; and (c) Column V and VI—$\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 ACE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_0\Delta OPI_{i,t-1} + \beta_1\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_3\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; where: $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$ = see definitions in *Table 6.4, 6.6 and 6.8*. For definitions of other variables, see equations in Table 6.2; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

7.6   Industry classifications

In this section, the statistical results of re-tests of main regression models (related to both the Basu (1997) timeliness and persistence of earnings conservatism models) to examine any cross-sectional influences of industry are outlined. Whilst Bursa Malaysia Stock Exchange industry classifications allow firm-year observations to be broken into eight major groups, the additional robustness and sensitivity analysis is conducted using only five groupings. Due to sufficient observations, the *Construction*, *Consumer Products*, *Industrial Products* and *Trading & Services* industries are considered separately. Meanwhile, firm-year observations from the *Plantation*, *Mining*, *Property*, and *Technology* industries are condensed into a single grouping titled ‗Others'.

7.6.1   Regression analysis of earnings timeliness

Table 7.18 presents the empirical results of analysis testing using the original Basu (1997) timeliness of earnings conservatism across the five major industry groupings. Directionality of the coefficients on the three prime variables of interest (i.e. $NEGRET_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) for regressions involving firm-year observations from the *Construction*, *Consumer Products* and *Industrial Products* industry sectors (see Table 7.18 Column I, Column II and Column III) mirror the main regression results (see Table 6.1 Column I).

In contrast to the main regression findings, however, the coefficient on $RET_{i,t}$ ($RET_{i,t}*NEGRET_{i,t}$) is insignificant from zero in regression results tabulated in Table 7.18 Column I (Table 7.18 Column II and Column III) for *Construction* (*Consumer Products* and *Industrial Products*) sector firm-year observations. For the regression using the *Trading & Services* (*Others*) industry sector firm-year observations, the coefficient on $RET_{i,t}$ ($NEGRET_{i,t}$) is negative, a result contrary to the main findings in Table 6.1 Column I where the coefficient is positive. Also, the coefficient on $RET_{i,t}$ ($RET_{i,t}*NEGRET_{i,t}$) is insignificant from zero in the two (single) regressions using the *Trading & Services* and *Others* industry sector firm-year observations. This lack of significance is contrary to the main corresponding results shown in Table 6.1 Column I. In sum, whilst the main results reported in Table 6.1 Column I imply the timeliness of earnings conservatism when considering the full sample, Table 7.18 suggests this phenomenon varies across industry sectors.

Table 7.18: Regression analysis of earnings timeliness

	Industry Category									
	Column I: Construction		Column II: Consumer Products		Column III: Industrial Products		Column IV: Trading & Services		Column V: Others	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.208	2.442	0.024	0.335	0.095	1.397	0.105	1.555	0.053	0.958
$NEGRET_{i,t}$	0.067	0.686	0.052	0.686	0.089	1.295	0.007	0.104	-0.012	-0.207
$RET_{i,t}$	0.081	1.399	0.078	2.874[‡]	0.218	2.516[†]	-0.008	-0.286	0.029	0.661
$RET_{i,t}*NEGRET_{i,t}$	0.448	1.734 [Ψ]	0.135	0.684	0.268	1.551	0.231	1.679 [Ψ]	0.111	0.777
Year 2002	-0.114	-1.114	-0.023	-0.229	-0.040	-0.545	-0.104	-1.281	-0.017	-0.270
Year 2003	-0.233	-2.218[†]	-0.061	-0.667	-0.097	-1.340	-0.074	-0.899	0.034	0.559
Year 2004	-0.124	-1.212	-0.026	-0.275	0.049	0.681	0.031	0.389	0.037	0.603
Year 2005	-0.168	-1.673 [Ψ]	-0.085	-0.912	-0.083	-1.155	-0.069	-0.874	0.033	0.530
Year 2006	-0.149	-1.387	-0.052	-0.559	-0.055	-0.745	-0.048	-0.579	-0.094	-1.553
Adjusted R²	0.053		0.041		0.120		0.003		0.012	
F-Value	1.679[Ψ]		1.539		3.193[□]		1.029		1.204	
N	98		102		129		95		133	

Legend:

Column I, II, III, IV and V: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: see equations in Table 6.1 for definitions of all variables; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.19 presents results of statistical analysis of the association between direct custodian excellence and the timeliness of earnings conservatism taking into consideration of possible cross-sectional variations across different industry sectors. Findings are compared to Table 6.3 Column I findings.

Directionality of the coefficients of the seven variables of interested presented in Table 7.19 Column I is generally consistent with the main results detailed in Table 6.3 Column I (PS). The only difference of note is on the coefficient for the three-way interaction term (i.e. $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$) which is positive in the main results (see Table 6.3 Column I) but negative for the regression using only the *Construction* industry sector firm-year observations. In terms of the significance of the coefficients reported in Table 7.19 Column I, relative to Table 6.3 Column I findings, there are several variations. Specifically, the coefficients on $NEGRET_{i,t}$, $NEGRET_{i,t}*DCE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$ are insignificant from zero for the main findings (see Table 6.3 Column I) but significant at conventional levels (i.e. $p<0.05$, $p<0.05$ and $p<0.05$ respectively) in Table 7.19 Column I using only the *Construction* industry sector firm-year observations.

For the regression results based solely on the *Consumer Products* industry sector firm-year observations (see Table 7.19 Column II), the directionality of coefficient on six of the seven variables of interest are contrary to the corresponding results in Table 6.3 Column I. $RET_{i,t}*NEGRET_{i,t}$ is the only variable where the directionality of the coefficient is the same in industry specific (see Table 7.19 Column II) and full sample results (see Table 6.3 Column I). Coefficients on all the variables of interest in Table 7.19 Column II are insignificant from zero. For the variables $RET_{i,t}$ and $RET_{i,t}*DCE_{i,t}$, the lack of significance of the coefficient in Table 7.19 Column II is contrary to corresponding results using the full sample (see Table 6.3 Column I; $p<0.05$ and $p<0.05$ respectively).

The directionality of the coefficients on the seven variables of interest in the regression results using only the *Industrial Products* industry sector firm-year observations (see Table 7.19 Column III) closely mirror the main findings (see Table 6.3 Column I). It is only the coefficient on $RET_{i,t}*NEGRET_{i,t}$ that is negative in the industry specific test (see Table 7.19 Column III) relative to the main findings of Table 6.3 Column I. In respect to the significance of the coefficients, however, three differences are noted. Specifically, in the industry specific regression (see Table 7.19 Column III) the coefficient on $NEGRET_{i,t}$, $DCE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$ are significant but insignificant from zero in the main findings (see Table 6.3 Column I).

Four of the seven coefficients (i.e. $NEGRET_{i,t}$, $DCE_{i,t}$, $NEGRET_{i,t}*DCE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) on the variables of interest in Table 7.19 Column IV results (using the *Trading & Services* industry sector firm-year observations only) are contrary to Table 6.3

Column I findings (i.e. negative, negative, positive and negative versus positive, positive, negative and positive respectively). Also, coefficients on all the variables of interest in Table 7.19 Column II are insignificant from zero. For the variables $RET_{i,t}$ and $RET_{i,t}*DCE_{i,t}$, the lack of significance of the coefficient in Table 7.19 Column IV is contrary to corresponding results using the full sample (see Table 6.3 Column I; p<0.05 and p<0.05 respectively).

Finally, only one of the seven coefficients (i.e. $RET_{i,t}*NEGRET_{i,t}$) on the variables of interest in Table 7.19 Column V results (using the *Others* industry sector firm-year observations only) is contrary to Table 6.3 Column I findings (i.e. negative versus positive). Similarly, on the significance of the coefficient on $DCE_{i,t}$ in Table 7.19 Column V results is contrary to Table 6.3 Column I (PS) results. Specifically, the coefficient on $DCE_{i,t}$ is significant at the 5% confidence level in Table 7.19 Column V but insignificant from zero in the main findings (see Table 6.3 Column I).

Table 7.19 results indicate isolating the analysis to specific industry sectors will undoubtedly influence the main findings. Furthermore, Table 7.19 findings related to the three-way interaction term $RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$, indicate direct custodian excellence may influence the timeliness of earnings conservatism in specific industries. However, as indicated by the main findings, direct custodian excellence does not appear to be significantly associated with the timeliness of earnings conservatism when considering the whole market.

Table 7.19: Regression analysis of $DCE_{i,t}$ and earnings timeliness

	Column I: Constructions		Column II: Consumer Products		Column III: Industrial Product		Column IV: Trading & Services		Column V: Others	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	-0.022	-0.114	0.257	1.509	-0.133	-1.106	0.126	0.897	-0.221	-1.874
$NEGRET_{i,t}$	0.774	2.015[†]	-0.187	-0.686	0.285	1.671[Ψ]	-0.195	-0.890	0.183	1.258
$DCE_{i,t}$	0.065	1.299	-0.070	-1.461	0.079	2.343[†]	-0.003	-0.068	0.065	2.572[†]
$NEGRET_{i,t}*DCE_{i,t}$	-0.212	-1.999[†]	0.083	1.018	-0.063	-1.224	0.049	0.874	-0.046	-1.254
$RET_{i,t}$	0.296	2.451[†]	-0.237	-0.757	0.589	2.390[†]	0.010	0.118	0.324	2.556[†]
$RET_{i,t}*NEGRET_{i,t}$	1.889	1.968[†]	1.032	1.230	-0.564	-1.186	-0.025	-0.059	-0.431	-1.104
$RET_{i,t}*DCE_{i,t}$	-0.075	-2.008[†]	0.104	1.012	-0.122	-1.750[Ψ]	-0.009	-0.244	-0.070	-2.477[†]
$RET_{i,t}*NEGRET_{i,t}*DCE_{i,t}$	-0.439	-1.550	-0.243	-1.053	0.272	1.886[Ψ]	0.070	0.598	0.142	1.335
Year 2002	-0.106	-1.048	-0.009	-0.086	-0.065	-0.885	-0.092	-1.102	0.003	0.043
Year 2003	-0.208	-1.973[†]	-0.096	-1.007	-0.114	-1.590	-0.085	-1.003	0.052	0.869
Year 2004	-0.113	-1.096	-0.050	-0.522	0.054	0.751	0.024	0.292	0.061	0.989
Year 2005	-0.135	-1.304	-0.121	-1.241	-0.093	-1.310	-0.072	-0.880	0.041	0.673
Year 2006	-0.124	-1.163	-0.073	-0.790	-0.060	-0.801	-0.054	-0.648	-0.081	-1.359
Adjusted R²	0.089		0.042		0.148		-0.025		0.044	
F-Value	1.785[Ψ]		1.370		2.871[‡]		0.808		1.503	
N	98		102		129		95		133	

Legend:
Column I, II, III, IV and V:OPI$_{i,t}$ = α$_0$ + α$_1$NEGRET$_{i,t}$ + α$_2$DCE$_{i,t}$ + α$_3$NEGRET$_{i,t}$*DCE$_{i,t}$ + β$_0$RET$_{i,t}$ + β$_1$RET$_{i,t}$*NEGRET$_{i,t}$ + β$_2$RET$_{i,t}$*DCE$_{i,t}$ + β$_3$RET$_{i,t}$*NEGRET$_{i,t}$ *DCE$_{i,t}$+ ∑γ$_t$ + ε$_{i,t}$; where: see equations in Table 6.3 for definitions of all variables; and Ψ, †, □= significant at the 0.10, 0.05 and 0.01 confidence levels.

7.6.2 Regression analysis of earnings persistence

Table 7.20 presents the empirical results of analysis testing the original Basu (1997) persistence of earnings conservatism across the five major industry groupings. Directionality of the coefficients on the three prime variables of interest (i.e.$NEG\Delta OPI_{i,t-1}$, $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$) for the regression involving firm-year observations from the *Consumer Products* industry sector (see Table 7.20 Column II) mirror the main regression results (see Table 6.2 Column I). In contrast to the main regression findings (see Table 6.2 Column I, the coefficient on $NEG\Delta OPI_{i,t-1}$ ($\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$) is negative (positive) in the regression in only those firm-year observations associated with the *Construction* (*Trading & Services*) industry sector as reported in Table 7.20 Column I (Column IV). Meanwhile, the coefficient on $\Delta OPI_{i,t-1}$ is negative (as opposed to positive for the main findings in Table 6.2 Column I) in industry specific regressions for the *Construction*, *Industrial Products*, *Trading & Services* and *Others* industry sectors (see Table 7.20 Column I, Column III, Column IV and Column V).

As for the significance of the coefficients, the coefficient on $\Delta OPI_{i,t-1}$ is insignificant from zero in regressions using firm-year observations from the *Construction*, *Industrial Products* and *Others* industry sectors (see Table 7.20 Column I, Column III, Column IV and Column V). Results for these regressions are contrary to the main findings reported in Table 6.2 Column I where the coefficient on $\Delta OPI_{i,t-1}$ is significant at the 1% confidence level. Finally, the coefficient on the $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ variable in Table 7.20 Column V (that uses firm-year observations from the *Others* industry sectors) is insignificant from zero. The coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ in the main regression results (see Table 6.2 Column I) is significant at the 1% confidence level.

The main results reported in Table 6.2 Column I imply the persistence of earnings conservatism prevails across the Malaysian capital market. Whilst Table 7.20 results generally support the main findings of Table 6.2 Column I, there is some scope to the findings that suggest persistence of earnings conservatism is likely to be more prevalent in some industries than others.

Table 7.20: Regression analysis of earnings persistence

	Industry Category									
	Column I: Constructions		Column II: Consumer Products		Column III: Industrial Product		Column IV: Trading & Services		Column V: Others	
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.099	0.331	3.367	1.616	0.018	0.187	0.134	0.839	0.182	2.546
$NEG\Delta OPI_{i,t-1}$	-0.241	-0.961	1.993	0.986	0.012	0.131	0.023	0.153	0.056	1.016
$\Delta OPI_{i,t-1}$	-0.004	-0.041	5.552	6.383‡	-0.064	-0.697	-0.690	-5.255‡	-0.011	-0.077
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-1.254	-5.886‡	-5.485	-4.410‡	-0.948	-7.043‡	0.511	2.644‡	-0.005	-0.035
Year 2002	0.024	0.059	-7.409	-2.346†	-0.060	-0.407	-0.203	-0.869	-0.149	-1.641
Year 2003	-0.143	-0.358	-4.861	-1.574	0.006	0.040	-0.057	-0.251	-0.154	-1.724$^{\Psi}$
Year 2004	-0.098	-0.242	-4.747	-1.556	-0.010	-0.075	0.228	1.014	-0.206	-2.305†
Year 2005	-0.024	-0.062	-3.837	-1.303	-0.305	-2.231†	-0.223	-0.996	-0.219	-2.460†
Year 2006	0.525	1.331	-6.292	-2.003†	-0.038	-0.274	-0.050	-0.221	-0.328	-3.665‡
Adjusted R²	0.287		0.280		0.476		0.256		0.072	
F-Value	5.870‡		5.920‡		15.650‡		4.999‡		2.290†	
N	98		102		129		95		133	

Legend:

Column I, II, III, IV and V: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \beta_0 \Delta OPI_{i,t-1} + \beta 1 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \sum \gamma_t + \varepsilon_{i,t}$ *where:* see equations in Table 6.2 for definitions of all variables; and Ψ, $\dagger$, $\square$ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.21 presents results of statistical analysis of the association between direct custodian excellence and the timeliness of earnings conservatism taking into consideration possible cross-sectional variations across different industry sectors. Findings are compared to Table 6.4 Column I findings.

Directionality of the coefficients of the seven variables of interest presented in Table 7.21 Column I, Column II and Column V mirror precisely that of the main findings reported in Table 6.4 Column I. As for the regression results using the *Industrial Products* industry firm-year observations, the directionality of six of the seven coefficients also mirror that of the main findings (see Table 7.21 Column II and Table 6.4 Column I respectively). The only discrepancy is the coefficient on $\Delta OPI_{i,t-1}$ that is positive in Table 7.21 Column III results but negative in the corresponding main results (see Table 6.4 Column I). As for the regression using firm-year observations from the *Trading & Services* industry sector (see Table 7.21 Column IV), the coefficients on all the variables except $NEG\Delta OPI_{i,t-1}$ are in the opposite direction to that reported in the main findings (see Table 6.4 Column I).

In terms of the significance of the coefficients reported in Table 7.21 Column I, relative to Table 6.4 Column I (PS) findings, there is only a single variation. Specifically, the coefficient on $DCE_{i,t}$ is significant at conventional levels (i.e. p<0.10) in the regression using the *Construction* industry sector firm-year observations but insignificant from zero in the main findings (see Table 6.4 Column I). Meanwhile, the coefficients on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ are insignificant from zero in regressions using only the *Consumer Products* and *Others* industry sectors respectively (see Table 7.21 Column II and Column V). In contrast the coefficients on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ are significant at the 1% confidence level in the main regression model results (see Table 6.4 Column I).

The coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$ is also insignificant from zero in the regressions including the firm-year observations from the *Industrial Products* and *Trading & Services* industry sectors (see Table 7.21 Column III and Column IV). This again is contrary to Table 6.4 Column I (PS) findings. Finally, in respect to $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*DCE_{i,t}$ variables, coefficients in industry specific regressions involving the *Industrial Products*, *Trading & Services* and *Others* industry sectors (see Table 7.21 Column III, Column IV and Column V) are insignificant from zero. This is contrary to the main findings reported in Table 6.4 Column I where the coefficients on $\Delta OPI_{i,t-1}$ and $\Delta OPI_{i,t-1}*DCE_{i,t}$ are significant at the 1% confidence level.

