THE IMPACT OF INDUSTRY SPECIALIST AUDIT FIRMS ON PRICING OF DISCRETIONARY ACCRUALS AND EARNINGS MANAGEMENT: AUSTRALIAN EVIDENCE

Harjinder Singh*, May Sze Khoo**

Abstract

This paper examines the relationship between the capital market pricing of Australian publicly listed firms and earnings management (proxied by discretionary accruals) during a three-year pooled time-frame of 2008 to 2010. More importantly, the role of industry specialist audit firms on market returns and earnings management relationship is investigated. Main results indicate a significant negative relationship between firm returns and earnings management. However, there is no significance in the role of industry specialist audit firms on the firm returns and earnings management linkage. On the other hand, sensitivity tests indicate that industry specialist audit firms play in significant monitoring role for audit committees with less than fifty percent of their members classified as independent. One major contribution is for regulators (aiming to improve audit quality) to strengthen key firm-level corporate governance mechanisms. Specifically, by placing the consequences from this paper into perspective, there may be a greater likelihood of increased audit quality by altering audit committee's structure, composition and authority levels.

Keywords: Industry Specialist Audit Firms, Earnings Management, Pricing of Discretionary Accruals

JEL classification: M41, M42

**Curtin University, GPO Box U1987, Bentley 6845, Perth, WA, AUSTRALIA*
Tel: +65 (08) 9266 7904
Fax: + 65 (08) 9266 7196
Email: h.singh@curtin.edu.au
***Curtin University*

1.0 Introduction

This paper analyses the impact of earnings management practices by Australian listed firms on stock returns. More importantly, this paperexamineswhetherusage of an industry specialist audit firm by companies moderates the association between earnings management and stock returns.Capital markets and how capital markets transact with accounting information, in particular information on earnings, is of considerable interest to participants of capital markets. Accruals earnings are superior to cash flows given that accrual earnings overcome the timing and mismatching problems inherent in measuring cash flows (Dechow 1994). In addition, accruals allow managers communicate inside and, therefore, private information thereby improving the utility of earnings to reflect underlying economic value. At the same time, managers can potentially abuse Generally Accepted Accounting Principles (GAAP) by engaging in the aggressive reporting of accruals thereby engagingdebate on the informativeness of reporting earnings by firms. Given that outsiders cannot directly observe this opportunistic behaviour by managers, investors and creditors may demand a higher cost of capital from firms to compensate them for this risk. High-accrual firms, therefore, face greater agency costs relative to low-accrual firms and such costs influence the stock returns of firms (Francis, Maydew, and Sparks 1999).

Earnings management is also of great concern and remains a constant topic of debate and discussion among investors, analysts,regulators and other key stakeholders. Firm shareholders try to reduce the information asymmetries they suffer from managers and discourage managers from practicing aggressive earnings management. One potential strategy adopted by shareholders is the appointment of external industry specialist auditorsto conduct an independent review of the firm's financial statements(Lin and Hwang 2010; Romanus, Maher, and Fleming 2008; Krishnan 2003a; Becker et al. 1998; DeFond and Jiambalvo 1991).After the corporate collapses of Enron, WorldCom and global auditing firm Arthur Andersen, the United States of America (US) passed the Sarbanes-Oxley Act (SOX) of 2002 in an attempt to increase the quality of financial reporting. Investors in corporate Australia also faced similar large-scale commercial failures of HIH Insurance, Harris Scarfe, One.Tel and Ansett (Tonkin 2007). The Australian

government also responded by implementing the Corporate Law Economic Reform Program, specifically CLERP 9 (Audit Reform and Corporate Disclosure) Bill of 2004. The global financial collapses and resulting allegations of accounting impropriety by firms resulted in widespread calls for accounting reform and a reassessment of levels of audit quality.

The auditing profession and its credibility has been subject to heavy criticism in the aftermath of global corporate scandals and the subsequent deterioration in earnings quality. This deterioration inaudit qualityhasled to declining investor confidence in the quality of audited financial reportsproduced by firms (Romanus, Maher, and Fleming 2008).Notably amongst those who raised concerns about the decline in audit quality is Arthur Levitt, the former chairman of the Securities Exchange Commission (SEC) in the US, who identified fears that the erosion in the quality of earnings would impact the quality of financial reportingby firms (Certified Public Accountants 1998). The subsequent lack of investor confidence in audit quality should not be taken lightly, since audit quality has far-reaching implications and can seriously undermine the effective functioning of capital markets and economies (Becker et al. 1998; Lin and Hwang 2010).Concerns surrounding firm stock pricing and reported earnings quality are therefore paramount to shareholders (Nussbaum 2002).