Table 7.21: Regression analysis of $DCE_{i,t}$ and earnings persistence

	Column I: Constructions		Column II: Consumer Products		Column III: Industrial Product		Column IV: Trading & Services		Column V: Others	
Industry Category										
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	-0.624	-1.513	1.894	0.454	-0.044	-0.256	0.441	1.527	0.158	1.264
$NEG\Delta OPI_{i,t-1}$	0.688	1.160	2.484	0.398	0.001	0.002	0.066	0.128	0.059	0.346
$DCE_{i,t}$	0.207	1.913 $^{\Psi}$	0.242	0.227	0.020	0.448	-0.084	-1.287	0.004	0.169
$NEG\Delta OPI_{i,t-1}*DCE_{i,t}$	-0.218	-1.323	-0.420	-0.243	0.006	0.073	0.004	0.031	-0.001	-0.013
$\Delta OPI_{i,t-1}$	9.899	10.853‡	28.114	4.966‡	0.589	0.729	-1.190	-2.863†	0.155	0.472
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-12.412	-10.410‡	-31.571	-1.533	-1.804	-2.023†	1.110	1.942 $^{\Psi}$	-0.575	-1.062
$\Delta OPI_{i,t-1}*DCE_{i,t}$	-2.490	-10.853‡	-6.728	-4.025‡	-0.219	-0.812	0.219	1.221	-0.049	-0.571
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$	2.828	9.205‡	7.589	1.451	0.314	0.987	-0.247	-1.091	0.184	1.101
Year 2002	-0.081	-0.293	-7.274	-2.432†	-0.046	-0.301	-0.250	-1.045	-0.124	-1.313
Year 2003	-0.176	-0.666	-3.597	-1.230	-0.004	-0.025	-0.130	-0.547	-0.145	-1.575
Year 2004	-0.299	-1.113	-3.544	-1.227	-0.002	-0.014	0.194	0.848	-0.200	-2.135†
Year 2005	-0.074	-0.288	-3.030	-1.060	-0.294	-2.111†	-0.244	-1.080	-0.215	-2.386†
Year 2006	0.037	0.143	-3.487	-1.147	-0.028	-0.200	-0.072	-0.308	-0.315	-3.447‡
Adjusted R²	0.708		0.367		0.463		0.245		0.054	
F-Value	20.598‡		5.873‡		10.257‡		3.514‡		1.628	
N	98		102		129		95		133	

Legend:
Column I, II, III, IV and V: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 DCE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*DCE_{i,t} + \beta_0 \Delta OPI_{i,t-1} + \beta_1 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2 \Delta OPI_{i,t-1}*DCE_{i,t} + \beta_3 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; where: see equations in Table 6.4 for definitions of all variables; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.21 results indicate isolating the analysis to specific industry sectors can produce differing findings on the persistence of earnings conservatism within the Malaysian capital market and in particular the impact of direct custodian excellence. In terms of Table 7.21 findings related to the three-way interaction term $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*DCE_{i,t}$, results suggest direct custodian excellence is associated with the persistence of earnings conservatism only in terms of the *Construction* industry. Main findings shown in Table 6.4 Column I, however, infer direct custodian excellence is a factor significantly associated with the persistence of earnings conservatism across the Malaysian capital market as a whole. Thus, when considering Table 6.4 Column I and Table 7.21 findings, one may conclude direct custodian excellence is a determinant of the persistence of earnings conservatism for the market in general but is likely to be more prominent in some industry sectors than others.[57]

7.7 Individual component of $AQ_{i,t}$ and $ACE_{i,t}$

The main results reported in Chapter 6, and the robustness and sensitivity tests reported thus far in Chapter 7, use composite index scores for direct custodian excellence, auditor quality and audit committee effectiveness. This section details results of sensitivity tests conducted using individual features of audit quality and audit committee effectiveness.

7.7.1 $AQ_{it,}$ components and timeliness of earnings conservatism

Table 7.22 presents empirical results of regression analysis testing the association between the timeliness of earnings conservatism and individual features of auditor quality—that is, (a) auditor independence (see Table 7.22 Column I), (b) auditor brand name (see Table 7.22 Column II), and (c) industry specialization (see Table 7.22 Column III).

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[57] The discussion in Chapter 7 Section 7.6 only addresses the potential influence of cross-sectional variations in industry sectors in regards to association between direct custodian excellence and (a) timeliness of earnings conservatism, and (b) persistence of earnings conservatism. Additional tests were performed considering the impact of industry differences on the association between auditor quality and audit committee effectiveness on both the timeliness and persistence of earnings conservatism. Results of these additional tests yield findings and conclusions consistent with that presented in Chapter 7 Section 7.6 in relation to direct custodian excellence. For purposes of brevity the additional analysis related to auditor quality and audit committee effectiveness is not incorporated in the main text. Rather, tabulated findings and discussion is provided in Appendix F.

Table 7.22: Individual $AQ_{i,t}$ components and earnings timeliness

	Individual Component					
	Column I: *Independence (Fees)*		**Column II:** *Brand Name*		**Column III:** *Specialization*	
	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.117	3.405	0.085	2.324	0.109	3.340
$NEGRET_{i,t}$	0.031	0.684	0.018	0.389	0.032	0.862
$RET_{i,t}$	0.052	3.100[‡]	0.034	1.351	0.036	1.489
$RET_{i,t}*NEGRET_{i,t}$	0.353	3.252[‡]	0.232	2.140[†]	0.314	3.518[‡]
$FEE_{i,t}$	-0.014	-0.369				
$NEGRET_{i,t}*FEE_{i,t}$	-0.021	-0.328				
$RET_{i,t}*FEE_{i,t}$	-0.061	-1.135				
$RET_{i,t}*NEGRET_{i,t}*FEE_{i,t}$	-0.133	-0.868				
$BN_{i,t}$			0.019	0.544		
$NEGRET_{i,t}*BN_{i,t}$			0.025	0.407		
$RET_{i,t}*BN_{i,t}$			0.025	0.766		
$RET_{i,t}*NEGRET_{i,t}*BN_{i,t}$			0.020	0.135		
$SP_{i,t}$					-0.025	-0.705
$NEGRET_{i,t}*SP_{i,t}$					-0.008	-0.154
$RET_{i,t}*SP_{i,t}$					0.024	0.743
$RET_{i,t}*NEGRET_{i,t}*SP_{i,t}$					-0.127	-1.318
Year 2002	-0.057	-1.572	-0.059	-1.631	-0.062	-1.703 [Ψ]
Year 2003	-0.074	-2.057[†]	-0.074	-2.064[†]	-0.074	-2.065[†]
Year 2004	-0.013	-0.380	-0.012	-0.325	-0.013	-0.365
Year 2005	-0.065	-1.863 [Ψ]	-0.065	-1.846 [Ψ]	-0.066	-1.874 [Ψ]
Year 2006	-0.075	-2.114[†]	-0.072	-2.015[†]	-0.075	-2.083[†]
Adjusted R²	0.062		0.058		0.057	
F-Value	4.050[‡]		3.842[‡]		3.796[‡]	
N	557		557		557	

Legend:
Regression results based on following model: (a) Column I—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 FEE_{i,t} + \alpha_3 NEGRET_{i,t}*FEE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*FEE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*FEE_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; (b) Column II—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 BN_{i,t} + \alpha_3 NEGRET_{i,t}*BN_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*BN_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*BN_{i,t} + \sum\gamma_t + \varepsilon_{i,t}.$; and (c) Column III—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 SP_{i,t} + \alpha_3 NEGRET_{i,t}*SP_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*SP_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*SP_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$; where: $FEE_{i,t}$ = ratio of non-audit services to total audit fees (i.e. fees paid for audit and non-audit services) of firm j in time t is less than 0.20; $BN_{i,t}$ = external auditor of firm i in time t is an industry specialist; and $SP_{i,t}$ = external auditor is a *Big 4* audit firm (PWC, EY, Delloitte or KPMG); For definitions of other variables, see equations in Table6.1; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Of the three regressions reported in Table 7.22, the focus on auditor independence has the highest explanatory power, whilst that concentrating on industry specialization the lowest (i.e. 6.20 % versus 5.70%). Overall, the explanatory power of the three regressions shown in Table 7.22 is higher than for related main results shown in Table 6.5 Column I (i.e. 5.40%).

The directionality of coefficients on the three primary variables forming the basic Basu (1997) timeliness of earnings conservatism model (i.e. $NEGRET_{i,t}$, $RET_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$) are positive across all regressions reported in Table 7.22. This result is consistent with the statistical result reported in Table 6.5 Column I). The significance of the coefficients, however, is mixed. For instance, the coefficient on $RET_{i,t}$ is significant (i.e. <0.01) in the regression focusing on auditor independence but statistically insignificant from zero for both regressions concentrating on auditor brand name and industry specialization.

In testing the association between the timeliness of earnings and auditor independence, four variables are of prime interest; that is, $FEE_{i,t}$, $NEGRET_{i,t}*FEE_{i,t}$, $RET_{i,t}*FEE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*FEE_{i,t}$. As for auditor brand name (industry specialization) the four variables of interest are $BN_{i,t}$, $NEGRET_{i,t}*BN_{i,t}$, $RET_{i,t}*BN_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*BN_{i,t}$ ($SP_{i,t}$, $NEGRET_{i,t}*SP_{i,t}$, $RET_{i,t}*SP_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*SP_{i,t}$). The coefficients on the four auditor independence associated variables (i.e. $FEE_{i,t}$, $NEGRET_{i,t}*FEE_{i,t}$, $RET_{i,t}*FEE_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*FEE_{i,t}$) in Table 7.22 Column I are negative and statistically insignificant from zero. In contrast, the coefficients on $BN_{i,t}$, $NEGRET_{i,t}*BN_{i,t}$, $RET_{i,t}*BN_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*BN_{i,t}$ are all positive but statistically insignificant at conventional levels (see Table 7.22 Column II). Finally, the coefficients on $SP_{i,t}$, $NEGRET_{i,t}*SP_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}*SP_{i,t}$ are negative and insignificant from zero whilst the coefficient on $RET_{i,t}*SP_{i,t}$ is positive and insignificant (see Table 7.22 Column III).

Overall, Table 7.22 results imply auditor independence, auditor brand name and industry specialization are not significantly associated with the timeliness of earnings conservatism. These results reinforce the perception indicated in Table 6.5 Column I results that auditor quality does not appear to influence the timeliness of earnings conservatism.

Table 7.23, meanwhile, presents results of the empirical analysis testing the influence of the three individual components of auditor quality (i.e. auditor independence, auditor brand name and diligence) on the persistence of earnings conservatism. Of the three regressions presented in Table 7.23, the explanatory of those focusing on auditor independence, or industry specialization, are highly comparable (i.e. 27.90 and 28.00% respectively). Meanwhile, only 18.40% of the variation in the dependent variable is explained by variables focusing on auditor brand name. Overall, the explanatory power of the three models shown in Table 7.23 is higher than that of the main associated findings (see Table 6.6 Column I).

Table 7.23: Individual $AQ_{i,t}$ components and earnings persistence

	Individual Component					
	Column I: *Independence (Fees)*		**Column II:** *Brand Name*		**Column III:** *Specialization*	
	β	*t*-stat	β	*t*-stat	β	*t*-stat
(Constant)	0.304	0.635	0.848	1.682	0.741	1.723
$NEG\Delta OPI_{i,t}$	0.612	1.145	0.082	0.144	0.052	0.118
$\Delta OPI_{i,t}$	5.747	14.639[‡]	-0.123	-0.381	-0.122	-0.459
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$	-6.050	-12.996[‡]	-0.663	-1.037	-0.815	-1.628
$FEES_{i,t}$	0.302	0.694				
$NEG\Delta OPI_{i,t}*FEES_{i,t}$	-0.404	-0.586				
$\Delta OPI_{i,t}*FEES_{i,t}$	-5.656	-12.082[‡]				
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*FEES_{i,t}$	5.833	9.017[‡]				
$BN_{i,t}$			-0.314	-0.676		
$NEG\Delta OPI_{i,t}*BN_{i,t}$			0.406	0.550		
$\Delta OPI_{i,t}*BN_{i,t}$			3.752	8.220[‡]		
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*BN_{i,t}$			-3.114	-4.119[‡]		
$SP_{i,t}$					-0.454	-1.028
$NEG\Delta OPI_{i,t}*SP_{i,t}$					0.521	0.746
$\Delta OPI_{i,t}*SP_{i,t}$					5.424	12.038[‡]
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*SP_{i,t}$					-4.538	-6.850[‡]
Year 2002	-1.244	-2.181[†]	-1.281	-2.112[†]	-1.300	-2.286[†]
Year 2003	-0.902	-1.632	-1.176	-2.000[†]	-0.777	-1.410
Year 2004	-0.726	-1.315	-0.997	-1.696[Ψ]	-0.741	-1.343
Year 2005	-1.014	-1.868[Ψ]	-0.988	-1.710[Ψ]	-0.859	-1.585
Year 2006	-0.598	-1.095	-1.010	-1.732[Ψ]	-0.978	-1.787[Ψ]
Adjusted R²	0.279		0.184		0.280	
F-Value	18.926[‡]		11.444[‡]		18.978[‡]	
N	557		557		557	

Legend:
Regression results based on following model: (a) Column I—$OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t} + \alpha_2 FEES_{i,t} + \alpha_3 NEG\Delta OPI_{i,t}* FEES_{i,t} + \beta_0 \Delta OPI_{i,t} + \beta_1 \Delta OPI_{i,t}* NEG\Delta OPI_{i,t} + \beta_2 \Delta OPI_{i,t}* FEES_{i,t} + \beta_3 \Delta OPI_{i,t}* NEG\Delta OPI_{i,t}* FEES_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; (b) Column II—$OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t} + \alpha_2 BN_{i,t} + \alpha_3 NEG\Delta OPI_{i,t}*BN_{i,t} + \beta_0 \Delta OPI_{i,t} + \beta_1 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t} + \beta_2 \Delta OPI_{i,t}*BN_{i,t} + \beta_3 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*BN_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; and (c) Column III—$OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t} + \alpha_2 SP_{i,t} + \alpha_3 NEG\Delta OPI_{i,t}*SP_{i,t} + \beta_0 \Delta OPI_{i,t} + \beta_1 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t} + \beta_2 \Delta OPI_{i,t}*SP_{i,t} + \beta_3 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*SP_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; where: $FEE_{i,t}$; $BN_{i,t}$ and $SP_{i,t}$ = see definitions in *Table 7.22*. For other variables, see equations in Table 6.2; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Comparative to the main findings reported in Table 6.6 Column I using the auditor quality composite score, the directionality and significance of the coefficients on the three variables forming the basic Basu (1997) persistence of earnings conservatism model (i.e. $NEG\Delta OPI_{i,t}$, $\Delta OPI_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$) is somewhat mixed. Specifically, the coefficients on $NEG\Delta OPI_{i,t}$ are positive and insignificant from zero in the three regressions tabulated in Table 7.23. In contrast, the coefficient on $NEG\Delta OPI_{i,t}$ in the main corresponding findings is negative and insignificant (see Table 6.6 Column I). In the regression considering auditor brand name (see Table 7.23 Column II) the coefficient on $\Delta OPI_{i,t}$ is positive and statistically significant at conventional levels (i.e. p<0.01). In the main corresponding results (see Table 6.6 Column I) the coefficient on $\Delta OPI_{i,t}$ is negative and statistically insignificant. Finally, whilst the directionality of the $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$ coefficient for the regression focusing on auditor independence is the same as the main findings (see Table 6.6 Column I), the former is statistically significant whereas the latter is not significant.

In the regression focusing on the auditor independence/persistence of earnings conservatism association (see Table 7.23 Column I) there are four variables of primary relevance. These are: $FEES_{i,t}$, $NEG\Delta OPI_{i,t}*FEES_{i,t}$, $\Delta OPI_{i,t}*FEES_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*FEES_{i,t}$. The directionality of the coefficients on these four variables in the Table 7.23 Column I findings are the reverse of that for the main associated results tabulated in Table 6.6 Column I. However, the coefficients on $FEES_{i,t}$ and $NEG\Delta OPI_{i,t}*FEES_{i,t}$ ($\Delta OPI_{i,t}*FEES_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*FEES_{i,t}$) are insignificant (significant) just as are the coefficients on the corresponding main findings in Table 6.6 Column I.

Meanwhile, the coefficients on the four variables addressing the (a) auditor brand name/persistence of earnings conservatism associations (i.e. $BN_{i,t}$, $NEG\Delta OPI_{i,t}*BN_{i,t}$, $\Delta OPI_{i,t}*BN_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*BN_{i,t}$) and (b) audit firm specialization/persistence of earnings conservatism (i.e. $SP_{i,t}$, $NEG\Delta OPI_{i,t}*SP_{i,t}$, $\Delta OPI_{i,t}*SP_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*SP_{i,t}$) associations all have the same direction and significance as the corresponding tabulated main findings (see Table 6.6 Column I).

Overall, Table 7.23 findings suggest auditor brand name and audit firm specialization (auditor independence) influence the persistence of earnings conservatism in a similar (dissimilar) manner as when the composite perspective of auditor quality is used

7.7.2 $ACE_{i,t}$ components and timeliness of earnings conservatism

As for Table 7.24, information tabulated relates to empirical analysis testing the association between three individual features of audit committee effectiveness (that made up the associated composite score) and the timeliness of earnings conservatism. The three audit

committee attributes are audit committee independence, financial expertise and committee diligence.

Table 7.24: Individual $ACE_{i,t}$ components and earnings timeliness

	Individual Component					
	Column I: *Independence*		**Column II:** *Expertise*		**Column III:** *Diligence*	
	β	*t*-stat	β	*t*-stat	β	*t*-stat
(Constant)	-0.004	-0.044	0.085	2.636	0.040	1.076
$NEGRET_{i,t}$	0.057	0.390	0.029	0.775	0.093	1.918$^{\Psi}$
$RET_{i,t}$	0.245	3.486‡	0.059	3.378‡	0.075	3.463‡
$RET_{i,t}*NEGRET_{i,t}$	-0.148	-0.403	0.214	2.364†	0.231	2.056†
$IND_{i,t}$	0.108	1.290				
$NEGRET_{i,t}*IND_{i,t}$	-0.027	-0.182				
$RET_{i,t}*IND_{i,t}$	-0.206	-2.857‡				
$RET_{i,t}*NEGRET_{i,t}*IND_{i,t}$	0.412	1.100				
$EXP_{i,t}$			0.052	1.303		
$NEGRET_{i,t}*EXP_{i,t}$			-0.005	-0.077		
$RET_{i,t}*EXP_{i,t}$			-0.059	-1.401		
$RET_{i,t}*NEGRET_{i,t}*EXP_{i,t}$			0.128	0.828		
$DIL_{i,t}$					0.093	2.574†
$NEGRET_{i,t}*DIL_{i,t}$					-0.101	-1.643
$RET_{i,t}*DIL_{i,t}$					-0.056	-1.743$^{\Psi}$
$RET_{i,t}*NEGRET_{i,t}*DIL_{i,t}$					0.035	0.236
Year 2002	-0.058	-1.593	-0.058	-1.592	-0.055	-1.527
Year 2003	-0.074	-2.076†	-0.072	-2.016†	-0.074	-2.075†
Year 2004	-0.012	-0.333	-0.009	-0.262	-0.010	-0.280
Year 2005	-0.066	-1.876$^{\Psi}$	-0.065	-1.844$^{\Psi}$	-0.063	-1.780$^{\Psi}$
Year 2006	-0.083	-2.322†	-0.073	-2.048†	-0.067	-1.869$^{\Psi}$
Adjusted R²	0.067		0.058		0.065	
F-Value	4.348‡		3.872‡		4.198‡	
N	557		557		557	

Legend:

Regression results based on following model: (a) Column I—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 IND_{i,t} + \alpha_3 NEGRET_{i,t}*IND_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*IND_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*IND_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; (b) Column II—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 EXP_{i,t} + \alpha_3 NEGRET_{i,t}*EXP_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*EXP_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*EXP_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; and (c) Column III—$OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 DIL_{i,t} + \alpha_3 NEGRET_{i,t}*DIL_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*DIL_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*DIL_{i,t} + \sum \gamma_t + \varepsilon_{i,i}$; where: $IND_{i,t}$ = audit committee of firm i in time period t is comprised mainly of non-executive independent directors; $EXP_{i,t}$ = at least one of the non-executive independent directors on the audit committee of firm i in time period t is suitably qualified and accredited to be deemed a financial accounting expert (i.e. a degree in accounting and a member of a professional accounting body); and $DIL_{i,t}$ = during the time period t the audit committee of firm i met five times or more; see equations in Table 6.1 for definitions of other variables; and Ψ, $\dagger$, $\ddagger$ = significant at the 0.10, 0.05 and 0.01 confidence levels.

The explanatory power of the regression focusing on audit committee independence (see Table 7.24 Column I) is the highest amongst the three regressions shown in Table 7.24. In contrast, the regression related to audit committee expertise (see Table 7.24 Column II) had the lowest explanatory power.

Directionality of the coefficients on $NEGRET_{i,t}$, $RET_{i,t}$, $IND_{i,t}$, and $RET_{i,t}*NEGRET_{i,t}*IND_{i,t}$ are positive in the regression results noted in Table 7.24 Column I. In contrast, the coefficients on $RET_{i,t}*NEGRET_{i,t}$, $NEGRET_{i,t}*IND_{i,t}$ and $RET_{i,t}*NEGRET_{i,t}$ are negative. These findings are consistent with results shown in Table 6.7 Column I. In contrast to the main findings (see Table 6.7 Column I), the directionality of the coefficient on $RET_{i,t}*NEGRET_{i,t}$ is negative in Table 7.24 Column I rather than positive

In terms of significance, the majority of coefficients on Table 7.24 Column I variables of interest that focus on auditor independence are consistent with corresponding coefficients for the main associated findings tabulated in the Table 6.7 Column I. For instance, the coefficients on $RET_{i,t}$ and $RET_{i,t}*IND_{i,t}$ are significant at the 1% confidence level in Table 7.24 Column I which is consistent with the main findings using the composite score index (i.e. $RET_{i,t}$ and $RET_{i,t}*ACE_{i,t}$; Table 6.7 Column I). However, the coefficient on $ACE_{i,t}$ is statistically significant (i.e. p<0.01; see Table 6.7 Column I) when using the full composite score for auditor quality but insignificant from zero for the corresponding variable (i.e. $IND_{i,t}$) when considering auditor committee independence in isolation (see Table 7.24 Column I).

As for audit committee expertise (see Table 7.24 Column II), the directionality of the coefficients across the seven variables of interest are consistent with results shown in Table 6.7 Column I (PS). However, the significance of the coefficients on Table 7.24 Column II results relative to Table 6.7 Column I (PS) findings are mixed. As reported in Table 6.7 Column I (PS) the coefficients on $RET_{i,t}$, $ACE_{i,t}$ and $RET_{i,t}*ACE_{i,t}$ are statistically significant at conventional levels (i.e. p<0.01). However, when using individual scores for audit committee expertise rather than the composite score, only the coefficients on the corresponding variables of $RET_{i,t}$ and $RET_{i,t}*IND_{i,t}$ are statistically significant (i.e. p<0.01 and p<0.05 respectively; see Table 7.24 Column II). Coefficients on all remaining variables in Table 7.24 Column II are insignificant from zero.

Similar to Table 7.24 Column II results, directionality on the coefficients across the seven variables in the regression test considering the influence of audit committee diligence (see Table 7.24 Column III) on the timeliness of earnings conservatism are consistent with the main results shown in Table 6.7 Column I. In term of significance, coefficients on $NEGRET_{i,t}$, $RET_{i,t}$, $RET_{i,t}*NEGRET_{i,t}$, $DIL_{i,t}$ and $RET_{i,t}*DIL_{i,t}$ in Table 7.24 Column III are significant at conventional levels. In comparison, only the coefficients on $RET_{i,t}$, $ACE_{i,t}$ and

$RET_{i,t}*ACE_{i,t}$ (corresponding variables in main findings to $RET_{i,t}$, $DIL_{i,t}$ and $RET_{i,t}*DIL_{i,t}$) are statistically significant in Table 6.7 Column I (PS) results.

Findings reported in Table 7.24 highlight some variations relative to the main findings when the analysis focuses on individual components of audit committee effectiveness (as opposed to a composite score). However, Table 7.24 findings are consistent with the main findings (see Table 6.7 Column I) in respect to influence on the timeliness of earnings conservatism. Specifically, consistent with Table 6.7 Column I findings, results in Table 7.24 suggest audit committee independence, audit committee expertise and audit committee diligence are not individually (or collectively) significantly associated with the timeliness of earnings conservatism.

Table 7.25 presents regression results of analysis testing the association between the persistence of earnings conservatism and the three individual components of audit committee effectiveness (i.e. independence, expertise and diligence). The regression focusing on audit committee diligence yields the highest explanatory power (see Table 7.22 Column III) with approximately 21.60% of the variation in the dependent variable $\Delta OPI_{i,t}$ explained. In contrast, the regression focusing on audit committee independence had the lowest explanatory power (see Table 7.25 Column I; 8.10%).

As reported in Table 7.25 Column I, the coefficients on three variables (i.e. $\Delta OPI_{i,t}$, $\Delta OPI_{i,t}*IND_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*IND_{i,t}$) are positive. The directionality of each coefficient on the seven variables reported in Table 7.25 Column I mirror corresponding variables of the main results using the composite score for audit committee effectiveness (Table 6.7 Column I). None of the coefficients on the seven variables comprising the regression tabulated in Table 7.25 Column I, however, are significant at conventional levels. This contrasts to the main results using the composite score of audit committee effectiveness (see Table 6.8 Column I) where four variables (i.e. $\Delta OPI_{i,t}$, $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$, $\Delta OPI_{i,t}*ACE_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*ACE_{i,t}$) are statistically significant (i.e. $p<0.01$).

Table 7.25: Individual $ACE_{i,t}$ components and earnings persistence

	Individual Component					
	Column I: *Independence*		**Column II:** *Expertise*		**Column III:** *Diligence*	
	β	*t*-stat	β	*t*-stat	β	*t*-stat
(Constant)	1.086	0.851	0.562	1.233	0.130	0.251
$NEG\Delta OPI_{i,t}$	-0.325	-0.169	0.418	0.925	0.574	0.988
$\Delta OPI_{i,t}$	0.167	0.136	3.365	10.762[‡]	4.228	12.352[‡]
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$	-1.956	-0.277	-3.415	-8.631[‡]	-4.344	-10.421[‡]
$IND_{i,t}$	-0.599	-0.475				
$NEG\Delta OPI_{i,t}*IND_{i,t}$	0.613	0.312				
$\Delta OPI_{i,t}*IND_{i,t}$	1.650	1.321				
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*IND_{i,t}$	-0.106	-0.015				
$EXP_{i,t}$			0.213	0.441		
$NEG\Delta OPI_{i,t}*EXP_{i,t}$			-0.390	-0.508		
$\Delta OPI_{i,t}*EXP_{i,t}$			-3.461	-7.523[‡]		
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*EXP_{i,t}$			2.321	3.139[‡]		
$DIL_{i,t}$					0.447	0.962
$NEG\Delta OPI_{i,t}*DIL_{i,t}$					-0.589	-0.803
$\Delta OPI_{i,t}*DIL_{i,t}$					-4.326	-9.567[‡]
$\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*DIL_{i,t}$					3.596	5.012[‡]
Year 2002	-0.935	-1.453	-1.214	-1.994[†]	-0.932	-1.573
Year 2003	-0.892	-1.428	-1.085	-1.837[Ψ]	-0.610	-1.060
Year 2004	-0.727	-1.163	-0.872	-1.471	-0.638	-1.105
Year 2005	-0.947	-1.546	-1.116	-1.920[Ψ]	-0.613	-1.079
Year 2006	-0.632	-1.024	-0.945	-1.612	-0.655	-1.149
Adjusted R²	0.081		0.173		0.216	
F-Value	5.065[‡]		10.718[‡]		13.732[‡]	
N	557		557		557	

Legend:

Regression results based on following model: (a) Column I—$OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t} + \alpha_2 IND_{i,t} + \alpha_3 NEG\Delta OPI_{i,t}*IND_{i,t} + \beta_0 \Delta OPI_{i,t} + \beta_1 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t} + \beta_2 \Delta OPI_{i,t}*IND_{i,t} + \beta_3 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*IND_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; (b) Column II—$OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t} + \alpha_2 EXP_{i,t} + \alpha_3 NEG\Delta OPI_{i,t}*EXP_{i,t} + \beta_0 \Delta OPI_{i,t} + \beta_1 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t} + \beta_2 \Delta OPI_{i,t}*EXP_{i,t} + \beta_3 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*EXP_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; and (c) Column III—$OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t} + \alpha_2 DIL_{i,t} + \alpha_3 NEG\Delta OPI_{i,t}*DIL_{i,t} + \beta_0 \Delta OPI_{i,t} + \beta_1 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t} + \beta_2 \Delta OPI_{i,t}*DIL_{i,t} + \beta_3 \Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*DIL_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$; where: $IND_{i,t}$; $EXP_{i,t}$ and $DIL_{i,t}$ = see definitions in *Table 7.24*. For other variables, see equations in Table 6.2; and Ψ, †, ☐ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table 7.25 Column II and Column III results indicate indifferent results in terms of the directionality and significance of the coefficients on the variables of interest relative to the main results tabulated in Table 6.8 Column I (PS). The coefficients on three variables from Table 7.25 Column II (i.e. $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$, $NEG\Delta OPI_{i,t}*EXP_{i,t}$ and $\Delta OPI_{i,t}*EXP_{i,t}$) and Table 7.25 Column III (i.e. $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$, $NEG\Delta OPI_{i,t}*DIL_{i,t}$ and $\Delta OPI_{i,t}*DIL_{i,t}$) are negative with all others being positive Moreover, Table 7.25 Column II (Column III) report the coefficients on $\Delta OPI_{i,t}$, $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$, $\Delta OPI_{i,t}*EXP_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*EXP_{i,t}$ ($\Delta OPI_{i,t}$, $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}$, $\Delta OPI_{i,t}*DIL_{i,t}$ and $\Delta OPI_{i,t}*NEG\Delta OPI_{i,t}*DIL_{i,t}$) are statistically significant at conventional levels (i.e. $p<0.01$). The coefficients on the remaining variables in Table 7.25 Column II and Column III are insignificant from zero. Results related to the variables in Table 7.25 Column II and Column III with significant coefficients are very similar to the main results using the composite index score of audit committee effectiveness (see Table 6.8 Column I).

In summary, Table 6.8 Column I (PS) results infer a significant association between audit committee effectiveness and the persistence of earnings conservatism. Further analysis of the individual components of audit committee effectiveness tabulated in Table 7.25 suggest the audit committee effectiveness/persistence of earnings conservatism results appears to be driven by audit committee expertise and diligence with independence a non-factor.

7.8   Conclusion

This chapter reported results of various sensitivity and robustness tests conducted to determine any impact on the main findings reported in Chapter 6. Such tests included: (a) use alternative measure earnings conservatism; (b) alternative measures of earnings and return; (c) revised composite scores computed after excluding auditor brand name and industry specialization; (d) industry and auditor classification (*Big 4* and *Non-Big 4*); and (e) individual audit quality and audit committee effectiveness components. The additional analysis provides further insights into main relationships examined in this study. Chapter 8, meanwhile, provides a summary of the study and findings. Discussion on the acceptance or rejection of the study's testable hypotheses is outlined. In addition, implications from the analysis are discussed in respect to methodology, future research, and the competing interests of investors, regulators, practitioners and corporate management.

CHAPTER 8   CONCLUSIONS AND IMPLICATIONS

8.1   Study overviews

Lingering earnings quality concerns have plagued the Asian business environment since the 1997–1998 Asian financial crisis. Such concerns have led to calls for increased reliance and application of conservative accounting practices to improve earnings quality. Another major concern resulting from the 1997–1998 Asian financial crisis that received enormous attention during the past decade and a half, is the standard of corporate governance across nations within the Asian region. Whilst significant changes to corporate governance regulations within Asia have been implemented, questions remain about whether effective consequences resulted. Some academic scholars, regulators and business practitioners suggest corporate governance mechanisms can have a profound influence on conservative accounting practices leading to improvements in earnings quality. Empirical tests of these views are currently limited with findings mixed. In light of the changing corporate governance landscape in Asia following the 1997–1998 Asian financial crisis, an important open empirical question on whether newly introduced regulations affecting corporate mechanisms influenced conservative accounting practices persists.

Malaysia provides an opulent and timely setting for testing empirical questions related to conservative accounting practices and corporate governance mechanisms. To restore investor and shareholder confidence in wake of the 1997–1998 Asian financial crisis, Malaysian capital market regulators and government authorities developed and implemented the Malaysian Code of Corporate Governance (*The Code*) in 2000. *The Code* provides a set of principles and best practices on corporate governance. Significant emphasis is given to two mechanisms—the external auditor and audit committee—that can directly affect the financial accounting process, including conservative accounting practices. An implicit implication of *The Code* is that the financial reporting process will be enhanced by the engagement of a higher quality auditor and development of an effective audit committee. Subsequent revisions of *The Code* following other financial accounting scandals (e.g. Enron, Parmalat) has only served to further supplement these views.This study's main objective, therefore, is to examine whether, as direct custodians of the financial reporting process, the quality of the external auditor and effectiveness of the audit committee, are associated with conservative accounting practices, specificallythe extent and nature of earnings conservatism amongst Malaysian public listed firms.

Utilizing agency theory as the underlying theoretical framework, it is proposed in this thesis that a Malaysian publicly listed firm with higher direct custodian excellence (i.e. higher auditor quality and audit committee effectiveness) will display significantly higher

earnings conservatism than a counterpart with lower levels of direct custodian excellence. For this study direct custodian excellence is considered a function of auditor quality and audit committee effectiveness. There is presently a lack of consensus on a precise measure of auditor quality and audit committee effectiveness. Hence, for this study auditor quality is operationalized in reference to independence, specialization and brand name, whilst audit committee effectiveness is defined in terms of independence, financial expertise and diligence. Earnings conservatism, meanwhile, is defined in respect to timeliness and persistence as proposed by Basu (1997). Empirical analysis is based on a sample of 557 firm-year observations developed from data collected from a randomly selected sample of 100 Malaysian firms listed continuously on the Main Market of the Bursa Malaysia from January 1, 2002 till December 31, 2007. Aside from the main analysis, a series of robustness and sensitivity tests were performed. Conclusions of the statistical analysis on the testable hypotheses are summarized in the next section.

8.2   Summary of major findings

Table 8.1 provides a summary of the general propositions and testable hypotheses formulated and examined. For this study, a general preposition is formulated regarding the underlying association between earnings conservatism and: (a) direct custodian excellence (see Table 8.1 Panel A); (b) auditor quality (see Table 8.1 Panel B); and (c) audit committee effectiveness (see Table 8.1 Panel C). As earnings conservatism is examined both in terms of timeliness and persistence, two testable hypotheses were developed in conjunction with each general proposition. The acceptance or rejection of each testable hypothesis (as determined from the empirical analysis) is also summarized in Table 8.1.

Table 8.1: Acceptance and rejection of all hypotheses

Panel A: Direct custodian excellence (*DCE*) and earnings conservatism

GP_{DCE}—Earnings conservatism will be significantly higher amongst Malaysian publicly listed firms having pivotal direct custodians of the financial reporting system of a higher quality than Malaysian publicly listed firms with pivotal direct custodians of the financial reporting system of lower quality.

Hypothesis	Description	Accepted/Rejected
GH_a	Malaysian publicly listed firms with direct custodian excellence are more likely to be associated with timelier recognition of negative news in reported earnings.	Rejected
GH_b	Malaysian publicly listed firms with direct custodian excellence are more likely to be associated with the persistence of earnings.	Rejected

Panel B: Auditor quality (*AQ*) and earnings conservatism

GP_{AQ}—Earnings conservatism of Malaysian public listed firms engaging the services of a high quality external auditor will be significantly higher than Malaysian public listed firms engaging the services of a low quality external auditor.

Hypothesis	Description	Accepted/Rejected
H_{1a}	Malaysian publicly listed firms with a higher quality external auditor are more likely to be associated with timelier recognition of negative news in reported earnings.	Rejected
H_{1b}	Malaysian publicly listed firms with a higher quality external auditor are more likely to be associated with the persistence of earnings.	Accepted

Panel C: Audit committee effectiveness (*ACE*) and earnings conservatism

GP_{ACE}—Earnings conservatism of Malaysian public listed firms with a more effective audit committee will be significantly higher than Malaysian public listed firms with a less effective audit committee.

Hypothesis	Description	Accepted/Rejected
H_{2a}	Malaysian publicly listed firms with more effective audit committees are more likely to be associated with timelier recognition of negative news in reported earnings.	Rejected
H_{2b}	Malaysian publicly listed firms with more effective audit committees are more likely to be associated with the persistence of earnings.	Rejected

8.2.1   *Hypotheses conclusion—direct custodian excellence*

Based on the discussion presented in earlier chapters of this thesis (see Chapter 2 and 3), it is postulated (see GP_{DCE}) that a Malaysian publicly listed firm subject to higher direct custodian excellence will have higher earnings conservatism, and is expected to be significantly higher relative to a counterpart subject to a lower standard of direct custodian excellence. Based on this proposition, the hypothesis GH_a stipulates a Malaysian publicly listed firm subject to a higher standard of direct custodian excellence is more likely to be associated with timelier recognition of negative news in reported earnings. Meanwhile, GH_b proposed greater persistence of earnings is more likely to be associated with a Malaysian publicly listed firm subject to higher standards of direct custodian excellence.