Analysing the association between earnings management, stock returns and the moderating role of auditor specialisation provides a number of significant contributions. There is limited empirical evidence in the extant literature on the role of external auditors in the pricing of accruals within the stock market in Australia. Most of the reported findings are in the US market (Abarbanell and Lehavy 1999; Guidry, Leone, and Rock 1999; Krishnan 2003b; Richardson, Tuna, and Wu 2003)while this paper seeks an examination within an Australian context. The findings from this paper will contribute to the extant literature by providing updated evidence on the relationships between earnings management, stock returns and auditor specialisation.Although a number of studies examining capital market pricing, earnings management and industry specialist audit firms were conducted individually in other published studies, (Balvers, McDonald, and Miller 1988; Krishnan 2003a; Simunic 1980; Huang et al. 2007; Romanus, Maher, and Fleming 2008; Bruns and Merchant 1990; Coulton, Taylor, and Taylor 2005), limited research has been undertaken examining all three empirical constructs holistically. By focusing on the moderating role of industry specialist audit firms on the relationship between earnings management and stock returns, this paperalso identifies factors that guide and impact investors' valuations of firms within the capital market arena.

Results from this paper will benefit a number of stakeholders. Regulatory bodies will be able to determine the effectiveness of legislation introduced to improve the quality of financial reporting by firms by reducing the incidence of earnings management. Specifically, the importance of an industry specialist audit firm and the role such an auditor plays in constraining earnings management will be clearer to important capital market participants.Another potential benefit derives from minimising subsequent corporate failuresthus benefitting capital market participants. Investors and firms' corporate management teams will also benefit from understanding the significance of industry specialist audit firms and related factors influencing the valuations of firms in capital markets.This paper is organised as follows: Chapter 2outlines the literature review and hypotheses development. Chapter 3specifics the research methodologyadopted in this paper and Chapter 4reports the descriptive statistics. Chapter 5 discusses the main findings the robustness and sensitivity tests. Finally, Chapter 6 concludes this paper.

2.0 Literature Review and Hypotheses Development

The issue of how capital markets transact with accounting information, in particular information on earnings, is of considerable interest to participants of capital markets. Accruals earnings are superior to cash flows given that accrual earnings overcome the timing and mismatching problems inherent in measuring cash flows (Dechow 1994). In addition, accruals allow managers communicate inside and, therefore, private information thereby improving the utility of earnings to reflect underlying economic value. At the same time, managers can potentially abuse Generally Accepted Accounting Principles (GAAP) by engaging in the aggressive reporting of accruals thereby engaging debate on the informativeness of reporting earnings by firms. Given that outsiders cannot directly observe this opportunistic behaviour by managers, investors and creditors may demand a higher cost of capital from firms to compensate them for this risk. High-accrual firms, therefore, face greater agency costs relative to low-accrual firms and such costs influence the stock returns of firms (Francis, Maydew, and Sparks 1999). Auditing plays an important role in mitigating these agency costs by constraining the opportunistic management of accruals. However, evidence on whether the stock market recognizes the value of auditing (and, therefore, audit quality)in pricing of accruals is limited particularly in Australia.

While prior research has shown that high quality auditors are able to constrain aggressive and opportunistic reporting of discretionary accruals by firms relative to low-quality auditors(Balsam, Krishnan, and Yang 2003; Gramling and Stone 2001; Hogan and Jeter 1999), the issue of whether stock

market participants recognise the usefulness of high quality auditors in the pricing of discretionary accruals is still an open-ended question. Krishnan's (2003a), building on the work of Teoh and Wong (1993), Becker et al.(1998), and Francis, Maydew and Sparks (1999),demonstrated that there is a comparative advantage of using Big 6 auditors over non-Big 6 auditors as such appointments are reflected in the pricing of discretionary accruals. Such findings enhance the understanding of cross-sectional variation in pricing of discretionary accruals and the implications of hiring a high-quality auditor. On the other hand, other studies provide contradictory evidence when examining the relationship between pricing, valuation of new issues and disclosure quality (Dunn and Mayhew 2004; Feltham, Hughes, and Simunic 1991; Balvers, McDonald, and Miller 1988).Watts and Zimmerman (1986)argue that auditing plays an important role in mitigating agency costs arising out from separation of ownership and control in modern corporations. There is evidence that firms with greater agency costs employ high quality auditors to assure investors and other stakeholders that their reported earnings are credible (Francis, Maydew, and Sparks 1999). Recently however, the spate of audit failures and resulting charges of a lack of auditor independence has undermined the belief that Big 4 auditors continue to be associated with audit quality. Gul and Krishnan (2002) find that, in recent years, Big 4 auditors allow their clients greater accounting flexibility via accruals-based earnings management. As a result, discretionary accruals have become less informative and investors are subsequently attaching a lower value to discretionary accruals in their decision-making process.

2.1 Pricing of Discretionary Accruals

Accounting researchers are continuously investigating the extent to which accruals communicate firm performance to outsiders given thatfinancial reports are vital to writing principal-agent contracts (Francis, Maydew, and Sparks 1999; Subramanyam 1996). Due to management opportunism when earnings management is involved, contracting parties are likely to respond by price protecting. Bowen, Burghstahler and Daley (1987)find that, compared to cash flows, accrual earnings contain and convey more private firm information to shareholders. Their (Bowen, Burghstahler and Daley (1987)) findings also suggest that information contained within both cash flows and accruals are consistent with the information impounded into security prices. Dechow (1994) extends Bowen, Burghstahler and Daley's (1987) results and discusses the preference of accruals over cash flows in measuring firm performance given that cash flows do not accurately reflect the firm's activities during a given period. Notwithstanding such studies, overall results do not conclusively indicate that such preferences exist resulting from managerial accounting decisions within the constraints of regulatory obligations.

Accounting decisions made by management are subject to management discretion and there are advantages and disadvantages to managers having such flexibility. Optimistically, managers seeking to disseminate inside information can do so with earnings management, and in the process, improve the value of reported earnings (Healy and Palepu 1993; Holthausen 1990; Watts and Zimmerman 1986). On the contrary, agency theory suggests that the information asymmetry between managers and shareholders (owners of the firm) is more likely to influence managers to engage in opportunistic earnings management practices, affecting the reliability of financial reports (Healy and Palepu 1993; Watts and Zimmerman 1986). Manager's accounting choices are not entirely constrained by contractual provisions, and the personal interests of managers may be another source of motivation to engage in such self-interest behaviour(Warfield, Wild, and Wild 1995).

Prior studies (for example, Beaver 1968; Ball and Brown 1968) provide evidence that there is information content in accounting earnings announcements.Specifically, Ball and Brown (1968) find a significantly positive correlation between stock return in the month of an earnings announcement with earnings change over that firm's previous year's earnings clearly demonstrating that accounting earnings contemporaneously capture a portion of the information set that is reflected in security/stock returns. Because accounting earnings measurement rules emphasize transaction-based revenue recognition compared to the stock market's focus on current and expected future net revenues, earnings' lack of timeliness is not surprising (Beaver, Lambert, and Morse 1980; Collins et al. 1994). In other words, stock prices lead accounting earnings in terms of reflecting new information.Prior research conducted by Subramanyam (1996) explored the ramifications of managerial choices in discretionary accruals on the value of reported earnings in conveying managers' private information. Subramanyam (1996)provides empirical evidence on the pricing of discretionary accruals by the stock market and explains the processing of accounting information by capital markets. Subramanyam's (1996)paper finds that firm valuation is likely to be negatively associated with discretionary accruals.Subramanyam's (1996) results are particularly relevant to this paper given the supposition in this paper that investors are likely to place a higher value on a firm when that firm is subject to a higher quality audit.Previous research suggests that pricing of discretionary accruals is influenced by audit quality (Krishnan 2003a; Gul and Krishnan 2002). However, such papers tend to define audit quality in terms of brand name reputation. The main findings of these papers are consistent with the perception that brand name auditors (that is, Big 4

audit firms) are able to identify and restrain opportunistic accruals-based earnings management practices and hence, clients of Big 4 audit firms are more likely to have higher quality reported discretionary accruals Big 4 audit firms are consequently better predictors of a company's future viability/profitability. Investors are thus inclined to put more value on reported results and increase the pricing of such firm (Gul and Krishnan 2002).