Results presented in Chapter 6 (see Table 6.1) provide evidence of the timeliness of earnings conservatism within the Malaysian capital market during the period of observation defined in this study. However, as evidenced by the main empirical results reported in

Chapter 6 (see Table 6.3 Column I), the association between direct custodian excellence and the timeliness of earnings conservatism is statistically insignificant. Tests using individual annual periods (i.e. 2002 to 2007) further show the lack of an association between direct custodian excellence and the timeliness of earnings conservatism.[58] Similarly, the majority of sensitivity tests reported in Chapter 7, for example, alternative measures of earnings and returns (see Table 7.6); revised composite score for direct custodian excellence (see Table 7.10), and partitioning into *Big 4* and *Non-Big 4* audit firm samples (see Table 7.15) fail to indicate a statistically significant association between direct custodian excellence and the timeliness of excellence. The only sensitivity test highlighting a significant direct custodian excellence–timeliness of earnings conservatism linkage is when the sample is partitioned into specific industry sectors. However, this is only in regards to the *Industrial Products* industry (see Table 7.23 Column III). Overall, findings from the empirical analysis reported in Chapters 6 and 7 fail to support GH_a; hence, GH_a is rejected.

Empirical results detailed in Chapter 6 (see Table 6.4 Column I) show a significant association between direct custodian excellence and the persistence of earnings conservatism. However, the direction of the association is contrary to expected (i.e. positive rather than negative). This result suggests a Malaysian publicly listed firm subject to lower standards of direct custodian excellence was more likely to be associated with persistent earnings conservatism. The significant positive direct custodian excellence–persistence of earnings conservatism linkage is also noted when limiting the analysis to firm-year observations for the 2004 and 2006 calendar years (see Table 6.4 Column IV and VI). A significant negative association (as predicted) does arise when considering firm-year observations for the 2002 and 2005 calendar years (see Table 6.4 Column II and V).

Generally, robustness and sensitivity tests such asalternative measures of earnings and returns (see Table 7.9 Column II), and partitioning by industry breakdown (see Table 7.27) provides a lack of evidence of a significant negative direct custodian excellence–persistence of earnings conservatism association. It is noted, however, that upon partitioning the sample into firm-year observations when a *Non-Big 4* audit firm is engaged a negative and statistically insignificant (see Table 7.19 Column II) association is found. This suggests that amongst those firms engaging a *Non-Big 4* audit firm, those subject to higher direct custodian excellence were more likely to be associated with persistent earnings conservatism than counterparts where standards of direct custodian excellence are lower. Regardless of

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[58] Results in Table 6.3 Column IV (2004) do highlight a statistically significant association. However, the directionality of the association is contrary to what was expected; thus, the GH_a is again not supported.

this latter result, the main results and the vast majority of subsequent robustness and sensitivity tests support the rejection of GH_b.

8.2.2 Hypotheses conclusion—auditor quality

GP_{AQ} postulates earnings conservatism of a Malaysian public listed firm engaging the services of a high quality external auditor will be significantly higher than a counterpart using the services of an inferior external auditor. Consistent with the tenants of GP_{AQ}, $H_{1a}$was tested to determine if a Malaysian publicly listed firm using a higher quality external auditor was more likely to be associated with the timely recognition of negative news in reported earnings relative to a Malaysian publicly listed firm engaging an external auditor of a lower quality. The main regression results (see Table 6.5 Column I) indicate a statistically insignificant association between the quality of the auditor engaged by Malaysian publicly listed firms and the timeliness of earnings conservatism. The insignificant association persisted when the analysis was limited to firm-year observations from an individual calendar year (see Table 6.5 Column II–Column VI). Additional sensitivity and robustness tests (see Chapter 7) generally support the main finding of a lack of association between auditor quality and timeliness of earnings conservatism within the Malaysian capital market setting. In line with the main results, and supported by the various robustness and sensitivity tests, H_{1a} is rejected.

H_{1b}, meanwhile, also suggests a Malaysian publicly listed firm engaging an audit firm of higher quality is more likely to be associated with persistent earnings conservatism than a counterpart using an audit firm of inferior quality. Consistent with expectations, the main regression results (see Table 6.6 Column I) show a negative and statistically significant association between auditor quality and the persistence of earnings conservatism. Several regressions (see Table 6.6 Column V and VII) focusing on firm-year observations for a specific calendar year show a negative and significant association between auditor quality and earnings conservatism. Robustness and sensitivity test (i.e. using alternative measures of earnings and returns, a revised composite score for auditor quality, partitioning of the full sample by audit firms and industry) results, however, suggest the main findings of a significant auditor quality–persistence of earnings management linkage may be sensitive to measurement and sampling approaches. Consequently, whilst the main findings prompt the acceptance of H_{1b}, caution needs to be applied in assessing the robustness of this finding.

8.2.3 Hypotheses conclusion—audit committee effectiveness

The third major proposition (i.e.GP_{ACE}) focuses on the possible influence of the audit committee on earnings conservatism. Specifically, it is speculated in GP_{ACE} that a firm with a

more effective audit committee is likely to have a greater probability of being associated with higher levels of earnings conservatism than a firm with a less effective audit committee.

Following the underlying tenets of GP_{ACE}, it is stipulated in H_{2a} that Malaysian publicly listed firms with a more effective audit committee, are more likely to be associated with the timelier recognition of negative news in reported earnings. The main empirical results (see Table 6.7 Column I), however, fail to support this hypothesis. Furthermore, the association between audit committee effectiveness and the timeliness of earnings conservatism is found to be insignificant for each individual calendar year transcending the observation period of this study. As for the sensitivity and robustness analysis, results presented in Chapter 7 suggest the audit committee effectiveness–timeliness of earnings conservatism linkage may persist under limited circumstances. For example, when the test sample is limited to firm-year observations associated with the *Industrial Products* industry sector there is a significant positive association between audit committee effectiveness and the timeliness of earnings conservatism (see Appendix E). Robustness and sensitivity test findings also imply the audit committee effectiveness–timeliness of earnings conservatism linkage is subject to measurement sensitivities. For example, in contrast to the main findings (see Table 6.7 Column I), empirical results using modified measures for earnings and returns (see Table 7.8 Column II and III) indicate a positive and statistically significant finding as expected.

As the main empirical tests indicate a lack of an association between audit committee effectiveness and timeliness of earnings conservatism, H_{2a} is rejected. However, this conclusion is with the caveat that the audit committee effectiveness – earnings timeliness linkage may exist within some sectors of the Malaysian capital market or specific conditions apply.

As for H_{2b}, it proposes a Malaysian publicly listed firm with a more effective audit committee is more likely to be associated with the persistence of earnings. As shown in Chapter 6 (see Table 6.8 Column I), main regression results show a statistically significant association between audit committee effectiveness and the persistence of earnings conservatism. However, contrary to expectations the directional sign is in the opposite direction (i.e. positive rather than negative). This suggests a firm with a less effective audit committee is more likely to be associated with higher persistence of earnings conservatism than a firm with a more effective audit committee. The positive audit committee effectiveness–persistence of earnings conservatism association is also highlighted when the sample includes only firm-year observations for the 2007 calendar year (see Table 6.8 Column VII). However, contrary to the main regression results (see Table 6.8 Column I), when analysis is limited to firm-years from individual calendar year periods there is some

support for H_{2b}. Specifically, for regressionsusing firm-year observations from 2002, 2004 and 2005 only (see Table 6.8 Column II, IV and V) there is negative and statistically significant audit committee effectiveness and persistence of earnings conservatism. Results for individual calendar years may imply the audit committee effectiveness–persistence of earnings conservatism association is subject to temporal influences.

In respect to robustness and sensitivity tests, several results are consistent with the expectations of H_{2b}. For instance, when the sample is limited to firm-year observations where a *Non-Big 4* audit firm is engaged a negative and statistically insignificant (see Table 7.21 Column II) association is found. The majority of robustness and sensitivity tests, however, either support the positive significant association highlighted by the main regression results (see Table 6.8 Column I) or there is no statistically significant association. Consequently, given findings from the main regression analysis and majority of robustness and sensitivity tests are contrary to expectations H_{2b} is rejected.

8.2.4 *Summary of conclusions on general propositions*

As GH_a and GH_b are rejected based on the empirical analysis presented earlier in this thesis, there is limited evidence to support the general proposition (i.e.GP_{DCE}) that a Malaysian publicly listed firm subject to higher standards of direct custodian excellence will display higher levels of earnings conservatism than a counterpart facing lower levels of direct custodian excellence. Similarly, based on results leading to the rejection of H_{2a} and H_{2b} the empirical findings do not find support for GP_{ACE}. As for GP_{AQ} the empirical findings provide partial support. This is based on the acceptance (rejection) of H_{1b} (H_{1a}).

8.3 **Implications of the study**

Findings from this study provide valuable insights toward the understanding of factors that may potentially influence earnings conservatism in Malaysia. Results provide important inferences for key stakeholders including: (i) regulators and policymakers; (ii) investors and shareholders; (iii) corporate management; and (iv) scholars and academics.

8.3.1 *Regulators and policymakers*

Malaysian capital market regulators and policymakers faced major criticism following the 1997–1998 Asian financial crisis due to perceptions the crisis was precipitated by poor corporate governance practices in the nation. In response to such criticism the Malaysian Code of Corporate Governance (*The Code*) was introduced in 2000 with subsequent adjustments during the past decade. A key feature of *The Code*, and subsequent revisions, was the drive to improve auditor quality and audit committee effectiveness.

Prior theoretical research suggests improvements in auditor quality and the effectiveness of the audit committee may lead to more conservative accounting practices. If the intention of Malaysian capital market regulators and policymakers was to improve conservative accounting practices via enhanced auditor quality and audit committee effectiveness in the wake of newly introduced regulations, the findings of this study suggest such an objective is highly optimistic.

Results presented in Chapter 6 and 7 indicate evidence of earnings conservatism (both in terms of timeliness and persistence) within the Malaysian capital market across the study's observation window. Empirical tests, however, are contrary to expectations in indicating the lack of an association between direct custodian excellence and the: (a) timeliness of earnings conservatism; and (b) persistence of earnings conservatism. At best there is only some evidence linking auditor quality with the persistence of earnings conservatism. Based on this Malaysian regulators and policymakers seeking to adjust corporate governance requirements to influence conservative accounting practices with the aim of enhancing earnings quality should focus on mechanisms outside the periphery of direct custodian excellence (i.e.auditor quality and audit committee effectiveness). If Malaysian regulators and policymakers seek to enhance earnings conservatism though the introduction of new requirements that affect auditor quality and audit committee effectiveness, results from this study suggest the costs of such new requirements are likely to outweigh the benefits.

8.3.2 *Investors and shareholders*

Previous literature provides empirical evidence conservative accounting practices benefit financial accounting users such as investors and shareholders. For example, Kung et al. (2008) suggest conservatism is an effective mechanism for constraining managerial opportunistic behaviour. Moreover, conservatism provides an important discouragement for corporate management actively seeking to manipulate earnings (Watts 2003a; Chen et al. 2007;Kung et al. 2008). Conservative accounting practices can act as a mechanism to reduce agency cost and minimizing firm litigation cost (Huijgen and Lubberink 2005), or provide an important role in mitigating bondholder–shareholder conflicts over dividend policy debt costs (Ahmed et al. 2002).

Whilst earnings conservatism may benefit investors and shareholders, it is fortuitous if such users of financial accounting information are able to use key signals in determining the probability a firm may engage in conservative accounting practices. Such signals can aid in enabling investors and shareholders to better value a firm and separate potential ‗lemons from the pack'. If, as predicted by prior theoretical arguments, the quality of the external

auditor and effectiveness of the audit committee influence earnings conservatism, then these could serve as key signals for investors and shareholders. However, as shown by the main findings of this study, there is a lack of a clear association between direct custodian excellence and earnings conservatism. Consequently, findings from this study suggest auditor quality and audit committee effectiveness is not an effective barometer by which investors and shareholders can effectively assess the probability of a Malaysian publicly listed firm engaging in conservative accounting practices that will lead to improved earnings quality. Investors and shareholders, therefore, will need to look to other possible signals.

Furthermore, if investors and shareholders seek to improve the quality of earnings via more comprehensive conservative accounting practices, results from this study suggest action to improve the quality of the auditor or effectiveness of the audit committee is unlikely to lead to the desired conclusion (i.e. implementation of more conservative accounting practices leading to better earnings quality). Again, if investors and shareholders wish to introduce mechanisms, practices or procedures designed to promote greater earnings conservatism to enhance earnings quality, results from this study imply investors and shareholders within the Malaysian capital market setting should not concentrate on auditor quality or audit committee effectiveness.

8.3.3 Corporate management

Results from this study should assist in creating greater awareness amongst corporate management of the importance of earnings conservatism in enhancing the quality and credibility of the firm's financial accounting information. As argued earlier, conservatism is an important underlying attribute often used by capital market participants to benchmark the quality of a firm's earnings (Kung et al. 2008). In order to make financial statements more informative and useful to investors and shareholders (Ball and Shivakumar 2005), corporate management is urged to practice conservative accounting. Moreover, it is recognized that conservatism is an effective mechanism for constraining managerial opportunistic behaviour (Watts 2003a; Chen et al. 2007; Kung et al. 2008) such as manipulation of earnings.

Even though conservatism acts as a natural deterrent to earnings manipulation, it is the function of pivotal ‗human-driven' corporate governance mechanisms that enact and enforce the principle; in this study this is the role of the external auditor and audit committee. The main findings of this study imply the lack of a significant association between direct custodian excellence (and auditor quality or audit committee effectiveness) on earnings conservatism amongst Malaysian publicly listed firms. The lack of an association may provide corporate management a signal that key custodians of the financial reporting process

(i.e. the external auditor and audit committee) within the Malaysian business environment may not be concerned with conservative accounting practices. Consequently, corporate management of Malaysian publicly listed firms may perceive this as an opportunity to engage in more aggressive accounting practices that could benefit their self-interests. Adopting a greater opportunistic attitude would be a pessimistic outcome. Rather, findings from this study suggests there is an increased onus on corporate management to act ethically and morally in the interests of shareholders by not seeking to manipulate earnings for personal gain due to the lack of effective direct custodian corporate governance mechanisms in promoting conservative accounting practices.

8.3.4 *Scholars and academics*

Some prior studies (Beekes et al. 2004; Hamilton, Ruddock, Stokes and Taylor 2005; Ruddock et al. 2006; Ahmed and Duellman 2007; Krishnan and Visvanathan 2008; LaFond and Watts 2008; Lara et al. 2009a) provide evidence that corporate governance provisions (i.e. the board of directors, audit committees and auditor characteristics) play an important role in promoting accounting conservatism. Findings from this study, however, show that no evidence is found of direct custodian mechanisms (i.e. auditor quality and audit committee effectiveness) earnings conservatism. Findings of this study, therefore, have implications for scholars. Firstly, findings from this study cannot be generalized to other nations since this study focuses only on Malaysia. When performing similar studies in the future in an international setting, institutional factors of a nation would need to be considered since institutional factors may have an impact on the association between earnings conservatism and direct custodian mechanisms.

Using different models of earnings conservatism, results of this study show that there is no evidence earnings conservatism is influenced by audit committee effectiveness. Therefore, scholars wishing to undertake future research in this area may have to use different proxy measures for earnings conservatism than the proxy measures adopted in this study. Similarly, in the case of direct custodian excellence, using two different features (i.e. auditor quality and audit committee effectiveness) this study indicates that neither have a consistent impact on the timeliness or persistence of earnings conservatism. Future researchers, therefore, may seek to use alternative features and proxies to measure the association between direct custodian excellence and the quality of reported earnings in the Malaysian (or other domestic) setting.

Past literature shows the external auditor and audit committee acts as monitoring controls to align managers' and shareholders' interests, thus, reducing agency cost and limiting the ability of managers to act opportunistically (Collier and Gregory 1999; Abbott et

al. 2000; Abbott and Parker 2000; Beasley and Salterio 2001; Bédard et al. 2004; Cohen et al. 2004; Ahmed and Duellman 2007; Carcello et al. 2011). Findings from this study shed doubt on the extent of the monitoring role of the external auditor and audit committee in respect to conservative accounting practices. Therefore, scholars undertaking research within an agency theory context may need to consider different corporate governance mechanisms such as the board of directors or other sub-committees when investigating earnings conservatism, and by association, earnings quality.

8.4   Contributions of the study

This study provides key contributions to the extant literature on earnings conservatism and corporate governance. While prior research has focused heavily on developed nations (such as the US and UK) when investigating earnings conservatism (Givoly and Hayn 2002; Beekes et al. 2004; Ball and Shivakumar 2005; Lobo and Zhou 2006), little attention has been given to emerging economies. Emerging economies have provided the ‗spark-plug' for economic recovery following the 2008–2009 *Global Financial Crisis*. Consequently, financial accounting information about firms in emerging economies is under increased scrutiny as investors seek higher returns from investment in these areas. Understanding of key accounting issues (such as earnings conservatism and the effect of corporate governance) is required to better assist investors in their assessment. This study provides such insights.

Though some recent studies of earnings conservatism in Malaysia has been forthcoming (e.g. Ball et al. 2003; Mohammed et al. 2010;Vichitsarawong et al. 2010), findings from this study provide updated evidence in building a more comprehensive library on this phenomenon in Malaysia. For example, similar to previous studies (i.e. Mohammed et al. 2010; Vichitsarawong et al. 2010), this study confirms the existence of earnings conservatism in Malaysian firm as exhibited in Table 6.1: Regression analysis of earnings timeliness (i.e. β = 0.245, positive and significant at 1% significance level for full sample). Moreover, the result shown is consistent with the claim made by Vichitsarawong (2010) that indicate accounting conservatism improved in the post-crisis periods (i.e. 1999- 2004). In addition, this study also consistent with Mohammed et al. (2010) that provide evidence of conditional conservatism in Malaysia for the period of 2004 to2007. Result shown in Table 6:1 indicate evidence of earnings conservatism in Malaysia specifically for 2004, 2005 and 2007 (i.e. β = 0.510 significant at 1% significance level, β = 0.497, β = 0.274, both significant at 5% significance level respectively).

Nevertheless, when association of earnings conservatism and corporate governance mechanisms were examined, this study offers different results as compared to other studies.

For example, Mohammed et al. 2010 found that audit committee size and independence are related to conditional conservatism. This study, however found no evidence of direct custodian mechanisms (i.e auditor quality and audit committee effectiveness) or individual component of auditor quality and audit committee effectiveness, influencing earnings conservatism. The reasons for different result could be subject to dissimilar sample selection process, different time frame and unique measurement of independent variables (i.e application of a composite scoring approach) used in the study.

A major concentration of much of the prior research on earnings conservation has been on establishing the existence and the extant of this issue via various techniques (Basu 1997; Lubberink and Huijgen 2001; Givoly and Hayn 2002). Aside from determining the existence and extant of an issue, it is important to assess potential determinants and consequences. Some recent empirical work has taken steps toward addressing this substantial gap in the earnings conservatism literature (e.g. Ahmed et al. 2002). This study provides a valuable contribution by seeking to investigate the linkage between corporate governance features and the potential impact on earnings conservatism (Beekes et al. 2004; Krishnan and Visvanathan 2008). In addition, the study broadens understanding of the potential impact of corporate governance features on financial accounting matters. In filling in such gaps in the literature this study helps build a more comprehensive analysis and understanding of the relationship between specific key features of corporate governance and earnings conservatism in an alternative capital market setting.

This study also makes empirical testing and analytical contributions. For instance, by examining and measuring earnings conservatism in an alternative setting via several methods, this study helps to determine if such measures can be applied more universally or is limited (e.g. only in developed but not emerging economies). Use of several methods helps to indicate what form of conservatism (i.e. conditional or unconditional conservatism) is more prominent in the Malaysian market. In terms of direct custodian excellence, auditor quality and audit committee effectiveness, this study assists in determining the validity of using composite measures to capture the complex, multidimensional nature of these constructs. Whilst many studies on auditor quality and audit committee effectiveness have been undertaken, there remains considerable debate and conjecture on how each construct should best be measured. This study assists in providing methodological evidence on application of a composite scoring approach (e.g. Beasley and Salterio 2001) relative to focusing on individual elements (e.g. Klein 2002a).

These findings contribute to helping Malaysian stakeholders (e.g. SC, Central Bank of, CCM) better understand the potential impact of the introduction of new regulations related to the external auditors and audit committees on earnings conservatism. Findings

from this study can better aid stakeholders within the Malaysian capital market to (a) develop better regulation strategies and policies, (b) establish better investment procedures and assessments, and (c) knowledge to improve financial accounting and corporate governance structures at the firm and national levels.

Overall, this study provides important insights into earnings conservatism and corporate governance determinants in an emerging market (i.e. Malaysia). However, the study is not without limitations as highlighted in the next section.

8.5   Limitations of the study

As with any positivist empirical analysis, this study is not without limitations. In this study, conservative earnings are defined as being reflected by the recognition of bad news more quickly than good news. This approach is consistent with Basu (1997). However, other ways of measuring conservatism exist including accruals based measures, market-to-book ratio, cash flow measures, asymmetric timeliness and discretionary accruals. Thus, while adopting a standard approach to measuring earnings conservatism through the timeliness and persistence lens, it is important to recognize other techniques may yield clearer findings. Also, the approach adopted in this study ignores possible cross-sectional influences on earnings conservatism or the corporate governance mechanisms. Caution should, therefore, be taken in interpreting the study's findings in light of the omission of possible control variables.[59]

Another limitation is the measurement of direct custodian excellence, auditor quality and audit committee effectiveness. According to Balsam et al. (2003), for example, auditor quality is a multidimensional construct that is inherently unobservable. Using a limited number of attributes (such as independence, specialization and brand name) to develop a composite proxy measure of auditor quality, therefore, could yield different result if other associated attributes of auditor quality are included. This issue also applies to audit committee effectiveness and direct custodian excellence. Caution must be applied in interpreting findings from this study in light of the complex nature of measuring the key corporate governance variables included.

As noted in various parts of this thesis, the empirical analysis is based on a sample of 557 firm-year observations from a larger population. Since all data for measuring key variables (such as auditor quality and audit committee effectiveness is hand-collected from annual reports) time limited the ability to collect details for the entire population. Whilst all

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[59] It must be noted that some additional testing was performed including some typical control variables for cross-sectional differences (e.g. leverage, firm size) with findings yielding results similar to those presented in this study.

due care was taken in selecting the sample, caution must be noted that the final sample may (though the probability is potentially low) not be representative of the population. Further, as some information was hand collected from annual reports, errors with figures or data reported therein may be incorrect. Thus, results from this study are somewhat dependent on the accuracy and completeness of information disclosed by the firm's management.

Another limitation of the study is it only covers a six year observation window (i.e. 2002 to 2007). Thus, there is a limitation in generalizing results to time periods prior to 2002 and after 2007. As explained earlier in the thesis, problems with data availability prior to 2002 precluded the collection of data before that point. For example, Bursa Malaysia only mandated disclosure of non-audit services from 2002. Moreover, mandatory disclosure of audit committee information was brought into effect by the Revamped KLSE Listing Requirements issued on January 22, 2001. Nonetheless, caution should be taken in applying findings to earlier years and more recent times.

This study uses data from an individual emerging economy. While prior empirical research provides evidence of conservatism, such research was conducted in developed, sophisticated capital market environments. Theoretical arguments regarding earnings conservatism and factors that may influence earnings conservatism have been overwhelmingly developed with an established and sophisticated capital market setting in mind. Given the limited research of earnings conservatism within an emerging economy capital market setting, hypotheses and propositions developed in this study have relied on literature based on a developed economy. Prior research has showed the institutional settings of developed and emerging economies may differ significantly. Consequently, developing hypotheses for an emerging economy setting based on views and opinions drawn from a developed economy setting may not be suitable. Consequently, results from this study need to be considered with some caution, and findings may not be as readily applicable to other emerging market settings.

Finally, the independence of the sample used may be questionable. This is because as this study uses the same firms for the six-year observation period. However, with no alternative parsimonious way to undertake the longitudinal analysis underpinning this study where changes in the results of the selected firm-years are of interest to the researchers (Beekes et al. 2004; Roychowdhury and Watts 2007; Kung et al. 2008) the approach is considered acceptable. Nonetheless, generalization of the findings may have some limitations.

8.6   Suggestions for future research

Empirical findings from this study offer various avenues for future research. For example, future research could utilize other approaches to measuring earnings conservatism. Roychowdhury and Watts (2007) and Beaver and Ryan (2000), for example, uses market value based proxies whereas Givoly and Hayn (2000) rely on accruals based proxy measures for earnings conservatism. Similarly, for audit committee effectiveness, future research could attempt to construct a more comprehensive proxy incorporating other properties that is audit committee size, audit committee member ownership, activity level, interaction with internal auditors, industry expertise and tenure (DeZoort 1998; Raghunandan, Rama and Scarbrough 1998; Collier and Gregory 1999). The proxy measure for auditor quality may also be adjusted to incorporate other features such as length of tenure of an audit firm, qualifications of the audit partner-in-charge or interconnectivity between senior executives of the firm and the audit firm. By constructing more comprehensive measures for audit committee effectiveness and auditor quality the proxy for direct custodian excellence will also improve. Collection of such data, however, is likely to rely on utilization of other research methods beyond archival collection. Such research methods could include interviews, surveys and questionnaires that may assist in better defining the inner workings of audit committees. Empirical tests can then be performed again.

For purposes of this study (driven in part by data limitations) a six year observation window (i.e.2002–2007) is used. Future research may utilize a different time frame, longer or shorter observation periods (monthly, quarterly or half year), or periods that traverse a specific event (e.g. Asian financial crisis, Enron). Such research will aid in building a more comprehensive understanding of the influence of the direct custodian excellence on earnings conservatism.

Also, being a study with a single-nation focus (i.e. Malaysia) a logical extension for future research is to evaluate the direct custodian excellence–earnings conservatism association in another domestic, regional or broader international setting. For instance, scholars could conduct related research to this study by choosing nations with different institutional settings (e.g. Code Law versus Common Law, litigation risk, institutional ownership and cultural difference).

Finally, this study only examines the influence of a limited set of corporate governance mechanisms on earnings conservatism. Future research may seek to consider the joint influence of direct custodian excellence and other corporate governance mechanisms (e.g. remuneration committee; internal audit function) on earnings conservatism.

8.7   Conclusions of the study

Direct custodian excellence (i.e. influence of combined effects of auditor quality and audit committee effectiveness) and earnings conservatism have become two important issues during the past decade. Regulators and theorists have alleged a potential direct custodian excellence/earnings conservatism linkage. However, empirical research of this linkage has not been forthcoming. This study formally conducts a comprehensive empirical analysis of the association between earnings conservatism and direct custodian excellence within the Malaysian capital market setting. Utilizing two different perspectives of earnings conservatism, that is, the Basu (1997) concepts of timeliness and persistence, and measuring audit committee effectiveness using a composite score based on key characteristics of auditor quality (i.e. independence, specialization and brand name) and audit committee excellence (i.e. independence, financial expertise and diligence), extensive statistical tests (including numerous robustness and sensitivity tests) were conducted based on a sample of 557 firm-year observations spanning the 2002–2007 calendar years.

Empirical tests yield insightful results. Specifically, the findings suggest the timeliness and persistence of earnings of Malaysian firms subjected to higher standards of direct custodian excellence would not be significantly greater than Malaysian firms with lower levels of direct custodian excellence. Furthermore, findings indicate audit committee effectiveness is unlikely to be associated with earnings conservatism (both in terms of timeliness and persistence) with the Malaysian capital market. The quality of the external auditor, meanwhile, is found not to be significantly associated with the timeliness of earnings conservatism. However, there is some evidence to support the view that a Malaysian publicly listed firm engaging a higher quality auditor is more likely to have higher levels of persistent earnings conservatism than a counterpart using the services of a lower quality external auditor.

Overall, findings from this study provide valuable insights and understanding not only in respect to the direct custodian excellence/earnings conservatism linkage, but the individual dynamics and significance of corporate governance and earnings conservatism/quality concepts. Despite recognized caveats, findings from this study have merit in highlighting important insights with significant implications for various key financial accounting stakeholders (e.g. regulators, corporate management, practitioners, investors and scholars). In advancing the knowledge and understanding of direct custodian excellence and earnings conservatism, and the related association between the two concepts, this study also highlights various paths for future interest and productive empirical research.

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APPENDICES

APPENDIX A: This appendix provides a comprehensive summary table for studies of trends in earnings conservatism in the US.

Table A: 1 - Summary table for studies of trends in earnings conservatism in the US

Author (s)	Title	Focus	Period covered	Findings
Ahmed, Billings, Morton and Stanford-Harris (2002)	The role of accounting conservatism in mitigating bondholder–shareholder conflicts over dividend policy and in reducing debt cost	US. 1. 568 firms 2. 484 firms	1. 1993 to 1998 2. 1987 to 1992	Accounting conservatism plays an important role in i) mitigating bondholder–shareholder conflicts over dividend policy, and ii) reducing a firm's debt costs. Firms with more severe bondholders–shareholders' dividend policy conflict use more conservative accounting practices, while firms which supply more conservative reporting have better debt rating and therefore incur lower debt costs.
Ball, Kothari and Robin (2000)	The effect of international institutional factors on properties of accounting earnings	US. 40,000 firm-year observations	1985 to 1995	Levels of conservatism will vary depending on the institutional context or remain a function of its political and legal systems. There is a significant increase in the conservatism level in the US for the period of 1985 to 1995. For the US, (Common Law nation), accounting numbers are used to reduce info asymmetry among stakeholder and thus demand more conservative reporting. Common Law nations (e.g. the US) are significantly more timely than Code Law nations due entirely to quicker incorporation of economic losses (income conservatism).
Basu (1997)	The conservatism principle and the asymmetric timeliness of earnings	US.43,321 firms	1963 to 1990	The earnings sensitivity to current negative returns increased relative to earnings sensitivity to current positive returns over the period 1963–1990, consistent with accounting conservatism increase over time. Two factors attributed to this increases, (i) the legal liability exposure of auditors and managers for tardy disclosure of bad news has increased significantly over the last three decades, and (ii) contracting parties increased demand for conservatism.
Givoly and Hayn (2002)	Rising conservatism: Implications for financial analysis	US. 896 firms	1968 to 1998	Financial reporting already conservatively biased by accounting conventions has become more conservative since the early 1980s.
Kim and Kross (2005)	The ability of earnings to predict future operating cash flows has been increasing—not decreasing	US. 100,266 firms	1973 to 2000	Relationship between current earnings and future operating cash flows has increased over time (evidence of accounting conservatism)
Klein and Marquardt (2006)	Fundamentals of accounting losses	US. 259,116 firms	1951 to 2001	Non-accounting factors and firm size in particular, play the dominant role over accounting conservatism in determining losses.

Table A: 1 - Summary table for studies of trends in earnings conservatism in the US *(continued)*

Author (s)	Title	Focus	Period covered	Findings
Krishnan and Visvanathan (2008)	Does the SOX definition of an accounting expert matter? The association between audit committee directors' accounting expertise and accounting conservatism	US. 211 firms	2000 to 2002	Audit committee's financial expertise is positively associated with conservatism
Lang, Raedy and Yetman, (2003)	How representative are firms that are cross-listed in the United States? An analysis of accounting quality	US. 413 firms	1990 to 2001	Firms issuing (or preparing to issue) debt or equity in foreign markets are more likely to report conservatively relative to other domestic firms. And cross-listed firms appear to be less aggressive in terms of earnings management and report accounting data that are more conservative, take account of bad news in a more timely manner, and are more strongly associated with share price
LaFond and Watts (2008)	The information role of conservatism	US. 20,389 firms year observations	1983 to 2001	Informationasymmetry is positively related to accounting conservatism (the larger the info asymmetry between inside and outside investors, the more conservative are the firm's financial statements)
Lara, Osma and Penalva (2005)	Accounting conservatism and corporate governance	US. 1,623 firms(9,209 firm-year observations)	1992 to 2003	Firms with strong (weak) governance are more (less) conservative than firms with weak (strong) governance (there is a positive association between governance and conservatism).
Lobo and Jian (2006)	Did conservatism in FR increase after the SOX Act? Initial evidence	US. 4,441 firms	Pre and post SOX (2 years before and 2 years after SOX)	Firms on average are more conservative in financial reporting after the introduction of the Sarbanes-Oxley Act (SEC requires that CEO and CFO certify financial statement, reducing potential earning overstatements) than then they were in the two year immediately preceding the introduction of the Sarbanes-Oxley Acts. It is concluded that litigations under Securities Acts encourage conservatism because litigation is much more likely when earnings are overstated.
Penman and Zhang (2002)	Accounting conservatism, the quality of earnings and stock returns	US. 38,540 firms	1975 to 1997	Stock market did not penetrate the quality of earnings of firms with conservative accounting. Prior research claims that practice of conservatism yield lower earnings thus, earnings are of high quality. But, conservative accounting with investment growth depresses earnings and accounting rates of returns and creates unrecorded reserves. Firms slowing investment release these reserves creating earnings and higher rates of returns.If the change is temporary, then the effects on earnings and rates of returns are temporary which means poor quality earnings.
Reynolds and Francis (2001)	Does size matter? The influence of large clients on office level auditor reporting decisions	US. 6,747 firms	1996	*Big 5* auditors do not report conservatively for larger clients.

Table A: 1 - Summary table for studies of trends in earnings conservatism in the US *(continued)*

Author (s)	Title	Focus	Period covered	Findings
Roychowdhury and Watts (2007)	Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting	US. 45,664 firms	1972 to1999	Asymmetric timeliness appears to measure conservatism more efficiently when it is estimated cumulatively over multiple periods. For shorter periods, the market-to-book value method provides better measurement.
Srivastava and Tse (2007)	What drives changes in accounting conservatism? The effects of the promptness of recognizing anticipated gains versus losses in conservatism	US. 99,109 firm-year observations	1972 to2006	Level of conservatism increased more rapidly in high technology industries in the US rather than other industries over the period of 1972 to 2006 due to slower gains recognized and accelerated losses recognized.

APPENDIX B: This appendix provides a tabulated summary of some major prior studies examining firm characteristics and earnings conservatism.

Table B: 1- Summary major firm characteristic/earnings conservatism studies

Author (s)	Focus	Period covered	Firm characteristics				Findings
			Firm size	Industry	Leverage	Other	
Ding and Stolowy (2006)	France. 267 firms (2,670 firm-year observations)	1990 to1999	Market capitalization	-	-	-	Small firms tended to be more conservative than large ones. Possible explanations: (i) size anomaly is a natural consequence of market efficiency, since small firms are more risky in terms of the market value of equity, and (ii) small firms tend to be less diversified than large ones (returns are more volatile).
Easton and Pae (2004)	US. 54,313 firm-year observations	1988 to 2002	Change in cash investments and change in lagged operating assets	Pharmaceutical industry and others	-	-	Change in cash investments provides significant incremental explanatory power for returns over earnings and earnings changes (firm invest in _+ NPV projects and BV and earnings do not capture the value of the investment until expected future benefits are realized). Accounting for pharmaceutical industry is more conservative than other industries.
Gotti (2008)	US. 6,282 firm-year observations	1963 to 2005	-	-	Debt-to-assets ratio	(i) Executive compensation (ii) Audit firm (iii) Audit opinion	Firms with: (1) high debt-to-asset ratios, (2) executives compensated more heavily on the firm's accounting performance, (3) audited by a *Big-7* auditor in the previous year and received an unqualified auditor opinion, and (4) received an unqualified audit report with a going concern assumption, are more conservative than the rest of the sample.
Klein and Marquardt (2006)	US. 259,116 firm-year observations	1951 to 2001	Total assets	-	-	-	Non-accounting factors and firm size in particular, play the dominant role over accounting conservatism in determining losses.
Kwon, Yin and Han (2006)	US. 2,728 high-tech and 984 low-tech firms	2000	-	High-tech firms versus low-tech firms	-	-	There is a higher level of accounting conservatism in high-tech firms compared to low-tech firms.