Mascarenhas, Cahan and Naiker (2010)take a step further and investigate the pricing of discretionary accruals of firms with specialist and non-specialist auditors using US data. While the paper of Mascarenhas, Cahan and Naiker (2010) did not find evidence to support the belief that specialist auditors sufficiently treat opportunistic and informative discretionary accruals differently, it is important for future research to consider whether the positive effect of reducing management opportunism would be offset by the negative effect of reducing the information, leaving the net informativeness of discretionary accruals largely unchanged (Mascarenhas, Cahan, and Naiker 2010).This paper extends on the opportunistic component of discretionary accruals by acknowledging there is an informative component which is beneficial to the firm. The specialised industry knowledge of auditors should enable them to recognise the contrasting elements of accruals and treat both differently. This further emphasises the importance of examining discretionary accruals rather than earnings in an effort to obtain a better understanding of the relationship between auditor industry specialisation and earnings quality. This paper differs from prior studies in this area in three distinct ways: (1) it extends the paper of Krishnan (2003a) by examining the impact of engaging an industry specialist auditor on market pricing of discretionary accruals, rather than the impact of engaging just a brand name auditor (that is, Big 4 auditor); (2) using Subramanyam's(1996) research model to calculate pricing of discretionary accruals which does not make the assumption that management engage in earnings management purely for opportunistic reasons; and (3) the use of Australian data.

2.2 Earnings Management

Earnings management is of great concern and remains a constant topic of debate and discussion among investors, analysts, regulators and other key stakeholders. Firm shareholders try to reduce the information asymmetries they suffer from managers and discourage managers from practicing aggressive earnings management. One potential strategy adopted by shareholders is the appointment of external industry specialist auditorsto conduct an independent review of the firm's financial statements(Lin and Hwang 2010; Romanus, Maher, and Fleming 2008; Krishnan 2003a; Becker et al. 1998; DeFond and Jiambalvo 1991).Past literature reveal several definitions of earnings management. Healy and Wahlen (1999)believe that earnings management occurs when managers use judgement inherent in financial reporting to alter financial reports to either mislead some stakeholders about underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers. A more succinct definition was encapsulated by Schipper (1989) who describes earnings management to be a deliberate intervention in the external financial reporting process with the intent of obtaining private gain. It is clear that despite taking on a core definition, earnings are still innately unobservable given that outsiders are only able to scrutinise reported earnings in financial reports (Lin and Hwang 2010; Francis, Maydew, and Sparks 1999; Krishnan 2003a). Given the lack of ability to precisely detect financial intervention, managers are subject to stakeholders' pessimistic belief that financial intervention occurs for opportunistic reasons (Krishnan 2003a; Francis, Maydew, and Sparks 1999).Given, therefore, that earnings management by management for a number of different reasons, the reported financial numbers are sometimes legitimately subject to questions of credibility. The different motivations of management can take on two distinctresults. Dye (1988) observes that, in certain circumstances, earnings management practices can maximize the value of firm shares. On the other hand, Beneish (1997)foundthat earnings management practices decrease earnings quality.Such negative impact is also likely to cause damage to the firm's reputation, particularly due to the overall general pessimism of earnings management (Guidry, Leone, and Rock 1999).

Managers are able to communicate inside knowledge with flexible accounting choices, especially with the use of accruals which enhance the economic value of reported earnings. On the other hand, this flexibility provides an ability for managers to engage in opportunistic earnings management which considerably undermine the usefulness of reported earnings (Krishnan 2003a). Doubts surrounding the true value of reported earnings also arise from 'noise' and probable partiality which comes from the assumption of managers acting in their self-interest (Francis, Maydew, and Sparks 1999). 'Noise' is an accounting consequence of the organisational obligation to prepare financial reports according to GAAP. Even though the intentions of accounting standards is to protect users and thequality of corporate disclosures, GAAP shouldprovide allowances for flexibility because managers, relative to board of directors, stakeholders and other outsiders, are deemed to understand and hold more private information about the background of business operations. While flexible GAAP rules enhances the credibility of financial reports as a communication tool, the subjectivity managers employ here also

establishes the groundwork for earnings management where accounting numbers may be manipulated by using specific accounting choices for self-interestgain (Healy and Wahlen 1999). As a result, the reliability of financial reports may be negated through such opportunistic practices and diminished even further when outsiders view the firm as a significant risk (Francis, Maydew, and Sparks 1999; Levitt 1998). Earlier studies have documented that managers are prone to choosing accounting procedures and practices which improve reported earnings for private gain(DeFond and Jiambalvo 1991; Bernard and Skinner 1996; DeAngelo 1988; Warfield, Wild, and Wild 1995).