Table B: 1 - Summary major firm characteristic/earnings conservatism studies *(continued)*

Author (s)	Focus	Period covered	Firm characteristics				Findings
			Firm size	Industry	Leverage	Other	
Lubberink and Huijgen (2001)	Holland. 124 firms	1983 to 1995	-	-	-	Heteroge-neous executives' risk attitudes	Risk-averse managers report earnings more conservatively than do less risk-averse managers.
Pae, Thornton, and Welker (2005)	US. 119,983 firm-year observations	1970 to 2000	-	-	-	Price-to-book ratio	A portfolio of firms with lower price-to-book ratios has substantially greater earnings conservatism than portfolios of firms with higher-to-book ratios.
Srivastava and Tse (2007)	US. 99,109 firm-year observations	1972 to2006	-	High technology industry versus other industries	-	-	Level of conservatism increased more rapidly in the high technology industry in the US rather than other industries. This could be due to slower gains recognized and accelerated losses recognized.

Legend: Adapted from Sultana (2010).

APPENDIX C: This appendix provides a tabulated summary of some major prior studies examining institutional factors and earnings conservatism.

Table C: 1 - Summary major institutional factor/earnings conservatism studies

Author (s)	Focus	Period covered	Institutional factors				Findings
			Legal regimes	Accounting policies and regulations	Political influence	Cross-listing of firms	
Ball, Kothari and Robin (2000)	7 inter-national GAAP regimes (Germany, Japan, France, the US, the UK, Canada and Australia) 40,359 firm-year observations	1985 to 1995	Common Law nations (Australia, Canada, the US and UK) and Code Law nations (France, Germany and Japan)	-	-	-	For Common Law nations, accounting numbers are used to reduce information asymmetry among stakeholders and thus demand more conservative reporting, while Code Law nations have less demand for conservative practices because accounting numbers used to determine payouts to shareholders, managers, employee, government and other stakeholders, and information asymmetries among parties are likely to be resolved privately. Generally, a Common Law nation is significantly more timely than Code Law countries due entirely to quicker incorporation of economic losses (income conservatism).
Brown, He and Teitel (2006)	20 nations 47,802 firm-year observations	1993 to 2004	-	Nation-specific level of accruals intensity	-	-	Conditional conservatism is positively associated with the value relevance of earnings in nations with higher accrual intensity (incremental to the effects of shareholder protection).
Bushman and Piotroski (2006)	38 nations 86,927 firm-year observations	1992 to 2001	Investor protection regimes, judicial systems and strength of public enforcement	-	State involvement in economy (i.e. publicly traded government firms)	-	Results suggest: (i)Firms in nations with strong investor protection and high quality judicial systems reflected bad news in reported earnings numbers in a more timely fashion than firms in nations characterized by weak investor protection and low quality judicial systems; (ii) firms in nations with strong public enforcement (i.e. securities law) slowed the recognition of good news in reported earnings numbers relative to nations with weak public enforcement; and (iii) in nations characterized by high state involvement in the economy, firms speeded recognition of good news and slowed recognition of bad news in reported earnings relative to firms with less state involvement.

Table C: 1- Summary major institutional factor/earnings conservatism studies *(continued)*

Author (s)	Focus	Period covered	Institutional factors				Findings
			Legal regimes	Accounting policies and regulations	Political influence	Cross-listing of firms	
Huijgen and Lubberink (2005)	US. 86 firms	1993 to 2002	-	-	-	UK firms cross-listed in the US and UK firms without a US-listing	Earnings of UK firms (cross-listed in the US) are significantly more conservative than earnings of UK firms without a US listing. This is because cross-listed firms are threatened by litigation from a wider audience of shareholders and a stricter enforcement system.
Kung, James and Cheng (2008)	Hong Kong. 5,639 firm-year observations and China 8,047 firm-year observations	1994 to 2003	-	-	-	Chinese firms cross-listed in Hong Kong (H-shares) and Chinese firms without an overseas-listing (A-shares)	Results shows that Chinese firms cross-listed in HK (H-shares) are not significantly more conservative than firms without cross-listing. They suggest that the location of listing has little effect on accounting conservatism because cross-listed companies retain a significant exposure to domestic institutional environment.
Lara, Osma and Mora (2005)	UK, France and Germany. 4,743 firm-year observations	1990 to 2001	Investor protection regimes and less dispersed ownership (France and Germany) versus the UK	-	-	-	Code Law based nations' (i.e. France and Germany) managers have incentives to reduce earnings consistently while a Common Law based nation (i.e. the UK) does not. Results show that after controlling for discretionary accruals, the differential earnings response to bad news in Code Law nations decreases significantly.
Pope and Walker (1999)	US. 18,380 firm-year observations and UK. 7,189 firm-year observations	1976 to 1996	-	Earnings before extraordinary items and bottom-line earnings	-	-	Level of conservatism inherent in earnings before extraordinary items was significantly higher under US GAAP than under UK GAAP, while the result is the opposite for bottom-line earnings.

Legend: Adapted from Sultana (2010).

APPENDIX D: This appendix displays industry sector breakdown of the Bursa Malaysia as at January 1, 2002.In the study, for comparison purposes, the percentage of firms for the actual market of Bursa Malaysia is used instead of the percentage of firm-year observations. For details, please refer to Table 5.2 (industry breakdown) and footnote 27.

Table D: 1 - Breakdown of firm-year observations by industry sector Industry

Panel A:		
Sector Name	**N**	**%**
Construction	116	19.897
Consumer Product	118	20.240
Industrial Product	118	20.240
Mining	22	3.774
Plantation	16	2.774
Property	84	14.408
Technology	14	2.401
Trading & Services	95	16.295
Total	**583**	**100.000**

APPENDIX E: This appendix presents empirical results of analysis testing of the association of audit quality and the timeliness of earnings conservatism with industry breakdown. Five regressions are presented with results in Table E: 1 Column I (PS) to Column IV (*Trading & Services*) reports results for specific industries (i.e. *Constructions, Consumer Products, Industrial Products* and *Trading & Services*) and one regression for combined result for industries with small number of observations (i.e. *Plantation, Mining, Property and Technology*).

Table E: 1 - Regression analysis of $AQ_{i,t}$ and earnings timeliness

	Industry Category									
	Column I: **Constructions**		**Column II:** **Consumer Products**		**Column III:** **Industrial Product**		**Column IV:** **Trading & Services**		**Column V:** **Others**	
	β	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*
(Constant)	0.032	0.240	0.043	0.376	0.019	0.207	0.149	1.615	-0.110	-1.299
$NEGRET_{i,t}$	0.521	2.570[†]	-0.086	-0.526	0.190	1.659[Ψ]	-0.124	-0.959	0.085	0.839
$AQ_{i,t}$	0.089	1.456	-0.058	-1.016	0.059	1.413	-0.032	-0.788	0.084	2.494[†]
$NEGRET_{i,t}*AQ_{i,t}$	-0.349	-2.721[‡]	0.103	1.069	-0.077	-1.175	0.083	1.225	-0.047	-0.974
$RET_{i,t}$	0.185	2.222[†]	0.551	1.409	0.326	2.533[†]	-0.017	-0.553	0.266	2.645[‡]
$RET_{i,t}*NEGRET_{i,t}$	1.443	3.132[‡]	-0.918	-1.341	0.141	0.410	0.108	0.495	-0.355	-1.391
$RET_{i,t}*AQ_{i,t}$	-0.085	-1.551	-0.229	-1.174	-0.091	-1.192	0.015	0.367	-0.129	-2.605[‡]
$RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$	-0.872	-2.699[‡]	0.534	1.522	0.100	0.492	0.071	0.538	0.266	2.099[†]

Table E: 1 - Regression analysis of $AQ_{i,t}$ and earnings timeliness *(continued)*

| | Industry Category | | | | | | | | | |
| | Column I:
Constructions | | Column II:
Consumer Products | | Column III:
Industrial Product | | Column IV:
Trading & Services | | Column V:
Others | |
	β	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*
Year 2002	-0.071	-0.717	-0.036	-0.352	-0.043	-0.580	-0.084	-0.994	-0.016	-0.269
Year 2003	-0.168	-1.648	0.005	0.058	-0.104	-1.416	-0.083	-0.958	0.037	0.625
Year 2004	-0.114	-1.163	0.022	0.241	0.061	0.822	0.026	0.312	0.051	0.835
Year 2005	-0.111	-1.133	-0.034	-0.357	-0.079	-1.085	-0.070	-0.856	0.027	0.449
Year 2006	-0.104	-0.988	-0.018	-0.199	-0.054	-0.707	-0.049	-0.575	-0.080	-1.327
Adjusted R²	0.137		0.114		0.109		-0.027		0.053	
F-Value	2.281[†]		2.084[†]		2.310[†]		0.796		1.613	
N	98		102		129		95		133	

Legend:

Column I, II, III, IV, and V: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 AQ_{i,t} + \alpha_3 NEGRET_{i,t}*AQ_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*AQ_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*AQ_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$
where*: $AQ_{i,t}$ = composite score index with firm *i* in time period *t* scored one (1) for each of following criteria met: (a) ratio of non-audit services to total audit fees (i.e.fees paid for audit and non-audit services) of firm *j* in time *t* is less than 0.20; (b) external auditor of firm *i* in time *t* is an industry specialist; and (c) external auditor is a *Big 4* audit firm (PWC, EY, Delloitte or KPMG). If criterion item is not met then firm *i* in time period *t* scored zero (0) for that criterion. The range of the composite score index is from zero (0) to three (3); see equations in Table 6.1 for definitions of other variables; and Ψ, †, □= significant at the 0.10, 0.05 and 0.01 confidence levels.

Based on Table E: 1, the Adjusted R^2 of 13.70% for regression using only the *Construction* industry is the largest. It indicates that approximate 13.70% of the variation in the dependent variable (i.e. $OPI_{i,t}$) is explained by the variables of interest. This R^2 value is more than double the Adjusted R^2 value of 5.40% for the regression using pooled sample (see Table 6.5 Column I). In contrast, the *Trading & Services* industry has the lowest value of Adjusted R^2 value of -2.70%.

Table E: 1 reports that the coefficient on $NEGRET_{i,t}$ is positive for regressions using *Construction* and *Industrial Products* observations (see Table E: 1 Column I and Column III). This is consistent with the result for similar variable shown in Table 6.5 Column I). In contrast, the coefficient on similar variable for regressions using *Consumer Products* and *Trading & Services* is negative. Although the directionality of the coefficient for regressions using the *Construction* and *Industrial Products* observations is consistent to the result for pooled sample, conversely, in terms of significance, the result is contradictory. While the coefficient for regression using the pooled sample is statistically insignificant, the coefficients for both regressions (i.e. *Construction* and *Industrial Products*) are statistically significant at conventional levels (i.e. $p<0.05$ and $p<0.10$ respectively).

For $AQ_{i,t}$, in terms of significance, the coefficient on this variable in Table E: 1 reports statistically insignificant results across four regressions of major industries (i.e. *Constructions*, *Consumer Products*, *Industrial Products* and *Trading & Services*). This result is similar to the result shown in Table 6.5 Column I for similar variables. Nevertheless, while the coefficient for the pooled sample is negative, in contrast the coefficient for regressions using only *Construction* and *Industrial Products* (see Table E: 1 Column I and Column III) is positive.

With regards to $NEGRET_{i,t}*AQ_{i,t}$, the coefficient on this variable is positive for regression using the pooled sample (see Table 6.5 Column I). Consistently, the coefficients on similar variables are also positive for regressions using *Consumer Products* and *Trading & Services* (see Table E: 1 Column II and Column III). In contrast, there is a negative for regressions using only *Construction* and *Industrial Products* (see Table E: 1 Column I and Column III). In term of significance, while the coefficient on the similar variable is statistically insignificant from zero for the pooled sample (see Table 6.5 Column I), conversely only the regression using the *Construction* observations is statistically significant (i.e. $p<0.01$).

In respect to $RET_{i,t}*NEGRET_{i,t}$, across all regressions presented in Table E: 1, the majority of the coefficients are positive and consistent with the result shown in Table 6.5 Column I except for the regression using the *Consumer Products* observations, with a negative coefficient. Meanwhile, while the coefficient on the similar variable is statistically

significant at 10% confidence level, only the coefficient for the regression using *Constructions* is statistically significant at 1% confidence level. The coefficients for the remaining regressions, however, are statistically insignificant.

For $RET_{i,t}*AQ_{i,t}$, none of the coefficient across all regressions is statistically significant from zero (see Table E-1 Column I to Column IV). This is similar to the result reported for similar variables in Table 6.5 Column I. However, in terms of directionality of the coefficient, the majority of the regressions show contradictory results to the result for the regression using the pooled sample. While the coefficient for the regression using the pooled sample is positive, only the coefficient for the regression using the *Trading & Services* (Table E: 1 Column IV) observations is consistent with that result. The coefficients on the remaining regressions (i.e. *Constructions*, *Consumer Products* and *Industrial Products*), however, are negative.

As for $RET_{i,t}*NEGRET_{i,t}*AQ_{i,t}$, the coefficient on this variable is statistically insignificant for regressions using *Consumer Products*, *Industrial Products* and *Trading & Services*. This is similar to the result shown in Table 6.5 Column I. In contrast, the coefficient on the similar variable is statistically significant (i.e. p<0.01) for the regression using only the *Constructions* observations. In term of directionality of the coefficient, only the coefficient for regression using *Constructions* observations is negative and consistent with the directionality of the coefficient for the regression using the pooled sample. The rest (see Table E: 1 Column II, Column III and Column IV), however, are negative.

Table E: 1 Column IV (*Trading & Services*) reports that the coefficient on $RET_{i,t}$ is negative and consistent with the result shown in Table 6.5 Column I for the similar variable. Others (i.e. *Constructions*, *Consumer Products* and *Industrial Products*), however, are inconsistent with the positive coefficient on $RET_{i,t}$. Nevertheless, while the coefficient for the regression using the 577 firm-year observations is statistically significant (i.e. p<0.10), only the coefficient for the regressions using *Constructions* and *Industrial Products* is statistically significant at conventional levels (i.e. p<0.05).

Table E: 2 presents the statistical results from the modified Basu (1997) timeliness model, testing the association of audit committee effectiveness and the timeliness of earnings conservatism. The regression result is broken down into five industries.

Table E: 2 - Regression analysis of $ACE_{i,t}$ and earnings timeliness

	Industry Category									
	Column I: Constructions		Column II: Consumer Products		Column III: Industrial Product		Column IV: Trading & Services		Column V: Others	
	β	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*
(Constant)	0.101	0.623	-0.169	-1.242	-0.128	-0.980	-0.177	-0.989	-0.141	-1.116
$NEGRET_{i,t}$	0.020	0.060	0.274	1.184	0.156	0.819	0.121	0.426	0.199	1.349
$ACE_{i,t}$	0.066	0.856	0.083	1.431	0.137	2.083[†]	0.144	1.726[Ψ]	0.087	1.692[Ψ]
$NEGRET_{i,t}*ACE_{i,t}$	0.004	0.029	-0.099	-0.819	-0.025	-0.236	-0.061	-0.477	-0.108	-1.481
$RET_{i,t}$	0.362	2.473[†]	0.008	0.069	0.666	1.843[Ψ]	0.320	1.738[Ψ]	0.210	1.659[Ψ]
$RET_{i,t}*NEGRET_{i,t}$	-0.491	-0.599	1.315	2.161[†]	-0.913	-1.690[Ψ]	-0.263	-0.431	0.091	0.244
$RET_{i,t}*ACE_{i,t}$	-0.165	-2.079[†]	0.076	0.746	-0.232	-1.393	-0.164	-1.796[Ψ]	-0.077	-1.537
$RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$	0.484	1.289	-0.631	-1.970[†]	0.707	2.419[†]	0.245	0.909	-0.022	-0.112

Table E:2 - Regression analysis of $ACE_{i,t}$ and earnings timeliness *(continued)*

	Industry Category									
	Column I: **Constructions**		**Column II:** **Consumer Products**		**Column III:** **Industrial Product**		**Column IV:** **Trading & Services**		**Column V:** **Others**	
	β	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*
Year 2002	-0.104	-1.015	0.003	0.026	-0.072	-0.987	-0.111	-1.373	0.004	0.061
Year 2003	-0.218	-2.023[†]	-0.066	-0.729	-0.120	-1.665 [Ψ]	-0.099	-1.171	0.048	0.778
Year 2004	-0.127	-1.231	-0.044	-0.494	0.038	0.535	0.022	0.271	0.058	0.923
Year 2005	-0.159	-1.546	-0.068	-0.762	-0.087	-1.241	-0.069	-0.844	0.053	0.838
Year 2006	-0.142	-1.311	-0.045	-0.507	-0.067	-0.910	-0.051	-0.612	-0.086	-1.414
Adjusted R²	0.072		0.144		0.159		0.012		0.007	
F-Value	1.625		2.421[†]		3.032[□]		1.096		1.079	
N	98		102		129		95		133	

Legend:

Column I, II, III, IV, and V: $OPI_{i,t} = \alpha_0 + \alpha_1 NEGRET_{i,t} + \alpha_2 ACE_{i,t} + \alpha_3 NEGRET_{i,t}*ACE_{i,t} + \beta_0 RET_{i,t} + \beta_1 RET_{i,t}*NEGRET_{i,t} + \beta_2 RET_{i,t}*ACE_{i,t} + \beta_3 RET_{i,t}*NEGRET_{i,t}*ACE_{i,t} + \sum\gamma_t + \varepsilon_{i,t}$ where: $ACE_{i,t}$ = composite score index where firm *i* in time period *t* is scored one (1) for each of following criteria met: (a) audit committee of firm *i* in time period *t* is comprised mainly of non-executive independent directors; (b) at least one of the non-executive independent directors on the audit committee of firm *i* in time period *t* is suitably qualified and accredited to be deemed a financial accounting expert (i.e. a degree in accounting and a member of a professional accounting body); and (c) during the time period *t* the audit committee of firm *i* met five times or more. If a criterion is not met then firm *i* in time period *t* is scored zero (0) for that criterion. The range of the composite score is from zero (0) to three (3); See equations in Table 6.1 for definitions of other variables; and Ψ, †, □= significant at the 0.10, 0.05 and 0.01 confidence levels.

Based on Table E: 2 Column III (*Industrial Products*), the Adjusted R^2 value of 15.90% for the regression using only the *Industrial Product* industry is the largest. This is followed by the Adjusted R^2 value of 14.40% for the regression using only *Consumer Products* firm-year observations (see Table7.25 Column II). These two Adjusted R^2 values are double the Adjusted R^2 value of 7.40% for the regression using the full 557 firm-year observations (see Table 6.7 Column I). In contrast, the regression using only *Trading & Services* firm-year observations sees the lowest value of Adjusted R^2 of 1.20% (see Table7.25 Column IV).

Table E: 2 Column I (*Constructions*) to Column IV (*Trading & Services*) reports that the directionality and coefficient on $NEGRET_{i,t}$ is positive and significant for regressions using *Constructions*, *Consumer Products*, *Industrial Products* and *Trading & Services* observations. This is consistent with the result for regression using the pooled sample as shown in Table 6.7 Column I (PS).

For $ACE_{i,t}$, the coefficient on this variable is positive across all regressions (see Table E: 2 Column I to Column IV). This directionality of the coefficient is similar to the coefficient on similar variables for regressions using the full 577 firm-year observations (see Table 6.7 Column I). However, while the coefficient for the regression using the pooled sample is statistically significant at conventional levels (i.e. $p < 0.01$), only the coefficient for regressions using *Industrial Products* and *Trading & Services* are statistically significant at conventional levels (i.e. $p < 0.05$ and $p < 0.10$ respectively). The rest (i.e. *Constructions* and *Consumer Products*), however, are statistically insignificant from zero.

With regards to $NEGRET_{i,t}*ACE_{i,t}$, , the coefficient on this variable is insignificant from zero across all regressions (see Table E: 2 Column I to Column IV). This is consistent with the result shown for the regression using the pooled sample (see Table 6.7 Column I). In terms of directionality of the coefficient, only the regression using *Constructions* observations (see Table E: 2 Column I) have contradicted the results of the regression using the pooled sample. Meanwhile, the remaining regressions have similar negative coefficients to the result shown in Table 6.7 Column I).

Table E: 2 Column I (*Constructions*) to Column IV (*Trading & Services*) reports that the coefficients on $RET_{i,t}$ are positive for all regressions. This is consistent with the coefficient on similar variables for the regression using the pooled sample (see Table 6.7 Column I). Nevertheless, while the coefficient for the regression using the pooled sample is significant at 1% confidence level, the coefficients for the regressions using *Constructions*, *Industrial Products* and *Trading & Services* (see Table E: 2 Column I; $p < 0.05$), Column III (*Industrial Products*; $p < 0.10$) and Column IV (*Trading & Services*; $p < 0.10$) are also

significant at conventional levels. The coefficient on $RET_{i,t}$ for the regression using *Consumer Products* observations (see Table E: 2 Column II), however, is insignificant.

Table E: 2 Column II (*Consumer Products*) reports that unlike the coefficient for others regressions that are consistent with the negative coefficient of regressions using the 557 firm-year observations that is pooled sample, the coefficient on $RET_{i,t}*NEGRET_{i,t}$ is positive for regressions using only *Consumer Products* observations. However, in terms of significance, while the result of the coefficient for the regression using the pooled sample is statistically insignificant (see Table 6.7 Column I), two regressions are statistically significant at conventional levels (i.e. *Consumer Products*, $p<0.05$; and *Industrial Products*, $p<0.10$) on an individual industry basis.

As for $RET_{i,t}*ACE_{i,t}$, the majority of the coefficients on this variable across all regressions are negative and consistent with the result of similar variables for the regression using the full 577 firm-year observations. This is, however, in contrast to the positive coefficient for regression using *Consumer Products* observations. Nevertheless, the coefficients for regressions using *Construction* and *Trading & Services* are statistically significant at conventional levels (i.e. $p< 0.05$ and $p<0.10$ respectively). This is consistent with the result of the significant coefficient for regression using the pooled sample (see Table 6.5 Column I; $p<0.01$).

The result for the last variable in testing the association of audit committee effectiveness and earnings timeliness, $RET_{i,t}*NEGRET_{i,t}*ACE_{i,t}$, is a mixture. For instance, while the coefficient on the similar variable for the regression using *Consumer Products* is negative and inconsistent with the result for the pooled sample, the coefficients for regressions using *Constructions*, *Industrial Product* and *Trading & Services* are positive (see Table E: 2 Column I, Column III and Column IV). In terms of significance, while the coefficient on similar variables as shown in Table 6.5 Column I is statistically insignificant, the coefficient for regressions using *Consumer Products* (i.e. $p<0.05$) and *Industrial Products* (i.e. $p<0.05$) are statistically significant at conventional levels (see Table E: 2 Column II and Column III).

Table E: 3 presents the main results of the statistical analysis of the association between auditor quality and persistence of earnings conservatism. The main results of the regressions are broken down into five industries.

Table E: 3 - Regression analysis of $AQ_{i,t}$ and earnings persistence

	Industry Category									
	Column I: **Constructions**		**Column II:** **Consumer Products**		**Column III:** **Industrial Product**		**Column IV:** **Trading & Services**		**Column V:** **Others**	
	β	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*
(Constant)	0.318	0.785	2.045	0.783	-0.071	-0.523	0.291	1.507	0.137	1.343
$NEG\Delta OPI_{i,t-1}$	-0.739	-1.438	3.173	0.853	0.061	0.360	0.023	0.085	-0.079	-0.666
$AQ_{i,t}$	-0.244	-1.156	0.217	0.164	0.060	0.999	-0.142	-1.825 $^{\Psi}$	0.008	0.230
$NEG\Delta OPI_{i,t-1}*AQ_{i,t}$	0.351	1.090	-0.855	-0.408	-0.017	-0.169	0.058	0.424	0.062	1.091
$\Delta OPI_{i,t-1}$	0.598	2.229†	19.252	4.946‡	0.151	0.494	-0.854	-5.945‡	0.180	0.850
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-2.109	-5.281‡	-19.514	-1.667$^{\Psi}$	-1.187	-3.666‡	0.716	3.257‡	-0.758	-2.585‡
$\Delta OPI_{i,t-1}*AQ_{i,t}$	-0.466	-2.389†	-5.857	-3.574‡	-0.212	-0.708	0.452	2.405†	-0.124	-1.227
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$	0.810	2.243†	5.900	1.458	0.344	0.981	-0.479	-2.049†	0.408	2.836‡

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Table E:3 - Regression analysis of $AQ_{i,t}$ and earnings persistence *(continued)*

	Column I: Constructions		Column II: Consumer Products		Column III: Industrial Product		Column IV: Trading & Services		Column V: Others	
	β	*t-stat*	β	*t-stat*	β	*t-stat*	β	*t-stat*	β	*t-stat*
Year 2002	0.270	0.622	-7.933	-2.609[‡]	-0.046	-0.309	-0.227	-0.977	-0.090	-0.946
Year 2003	0.151	0.376	-4.343	-1.464	-0.009	-0.061	-0.114	-0.494	-0.118	-1.307
Year 2004	0.098	0.241	-3.679	-1.254	-0.015	-0.104	0.237	1.062	-0.185	-2.014[†]
Year 2005	0.108	0.276	-2.998	-1.051	-0.299	-2.159[†]	-0.192	-0.874	-0.194	-2.182[†]
Year 2006	0.670	1.666[Ψ]	-3.980	-1.291	-0.036	-0.256	-0.042	-0.188	-0.279	-3.116[‡]
Adjusted R²	0.335		0.345		0.466		0.283		0.112	
F-Value	5.079[‡]		5.438[‡]		10.365[‡]		4.060[‡]		2.383[†]	
N	98		102		129		95		133	

Legend:

Column I, II, III, IV and V: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 AQ_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*AQ_{i,t} + \beta_0 \Delta OPI_{i,t-1} + \beta_1 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2 \Delta OPI_{i,t-1}*AQ_{i,t} + \beta_3 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} *AQ_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ *where:* $AQ_{i,t}$ = Composite score index with firm *i* in time period *t* scored one (1) for each of following criteria met: (a) ratio of non-audit services to total audit fees (i.e.fees paid for audit and non-audit services) of firm *j* in time *t* is less than 0.20; (b) external auditor of firm *i* in time *t* is an industry specialist; and (c) external auditor is a *Big 4* audit firm (PWC, EY, Delloitte or KPMG). If criteria item not met then firm *i* in time period *t* scored zero (0) for that criterion. The range of the composite score index is from zero (0) to three (3); see equations in Table 6.2 for definitions of other variables; and Ψ, †, □= significant at the 0.10, 0.05 and 0.01 confidence levels.

Based on Table E: 3, the Adjusted R^2 of 46.60% for regression using only the *Industrial Products* industry is the largest. It indicates that approximately 46.60% of the variation in the dependent variable (i.e. $OPI_{i,t}$) is explained by the variables of interest. This is followed by 34.50% Adjusted R^2 value for regression using only the *Consumer Products* industry. The Adjusted R^2 value for regressions for *Construction* and *Trading & Services* are 33.50% and 28.30% respectively. Nevertheless, these Adjusted R^2 values are higher than the Adjusted R^2 value of only 12.40% for the regression using the pooled sample (see Table 6.6 Column I).

With regards to $NEG\Delta OPI_{i,t-1}$, none of coefficients on this variable are statistically significant for any of the regressions shown in Table E:3 Column I (*Constructions*) to Column IV (*Trading & Services*).This result, however, is similar to the result shown in Table 6.6 Column I (PS) for similar variables. In terms of significance, only the coefficient for regression using the *Constructions* observations is similar to the negative coefficient for the regression using the pooled sample (see Table E: 3 Column I).

For $AQ_{i,t}$, of four regressions of major industries, the coefficient on two regressions (i.e. *Construction* and *Trading & Services*) are negative and similar to the result for the regression using the pooled sample (see Table 6.6 Column I). However, while the coefficient on this variable is statistically insignificant for the regression using the pooled sample, only the coefficient for regression using *Trading & Services* has contradicted the result (i.e. Table E: 3 Column IV; $p<0.10$).

In respect to $NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, none of the coefficients on this variable are statistically significant for any of the regressions shown in Table E: 3 Column I (*Constructions*) to Column IV (*Trading & Services*).This result, however, is similar to the result shown in Table 6.6 Column I (PS) for similar variables. Nevertheless, in comparison to the result for the regression using the pooled sample (i.e. positive coefficient), of the four regressions, two regressions show different results (i.e. *Consumer Products* and *Industrial Products*; positive coefficient).

As for $\Delta OPI_{i,t-1}$, while the result of the coefficient for the regression using the pooled sample is statistically insignificant from zero (see Table 6.6 Column I), most regressions (i.e. *Constructions*; $p<0.05$, *Consumer Products*; $p<0.01$ and *Trading & Services*; $p<0.01$) show different results, except for the coefficient for the regression using the *Industrial Products* observations. In addition, only the coefficient for the regression using *Trading & Services* observations (see Table E: 3 Column IV) has similar results to the pooled sample (i.e. negative coefficient). The remaining coefficients on $\Delta OPI_{i,t-1}$, for three other regressions (i.e. *Constructions*, *Consumer Products* and *Industrial Products*) are positive.

As demonstrated in Table E: 3, the coefficients on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ are statistically significant at conventional levels for each of the regressions (i.e. *Constructions*; p<0.01, *Consumer Products*; p<0.10, *Industrial Products*; p<0.01 and *Trading & Services*; p<0.01). Conversely, the coefficient on similar variables for regressions using full 557 firm-year observations is statistically insignificant from zero. Nevertheless, in terms of significance, most of the regressions have similar negative coefficients to the results of the coefficient for the regression using the pooled sample except for the coefficient for the regression using *Trading & Services* (see Table E: 3 Column IV).

The directionality of the coefficient on $\Delta OPI_{i,t-1}*AQ_{i,t}$ for three regressions (i.e. *Constructions*, *Consumer Products* and *Industrial Products*) is negative and consistent with the coefficient of similar variables as shown in Table 6.6 Column I (PS) except for the coefficient for regression using *Trading & Services* (see Table E: 3 Column IV). In terms of significance, while the coefficient on $\Delta OPI_{i,t-1}*AQ_{i,t}$ is statistically significant at 1% confidence level, only the coefficient for the regression using *Industrial Products* is statistically insignificant. The coefficients for the remaining regressions are statistically significant at conventional levels (i.e. *Constructions*; p<0.05, *Consumer Products*; p<0.01 and *Trading & Services*; p<0.01).

Finally, for $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*AQ_{i,t}$, the directionality of the coefficient on this variable is only negative for the regression using *Trading & Services* (see Table E: 3 Column IV) and is consistent with the result of the coefficient for the regression using the pooled sample (see Table 6.6 Column I). In contrast, the coefficients for remaining regressions are positive. Nevertheless, in terms of significance, of four regressions of major industries, only two regressions (i.e. *Constructions* and *Trading & Services*) are statistically significant at conventional levels (i.e. p<0.05). This is similar to the result for the regression using the full 557 firm-year observations (i.e. p<0.01).

Table E: 4 presents the main results of the statistical analysis of the association between audit committee effectiveness and persistence of earnings conservatism. Five regressions are presented with results in Table E: 4 Column I (*Construction*) to Column IV (*Trading & Services*) reporting results for specific industries (i.e. *Constructions*, *Consumer Products*, *Industrial Products* and *Trading & Services*) and one regression for the combined result for industries with a small number of observations (i.e. *Plantation, Mining, Property* and *Technology*).

As reported in 7.29 Column III (*Industrial Products*), approximately 46.50% of the variation in the dependent variable $\Delta OPI_{i,t}$ is explained by the variables of interest when 129 firm-year observations for Industrial Products are used. This Adjusted R^2 of 46.50% for the regression using only the *Industrial Product* industry is the largest amongst five regressions.

Meanwhile, the Adjusted R^2 values for regressions using remaining industries firm-year observations are in the range of 24.30% and 28.20% (see Table E: 4 Column I to Column IV). This is approximately similar to the Adjusted R^2 for the regression using the pooled sample (see Table 6.8 Column I).

Table E: 4 reports that the coefficient on $NEG\Delta OPI_{i,t-1}$ is statistically insignificant for all regressions (i.e. *Constructions*, *Consumer Products*, *Industrial Products* and *Trading & Services*). This is consistent with the coefficient on similar variables for the regression using the pooled sample (see Table 6.8 Column I). However, while the directionality of the coefficient on $NEG\Delta OPI_{i,t-1}$ is positive for the regression using the pooled sample, in contrast the coefficient for regressions using *Constructions* and *Industrial Products* observations are negative.

As for $ACE_{i,t}$, the directionality of the coefficient on this variable is positive for the regression using the pooled sample (see Table 6.8 Column I). Similarly, only the coefficient for regressions using *Trading & Services* (see Table E: 4 Column IV) observations is positive. However, in terms of significance, the coefficient on $ACE_{i,t}$ is statistically insignificant for all regressions (i.e. *Constructions*, *Consumer Products*, *Industrial Products* and *Trading & Services*). This is consistent with the coefficient on similar variables for the regression using the pooled sample (see Table 6.8 Column I).

With regards to $NEG\Delta OPI_{i,t-1}*ACE_{i,t}$, the coefficient on this variable is statistically insignificant for all regressions (i.e. *Constructions*, *Consumer Products*, *Industrial Products* and *Trading & Services*). This is consistent with the coefficient on similar variables for the regression using the pooled sample (see Table 6.8 Column I). In terms of directionality of the coefficient, only the coefficient for the regression using *Trading & Services* observations is negative and similar to the result of the coefficient for the regression using the pooled sample (see Table E: 4 Column IV and Table 6.8 Column I).

For $\Delta OPI_{i,t-1}$, the directionality of the coefficient on this variable is positive for all regressions (i.e. *Constructions*, *Consumer Products*, *Industrial Products* and *Trading & Services*). This is consistent with the positive coefficient on similar variables for the regression using the pooled sample (see Table 6.8 Column I). However, in terms of significance, while the coefficient on similar variable as shown in Table 6.8 Column I (PS) is statistically significant at 1% confidence level, only the coefficient for the regression using *Consumer Products* observations is statistically significant at conventional levels (i.e. p< 0.10).

Table E: 4 - Regression analysis of $ACE_{i,t}$ and earnings persistence

	Column I: Constructions		Column II: Consumer Products		Column III: Industrial Product		Column IV: Trading & Services		Column V: Others	
Industry Category										
	β	t-stat	β	t-stat	β	t-stat	β	t-stat	β	t-stat
(Constant)	0.534	0.977	3.922	0.864	0.057	0.322	-0.070	-0.186	0.141	1.228
$NEG\Delta OPI_{i,t-1}$	-0.481	-0.611	0.650	0.107	-0.005	-0.017	0.198	0.360	0.230	1.655 [Ψ]
$ACE_{i,t}$	-0.195	-0.865	-0.178	-0.095	-0.034	-0.389	0.068	0.453	-0.017	-0.346
$NEG\Delta OPI_{i,t-1}*ACE_{i,t}$	0.132	0.374	0.607	0.204	0.011	0.073	-0.094	-0.370	-0.124	-1.736 [Ψ]
$\Delta OPI_{i,t-1}$	0.725	1.345	7.212	1.786 [Ψ]	0.969	0.678	0.238	0.391	-0.808	-1.608
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$	-2.697	-0.653	-7.645	-0.779	-1.530	-0.748	0.028	0.018	1.486	2.735 [‡]
$\Delta OPI_{i,t-1}*ACE_{i,t}$	-0.265	-1.332	-1.676	-0.444	-0.509	-0.715	-0.493	-1.567	0.420	1.637
$\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$	0.495	0.358	2.122	0.221	0.284	0.280	0.272	0.349	-1.100	-3.426 [‡]

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Table E:4 - Regression analysis of $ACE_{i,t}$ and earnings persistence *(continued)*

	Industry Category									
	Column I: **Constructions**		**Column II:** **Consumer Products**		**Column III:** **Industrial Product**		**Column IV:** **Trading & Services**		**Column V:** **Others**	
	β	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*	*β*	*t-stat*
Year 2002	-0.060	-0.143	-7.297	-2.237[†]	-0.047	-0.306	-0.140	-0.579	-0.078	-0.858
Year 2003	-0.221	-0.530	-4.713	-1.484	0.025	0.173	0.047	0.191	-0.065	-0.736
Year 2004	-0.257	-0.606	-4.725	-1.515	0.022	0.150	0.320	1.341	-0.102	-1.126
Year 2005	-0.077	-0.195	-3.976	-1.292	-0.298	-2.126[†]	-0.144	-0.614	-0.148	-1.690[Ψ]
Year 2006	0.417	1.040	-6.295	-1.956[Ψ]	-0.015	-0.107	0.016	0.067	-0.266	-3.068[‡]
Adjusted R²	0.282		0.251		0.465		0.243		0.169	
F-Value	4.179[‡]		3.815[‡]		10.353[‡]		3.491[‡]		3.233[‡]	
N	98		102		129		95		133	

Legend:

Column I, II, III, IV and V: $\Delta OPI_{i,t} = \alpha_0 + \alpha_1 NEG\Delta OPI_{i,t-1} + \alpha_2 ACE_{i,t} + \alpha_3 NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \beta_0 \Delta OPI_{i,t-1} + \beta_1 \Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1} + \beta_2 \Delta OPI_{i,t-1}*ACE_{i,t} + \beta_3 \Delta OPI_{i,t-1}$ $*NEG\Delta OPI_{i,t-1}*ACE_{i,t} + \sum \gamma_t + \varepsilon_{i,t}$ where: $ACE_{i,t}$ = composite score index where firm *i* in time period *t* is scored one (1) for each of following criteria met: (a) audit committee of firm *i* in time period *t* is comprised mainly of non-executive independent directors; (b) at least one of the non-executive independent directors on the audit committee of firm *i* in time period *t* is suitably qualified and accredited to be deemed a financial accounting expert (i.e. a degree in accounting and a member of a professional accounting body); and (c) during the time period *t* the audit committee of firm *i* met five times or more. If a criterion is not met then firm *i* in time period *t* is scored zero (0) for that criterion. The range of the composite score is from zero (0) to three (3); see equations in Table 6.2 for definitions of other variables; and Ψ, †, □ = significant at the 0.10, 0.05 and 0.01 confidence levels.