A central premise of this paper is the dominant role of reported earnings to the shareholders' decision-making process including the buying and selling of firm shares/securities. This, in turn, will have a direct bearing on share prices in capital markets, assuming the contemporaneous reaction of share prices to the publication of accounting numbers and corporate disclosures. Prior research on the relationship between the motivations of capital market participants and earnings management delve mainly into the unexpected accruals behaviour in situations where there are capital market transactions and a gap between firm performance and analysts' or investors' expectations (for example, Healy and Palepu 2001; Healy and Wahlen 1999). Given that earnings management practices are inherently unobservable, accounting researchers rely on proxies to determine whether firms engage in such earnings management behaviour. Despite measurement errors, the discretionary component of accruals is the most popular and best formulated proxy used in the earnings management literature and, as such, will also be utilised in this paper(Kang and Sivaramakrishnan 1995; Krishnan 2003b; Schipper 1989). The specific accrual component of reported earnings must be drawn out from reported earnings using multiple regression models. One reason for the superiority in using discretionary accruals as a proxy for earnings management is that accruals allows managers to pass on their private knowledge of the firm and, in doing so, enhance the reflective capability of earnings on the firm's underlying economic value (Mascarenhas, Cahan, and Naiker 2010; Krishnan 2003a; Healy and Palepu 1993). Nevertheless, many prior studies were concerned with the second element of discretionary accruals , that is, whether managers are likely to succumb to private gain motivations and engage in aggressive reporting of accruals which would seriously undermine the informativeness of discretionary accruals(Gul and Krishnan 2002; Healy and Palepu 1993). The latter view is adopted in this paper and based on the discussions, therefore, this paper's first hypothesis is as follows:

H_1: Discretionary accruals of firms are negatively associated with the market returns of those firms.

2.3 Industry Specialist Audit Firms

Industry specialist audit firms have attracted the attention of a growing number of researchers who examine its impact on a number of financial accounting areas (Gramling and Stone 2001). Researchers believe that there are multiple facets to audit quality that go beyond the intrinsic value of brand name reputation of audit firms(Becker et al. 1998; DeAngelo 1981; Lim and Tan 2008). The quality of engaged external auditors is a major influenting factor for firm stakeholders pursuing high quality financial statements (Krishnan 2003a; Becker et al. 1998). Most prior studies investigate differences between Big 6 and non-Big 6 audit firms (Krishnan 2003a; Gul, Lynn, and Tsui 2002; Francis, Maydew, and Sparks 1999; Becker et al. 1998; Teoh and Wong 1993; DeAngelo 1981). The findings of DeAngelo (1981)have been accepted by most accounting researchers suggesting that Big 6 auditors enjoy a stronger brand-name reputation than non-Big 6 auditors.[1]As Krishnan (2003b) points out, there are also differing qualities amongst Big N firms, in particular industry specialisation, which can influence the quality of financial reports. Knechel, Naiker and Pacheco (2007) point out a crucial caveat of audit quality, also critical to this paper, that brand name reputation is likely to be an inaccurate and incomplete proxy.In a review of the earnings management literature, Healy and Wahlen (1999) call for research on factors that limit managers' earnings management ability and the role that audit quality can play. This paper is a response to the call and examines one potential mitigating factor impacting reported earnings quality, that is, auditors' industry specialisation.