Table E: 4 reports that the coefficient on $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}$ is negative for regressions using *Construction*, *Consumer Products* and *Industrials Products* (see Table E: 4 Column I, Column II and Column III). This result is consistent with the coefficient on similar variables for the regression using the pooled sample (see Table 6.8 Column I). However, in contrast to the statistically significant result of the coefficient for the regression using the full 557 firm-year observations, none of the coefficients for all regressions is statistically significant.

With regards to the two-way interaction term $\Delta OPI_{i,t-1}*ACE_{i,t}$, the directionality of the coefficient on this variable for the pooled sample as shown in Table 6.8 Column I (PS) is negative and consistent with the negative directionality of the coefficient for all regressions (see Table E: 4 Column I, Column II, Column III and Column IV). In terms of significance, the coefficient on $\Delta OPI_{i,t-1}*ACE_{i,t}$ is statistically insignificant from zero for all regressions. This is, however, in contrast to the statistically significant result of the coefficient on this variable for the regression using the pooled sample as shown in Table 6.8 Column I (PS).

Finally, for the variable of interest in testing the association between audit committee effectiveness and earnings persistence, $\Delta OPI_{i,t-1}*NEG\Delta OPI_{i,t-1}*ACE_{i,t}$, the coefficient on this variable is statistically insignificant from zero for all regressions (see Table E: 4 Column I, Column II, Column III and Column IV).This is inconsistent with the statistically significant result of the coefficient on this variable for the regression using the pooled sample as shown in Table 6.8 Column I (PS). In terms of the directionality of the coefficient, Table 6.8 Column I (PS) reported that the coefficient on this variable is positive and consistent with the directionality of the coefficient for all regressions.

APPENDIX F: This appendix provides details of results that demonstrate association of direct custodian excellence, auditor quality and audit committee effectiveness if testable hypotheses were formulated for unconditional conservatism (e.g. using accruals and cash flows) as defined by Ball and Shivakumar (2005).

Table F: 4- Acceptance and rejection of hypotheses for unconditional conservatism

Panel A:Direct custodian excellence ($DCE_{i,t}$) and earnings conservatism

GP_{DCE} - Earnings conservatism will be significantly higher amongst Malaysian publicly listed firms having pivotal direct custodians of the financial reporting system of a higher quality than Malaysian publicly listed firms with pivotal direct custodians of the financial reporting system of a lower quality.

Hypothesis	Description	Accepted/Rejected
GH_c	Malaysian publicly listed firms with direct custodian excellence are more likely to be associated with unconditional earnings conservatism (i.e. recognition of negative operating cash flows quicker than positive operating cash flows).	Accepted

Panel B:Auditor quality ($AQ_{i,t}$) and earnings conservatism

GP_{AQ} - Earnings conservatism of Malaysian public listed firms engaging the services of a high quality external auditor will be significantly higher than Malaysian public listed firms engaging the services of a low quality external auditor.

Hypothesis	Description	Accepted/Rejected
H_{1c}	Malaysian publicly listed firms with a higher quality external auditor are more likely to be associated with unconditional earnings conservatism (i.e. recognition of negative operating cash flows quicker than positive operating cash flows).	Rejected

Panel C:Audit committee effectiveness ($ACE_{i,t}$) and earnings conservatism

GP_{ACE} - Earnings conservatism of Malaysian public listed firms with a more effective audit committee will be significantly higher than Malaysian public listed firms with a less effective audit committee.

Hypothesis	Description	Accepted/Rejected
H_{2c}	Malaysian publicly listed firms with more effective audit committees are more likely to be associated with unconditional earnings conservatism (i.e. recognition of negative operating cash flows quicker than positive operating cash flows).	Accepted

APPENDIX G: This appendix provides some explanation on descriptive statistics for composite scores of $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$ (i.e. Table 5.18).

Table G: 5- Descriptive statistics for composite scores of $DCE_{i,t}$, $AQ_{i,t}$ and $ACE_{i,t}$

Panel A: Breakdown by major industry classification

Sector Name	DCE	AQ	ACE
Construction	1.000	0.000	0.000
Consumer Products	1.000	0.000	1.000
Industrial Products	1.000	0.000	0.000
Mining	1.000	0.000	1.000
Plantation	3.000	2.000	1.000
Property	1.000	0.000	0.000
Technology	1.000	0.000	1.000
Trading & Services	1.000	0.000	1.000
Minimum Score	**1.000**	**0.000**	**0.000**

DCE is a product of AQ and ACE. A company could have got a score of zero (0) for either AQ or ACE but none of the companies have minimum score of zero for both composites of AQ and ACE. That is the reason for the minimum score of DCE is one (1), when the minimum scores for AQ and ACE, both are zero (0).

APPENDIX H: This appendix provides descriptive statistics for variables entering regressions models (e.g. $RET_{i,t}$, $NEGRET_{i,t}$, $\Delta OPI_{i,t-1}$, $NEG\Delta OPI_{i,t-1}$).

Table H: 6- Descriptive variable for timeliness approach (by sectors)

Panel A: Variable of $RET_{i,t}$

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	0.094	-0.044	0.693	-0.667	3.750
Consumer Products	102	0.110	0.015	1.076	-0.979	10.300
Industrial Products	129	-0.011	-0.067	0.428	-0.944	1.923
Mining	23	0.177	-0.011	0.631	-0.591	2.000
Plantation	12	0.041	-0.065	0.425	-0.575	0.788
Property	86	0.068	-0.061	0.603	-0.645	3.557
Technology	12	0.014	-0.123	0.451	-0.494	0.800
Trading & Services	95	0.150	-0.089	1.042	-0.917	8.000
Total	557	0.078	-0.046	0.775	-0.979	10.300

Panel B: Variable of $NEGRET_{i,t}$

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	0.561	1.000	0.499	0.000	1.000
Consumer Products	102	0.461	0.000	0.501	0.000	1.000
Industrial Products	129	0.577	1.000	0.496	0.000	1.000
Mining	23	0.522	1.000	0.511	0.000	1.000
Plantation	12	0.667	1.000	0.492	0.000	1.000
Property	86	0.581	1.000	0.496	0.000	1.000
Technology	12	0.583	1.000	0.515	0.000	1.000
Trading & Services	95	0.574	1.000	0.497	0.000	1.000
Total	557	0.553	1.000	0.498	0.000	1.000

Table H:1 presents the descriptive statistics for variables entering regression model using timeliness approach on an industry basis (i.e. $RET_{i,t}$ and $NEGRET_{i,t}$). Table H:1 Panel A provides information on variable of $RET_{i,t}$. The average value of $RET_{i,t}$ for the final useable sample is 0.078 with a median of -0.046. The minimum value of $RET_{i,t}$ is -0.979 and the maximum is 10.300. As shown in Table H:1 Panel A, the average value of $RET_{i,t}$ in the *Industrial Products*, *Plantation*, *Property* and *Technology* industries are below the full final useable sample average. The *Industrial Products* industry has the lowest average value of $RET_{i,t}$ (i.e. -0.011) followed by the *Technology* industry (i.e. 0.014). As the average total assets for the *Mining* and *Trading & Services* industries are substantially higher than other industry sectors, it is not surprising the value of $RET_{i,t}$ is the highest. Another interesting observation is that *Consumer Products* industry has the highest and also the lowest value of $RET_{i,t}$ (see Table H:1 Panel A). In respect to variable of $NEGRET_{i,t}$, as reported in Table H:1 Panel B, the average value of $NEGRET_{i,t}$ on industry basis is 0.553. The highest average value of $NEGRET_{i,t}$ is *Plantation* (i.e. 0.667) which is above the average value for full industry. While, *Consumer Products* has the lowest average value of $NEGRET_{i,t}$ (i.e. 0.461).

Table H: 2- Descriptive variable for timeliness approach (by years)

Panel A: Variable of *RET*$_{i,t}$

Year	N	Mean	Median	Std Dev	Min	Max
2002	84	-0.167	-0.275	0.310	-0.706	0.800
2003	91	0.240	0.131	0.515	-0.594	2.139
2004	92	-0.173	-0.203	0.341	-0.944	1.574
2005	96	-0.093	-0.129	0.336	-0.979	1.063
2006	96	0.462	0.227	1.035	-0.800	8.000
2007	98	0.167	-0.049	1.235	-0.915	10.300
Total	557	0.078	-0.046	0.775	-0.979	10.300

Panel B: Variable of *NEGRET*$_{i,t}$

Years	N	Mean	Median	Std Dev	Min	Max
2002	84	0.738	1.000	0.442	0.000	1.000
2003	91	0.374	0.000	0.486	0.000	1.000
2004	92	0.772	1.000	0.422	0.000	1.000
2005	96	0.708	1.000	0.457	0.000	1.000
2006	96	0.198	0.000	0.401	0.000	1.000
2007	98	0.551	1.000	0.500	0.000	1.000
Total	557	0.553	1.000	0.498	0.000	1.000

Table H:2 provides an annual breakdown for the descriptive statistics of variables entering regression model using timeliness approach (i.e. $RET_{i,t}$ and $NEGRET_{i,t}$). The average value of $RET_{i,t}$ for full sample is 0.078 (see Table H:2 Panel A). The highest average value is recorded in 2006 (i.e. 0.462) and the lowest average value is in 2005 (i.e. -0.093). Overall, the average value of $RET_{i,t}$ is quite unstable throughout the years. Meanwhile, the highest value of $RET_{i,t}$ is recorded in 2007 (i.e. 10.300) and the lowest is in 2005 (i.e. -0.979). With regards to variable of $NEGRET_{i,t}$ (see Table H:2 Panel B), the average value of $NEGRET_{i,t}$ on yearly basis is 0.553. The highest average value of $NEGRET_{i,t}$ is recorded in 2004 (i.e. 0.772) which is above the average value for full industry. Among others, year 2002 and 2005 also recorded value of $NEGRET_{i,t}$ above the average value for full industry (i.e. 0.738 and 0.798) respectively. Meanwhile, the lowest average value of $NEGRET_{i,t}$ (i.e. 0.198) is recorded in year 2006.

Table H: 3- Descriptive variable for persistence approach (by sectors)

Panel A: Variable of $\Delta OPI_{i,t-1}$

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	0.159	0.002	1.441	-4.794	9.272
Consumer Products	102	0.040	0.005	1.457	-8.060	6.231
Industrial Products	129	0.019	0.012	0.635	-4.678	4.893
Mining	23	-0.080	0.012	0.296	-1.281	0.091
Plantation	12	0.016	0.017	0.102	-0.243	0.144
Property	86	-0.130	0.001	1.423	-12.913	1.483
Technology	12	-0.104	0.012	0.410	-1.396	0.128
Trading & Services	95	0.014	0.009	0.729	-4.117	4.411
Total	557	0.017	0.006	1.120	-12.913	9.272

Panel B: Variable of $NEG\Delta OPI_{i,t-1}$

Name	N	Mean	Median	Std Dev	Min	Max
Construction	98	0.459	0.000	0.501	0.000	1.000
Consumer Products	102	0.392	0.000	0.491	0.000	1.000
Industrial Products	129	0.377	0.000	0.486	0.000	1.000
Mining	23	0.478	0.000	0.511	0.000	1.000
Plantation	12	0.333	0.000	0.492	0.000	1.000
Property	86	0.477	0.000	0.502	0.000	1.000
Technology	12	0.250	0.000	0.452	0.000	1.000
Trading & Services	95	0.351	0.000	0.480	0.000	1.000
Total	557	0.406	0.000	0.491	0.000	1.000

Table H:3 presents the descriptive statistics for variables entering regression model using persistence approach on an industry basis (i.e. $\Delta OPI_{i,t-1}$ and $NEG\Delta OPI_{i,t-1}$). Table H:3 Panel A shows that for the final usable sample the average value of $\Delta OPI_{i,t-1}$ is 0.017. Overall, the *Construction* industries has the highest average value of $\Delta OPI_{i,t-1}$ (i.e. 0.159) which is almost ten times the average for full final usable sample. On individual basis, the *Property* industries has the smallest value of $\Delta OPI_{i,t-1}$ (i.e. -12.913). Whereas, *Construction* industries has the largest value of 9.272. With regards to variable of $NEG\Delta OPI_{i,t-1}$ (see Table H:3 Panel B), the average value of $NEG\Delta OPI_{i,t-1}$ is 0.406 for 557 firm year-observations. Across the eight major Malaysia industry categories, the *Construction*, *Mining* and *Property* have the average value of $NEG\Delta OPI_{i,t-1}$ above the industry average.

Table H: 4- Descriptive variable for persistence approach (by years)

Panel A: Variable of $\Delta OPI_{i,t-1}$

Year	N	Mean	Median	Std Dev	Min	Max
2002	84	-0.156	-0.002	1.661	-12.913	6.001
2003	91	0.009	0.006	1.101	-8.060	5.952
2004	92	-0.003	0.001	0.627	-3.729	3.584
2005	96	0.049	0.012	0.930	-5.636	5.007
2006	96	-0.035	0.001	0.936	-4.678	6.231
2007	98	0.209	0.025	1.251	-1.396	9.272
Total	557	0.017	0.006	1.120	-12.913	9.272

Panel B: Variable of $\Delta OPI_{i,t-1}$

Years	N	Mean	Median	Std Dev	Min	Max
2002	84	0.524	1.000	0.502	0.000	1.000
2003	91	0.385	0.000	0.489	0.000	1.000
2004	92	0.457	0.000	0.501	0.000	1.000
2005	96	0.333	0.000	0.474	0.000	1.000
2006	96	0.479	0.000	0.502	0.000	1.000
2007	98	0.276	0.000	0.449	0.000	1.000
Total	557	0.406	0.000	0.491	0.000	1.000

Table H:4 provides an annual breakdown for the descriptive statistics of variables entering regression model using persistence approach (i.e. $\Delta OPI_{i,t-1}$ and $NEG\Delta OPI_{i,t-1}$).The average value of $\Delta OPI_{i,t-1}$ for full sample is 0.017 (see Table H:4 Panel A). The highest average value is recorded in 2007 (i.e. 0.209) and the lowest average value is in 2002 (i.e. -0.156). Overall, the average value of $RET_{i,t}$ is quite unstable throughout the six years under study. Meanwhile, the highest value of $\Delta OPI_{i,t-1}$ is recorded in 2007 (i.e. 9.272) and the lowest is in 2002 (i.e. -12.913). With regards to variable of $NEG\Delta OPI_{i,t-1}$ (see Table H:4 Panel B), the average value of $NEG\Delta OPI_{i,t-1}$ on yearly basis is 0.406. The highest average value of $NEG\Delta OPI_{i,t-1}$ is recorded in 2002 (i.e. 0.524) which is above the average value for full industry. Among others, year 2004 and 2006 also recorded value of $NEG\Delta OPI_{i,t-1}$ above the average value for full industry (i.e. 0.457 and 0.479) respectively. Meanwhile, the lowest average value of $NEG\Delta OPI_{i,t-1}$ (i.e. 0.276) is recorded in year 2007.

APPENDIX I: This appendix presents a correlation matrix for all variables entering the regression models to identify any potential multicollinearity problems in the regressions. Multicollinearity refers to high correlations among the independent variables. Before the regression analysis is undertaken, the data was analyzed for the effect of the multicollinearity. It refers to the high correlation among the independent variables that may render the model is invalid.

Table I: 7- A correlation matrix for independent variables

	$FEE_{i,t}$	$BN_{i,t}$	$SP_{i,t}$	AQi,t	$IND_{i,t}$	$EXP_{i,t}$	$DIL_{i,t}$	$ACEi,t$	$DCEi,t$
$FEE_{i,t}$	1.000								
$BN_{i,t}$	-0.049	1.000							
$SP_{i,t}$	-0.005	0.657$^\square$	1.000						
$AQ_{i,t}$	0.464$^\square$	0.784$^\square$	0.803$^\square$	1.000					
$IND_{i,t}$	-0.028	0.073†	0.032	0.037	1.000				
$EXP_{i,t}$	-0.006	0.086†	0.060	0.068	0.074†	1.000			
$DIL_{i,t}$	0.044	-0.062	-0.009	-0.013	-0.048	0.079†	1.000		
$ACE_{i,t}$	0.017	0.036	0.042	0.046	0.301$^\square$	0.718$^\square$	0.691$^\square$	1.000	
$DCE_{i,t}$	0.375$^\square$	0.639$^\square$	0.657$^\square$	0.814$^\square$	0.205$^\square$	0.471$^\square$	0.391$^\square$	0.617$^\square$	1.000

Legend:
For definitions of $AQ_{i,t}$ components, see equations in Table 7. 22; For definitions of $ACE_{i,t}$ components, see equations in Table 7. 24; and Ψ, †, $\square$ = significant at the 0.10, 0.05 and 0.01 confidence levels (1-tailed).

Table I:1 shows that the level of correlation between independent variables (i.e. component of $AQ_{i,t}$ and $ACE_{i,t}$) are relatively low which is between -0.490 and 0.464 at 1% significance level. According to Judge et al. (1988), correlation below absolute 0.8 should not be too harmful with regards to multicollinearity.