Given that firms have recently started to place more emphasis on coordinating their operating and accounting systems to industry standards (Emerson 1993), the industry specialisation of auditors has become progressively more significant in the

[1]Initially the Big 8 accounting firms were: Arthur Andersen & Co.; Arthur Young & Co.; Coopers & Lybrand; Deloitte Haskins & Sells; Ernst &Winney; Peat Marwick Mitchell; Price Waterhouse; and Touche Ross. Subsequent to two major mergers in 1989, the Big 8 firms were reduced to the Big 6. This resulted from the merger between Ernst & Winney and Arthur Young & Co. to become Ernst & Young and Deloitte Haskins & Sells with Touche Ross to become Deloitte Touche Ross. As a result of another merger in 1998 between Coopers & Lybrand and Price Waterhouse to form PriceWaterhouseCoopers, the Big 6 was reduced to the Big 5. Finally, the dissolution of Arthur Andersen & Co. in 2002 as a result of the Enron aftermath reduced the Big 5 to the Big 4.

corporate world (AICPA 1998; Bell et al. 1997). Audit firms may seek to enhance their profiles (by investing in specialist knowledge, tools and technology) and there by potentially increase the volume of provision for both audit or non-audit services within a particular industry in an overall effort to generate greater revenues (Gramling and Stone 2001). Many researchers believe that this investment by audit firms seeking to differentiate themselves may increase efficiencies given theeconomies of scale afforded by, among other things, investing in resources and technologies of focal industries (see, Carcello, Hermanson, and McGrath 1992; Abbott and Parker 2000; Beasley and Petroni 2001; Hogan and Jeter 1999). A comparative advantage of having industry expertise is the differentiation of services provided by various audit firms (Shockley and Holt 1983; Simunic and Stein 1987; Hogan and Jeter 1999). Kwon (1996) explores the possibility of better rational assessments of clients' financial estimates and accounts by industry audit specialists resulting in enhancing audit quality (by the increased likelihood of limiting the discretion and judgment of management). Gramling and Stone (2001) extend Kwon's (1996) arguments by explaining that product differentiation arising from industry specialisation also impacts audit firms' market performance, more commonly in terms of audit fees and audit quality.

Bedard et al.'s (1991) research show that auditors engaged by manufacturing clients have the required knowledge and experience to better detect errors in manufacturing client's accounting numbers. Likewise, Johnson, Jamal and Berryman (1991) observe a positive relationship between experienced auditors in a particular industry and better fraud detection. O'Keefe, King and Gaver (1994) find that in comparison to non-specialist auditors, industry specialist auditors show evidence of superior conformity with auditing regulations and standards. Kanagaretnam, Lim and Lobo (2010)find that industry specialist auditors in the banking industry can provide a better assessment on the adequacy of the loan loss provisions, (an accrual account unique to banks), compared to non-industry specialist auditors. Other studies also document the improvement in overall financial reporting quality and the enhanced mitigation of fraudulent financial reporting with the engagement of industry specialist auditors(Johnson, Jamal, and Berryman 1991; Carcello and Nagy 2004; Krishnan 2005, 2003b).

Audit firm industry expertise is inherently unobservable relying instead on proxies developed and calibrated over time in relation to estimation and measurement. Yardley et al. (1992) led this area of research by presenting the first industry specialist measure. Yardley et al.'s (1992) measure estimates industry expertise as a ratio of an audit firm's total fees generated from a particular industry compared to all of the industries the audit firm serves. Sales or assets of firms were utilized as proxies for audit fees by Yardley et al.(1992) since audit fee information has been made publicly available only recently. Another popular measure afforded to accounting researchers is developed by Gramling and Stone (2001) and applied in Krishnan's (2003b)paper. The measure seeks to minimise any concomitant measurement errors and boost the consistency of regression findings. It utilises the estimations of an audit firm's industry market share as a representation of audit fees earned in one particular industry by an audit firm as a proportion to total audit fees earned by all the various audit firms serving that specific industry(Gramling and Stone 2001; Krishnan 2003b).Furthermore, Shockley and Holt (1983)and auditing standards emphasise the need for auditors to acquire industry specific knowledge as a vital element of the audit. Additionally, the increasingly complex changes in the international corporate economy has considerable repercussions for the increased need by auditors to acquire industry knowledge prior to the audit (Bell et al. 1997). According to Knechel, Naiker and Pacheco (2007), benefits from utilizing an industry specialist should result in investors reacting positively to the appointment of an auditor with industry specialist skills. This, rationale, therefore, leads to this paper's second hypothesis, which examines the impact of auditor industry specialization on the stock returns/earnings management linkage:

H_2: The pricing of discretionary accruals is higher for firms employing an industry specialist audit firm in spite of reported discretionary accruals, compared to firms not employing an industry specialist audit firm.

3.0 Research Methodology

3.1 Sample Selection

The initial sample in this paper comprised all 2,114 Australian firms continuously listed on the Australian Securities Exchange (*ASX*) across the time period 2008 to 2010 inclusive using the Aspect Huntley's*FinAnalysis* database. In total, the entire capitalisation of the ASX market as at 2008 (the base year utilised) totalled $1,698 trillion dollars. Table 1 Panel A outlines the sample selection process and Panel B summarises the industry breakdown of the final usable sample. When determining the initial sample of 400 firms for 2008, a number of exclusions are necessary in keeping with the established prior literature.

Table 1. Sample Selection and Industry Breakdown

Panel A: Sample Selection			
Number of firms listed on the *ASX* as at 1 January, 2008			2114
Exclusions:			
Financial Institutions	328		
Foreign Incorporated Firms	178		
Zero Market Capitalisation	249	(755)	
			1359
Sample Pool for Random Selection			
Top Quarter	100		
Second Quarter	100		
Third Quarter	100		
Fourth Quarter	100		
			400

Panel B: Sample Firm Breakdown by Industry in 2008	No. of Firms	% of Sample
ASX Industry		
Energy	63	15.75
Materials	163	40.75
Industrials	52	13.00
Consumer Discretionary	41	10.25
Consumer Staples	7	1.75
Health Care	38	9.50
Information Technology	23	5.75
Telecommunications	5	1.25
Utilities	8	2.00
Total	400	100

Consistent with prior research (Mascarenhas, Cahan, and Naiker 2010; Choi, Kim, and Zang 2010; Krishnan 2003b; Kim, Chung, and Firth 2003; Simunic 1980), this paper excludes financial institutions due to the difficulty in estimating the discretionary accruals of financial institutions due to their unique financial reporting requirements(Clifford and Evans 1997). This paper includes only firms trading in Australia and also excludes firms with zero market capitalisations. The resulting sample of 400 firms per year in this paper is drawn randomly (after stratifying the sample into quartiles) from the population of the remaining 1,359 listed companies.[2] Given this paper examines the time period of years 2008 to 2010, there are consequently 1,200 firm-year observations in total for analysis over the selected three-year period.

3.2 Measurement of Key Variables

Data required from the financial statements of firms in the final useable sample to calculate pricing of discretionary accruals, discretionary accruals and auditor industry specialisation are collected from either the Aspect Huntley *FinAnalysis*or*DatAnalysis* databases.

3.2.1 Pricing of Discretionary Accruals

This model examines whether there is a marked difference in the stock returns for client firms of industry specialist auditors. An industry specialist audit firm indicator, (variable denoted *AUDSPEC*calculated using Krishnan (2003b) model) will be adopted as an interacting variable for both the dependant and independent variables. Consistent also with the methodology employed in Krishnan (2003a), time effects will be captured using a year indicator variable (denoted *YEAR*). The model is therefore, estimated in Equation 1:

[2]In view of the fact that maximisation of shareholder value is one of the motivating factors of firm performance (Gewald and Gellrich 2007), a firm's market capitalisation is applied in this paper as the most suitable indicator when sorting listed firms on the ASX as at 2008.

$$RET_{j,t} = \beta_0 + \beta_1 CFO_{j,t} + \beta_2 NDA_{j,t} + \beta_3 DA_{j,t} + \beta_4 AUDSPEC_{j,t} + \beta_5 CFO_{j,t} * AUDSPEC_{j,t} + \beta_6 NDA_{j,t} * AUDSPEC_{j,t} + \beta_7 DA_{j,t} * AUDSPEC_{j,t} + \sum_{k-1}^{n} \gamma_k YEAR_k + \varepsilon_{j,t} \quad [1]$$

Where

$RET_{i,t}$ = stock return for firm j in year *t* calculated over a twelve-month period ending three months after the fiscal year-end for year *t*,

$CFO_{i,t}$ = cash flow from operations scaled by lagged total assets for firm *j* in year *t*,

$NDA_{i,t}$ = non-discretionary accruals for firm *j* in year *t*,

$DA_{i,t}$ = discretionary accruals for firm *j* in year *t*,

$AUDSPEC_{j,t}$ = audit firm industry specialist indicator, auditor's industry market share for firm *j*in year *t*,

YEAR = indicator variable of time effects,

β = coefficients for variables 0 through 7,

$\varepsilon_{j,t}$ = error term firm *j* in year *t*.

Of specific interest in Equation 1 is the interaction between $AUDSPEC_{j,t}$ and $DA_{j,t}$. We posit that if there is an increased informativeness in the discretionary accruals of clients with industry specialist auditors, β_7 is expectedto be a positive and significant coefficient.[3]

3.2.2 Discretionary Accruals

There are two stages in estimating the discretionary component of accruals exhibited by firms. The first step employs the cross-sectional version of the seminal Jones (1991) model employed in Krishnan's (2003a)paper to estimate non-discretionary accruals.This model (specified in Equation 2) utilises the level of property, plant and equipment and changes in revenue of the client firm to calculate non-discretionary accruals. Total accruals are calculated as the difference between net income and operating cash flows.[4]Consistent with prior research (Krishnan 2003b; Bartov, Gul, and Tsui 2000), the cross-sectional Jones (1991) model is computed separately for each individual combination of GIC codes and calendar years. Fitted values are subsequently identified as non-discretionary accruals. Equation 2 I specified as follows:

$$\frac{TAC_{j,t}}{TA_{j,t-1}} = \alpha_{j,t}\frac{1}{TA_{j,t-1}} + \beta_{j,t}\left(\frac{\Delta REV_{j,t}}{TA_{j,t-1}} - \frac{\Delta AR_{j,t}}{TA_{j,t-1}}\right) + \gamma_{j,t}\frac{PPE_{j,t}}{TA_{j,t-1}} + \varepsilon_{j,t} \quad [2]$$

Where

$TAC_{j,t}$ = total accruals for firm *j* in year *t*,

TA = total assets,

ΔREV = the change in net revenue,

ΔAR = the change in accounts receivable,

PPE = plant, property and equipment,

α = coefficients for variables 0 through 7,

$\varepsilon_{j,t}$ = error term firm *j* in year *t*.

The second step involves computing the discretionary component of accruals which is represented by the error term in Equation 2 (that is, the difference between total accruals and non-discretionary accruals).The error term, therefore, represents the discretionary component of accruals and is the independent variable in the main regression models used to test the hypotheses of this paper.

3.2.3 Industry Specialist Audit Firms

This paper utilises the model employed by Gramling and Stone (2001) as a measure for audit firm industry specialisation.The auditor's industry market share (*AUDSPEC*) is assessed as audit fees earned by an audit firm in a particular industry as a proportion of the total audit fees earned by all existing audit firms employed in that same particular industry and is specified in Equation 3:

$$AUDSPEC_{i,k} = \frac{\sum_{j=1}^{J_{i,k}} SALES_{i,j,k}}{\sum_{i=1}^{I_k}\sum_{j=1}^{J_{i,k}} SALES_{i,j,k}} \quad [3]$$

Where

SALES = sales revenue,

$\sum_{j=1}^{J_{i,k}} SALES_{i,j,k}$ = the sum of the sales of all $J_{i,k}$ clients of audit firm *i* in industry *k*,

$\sum_{i=1}^{I_k}\sum_{j=1}^{J_{i,k}} SALES_{i,j,k}$ = the sales of all $J_{i,k}$clients in industry *k* summed over all I_k audit firms in the sample with clients ($J_{i,k}$) in industry *k*.

Consistent with Gramling and Stone (2001), an audit firm is defined to be an industry specialist when it has a market share of 25% or more within an industry.

3.2.4 Control Variables

Multivariate Ordinary Least Squares (OLS) regression analysis is the principal method utilised to test the relationship between pricing of discretionary accruals and earnings management. Control variables are also included in the regression analysis to minimise any cross-sectional effects (Bartov, Gul, and Tsui 2000).Prior studies suggest that client firm size, risk and corporate governance characteristics may influence the significance of earnings management practices within firms(Ashbaugh-Skaife, Collins, and

[3]There arealso three indicator*YEAR* variables in Equation 1 since the analysis involves data over three years.

[4] Without taking into consideration unusual items and terminated operations.

LaFond 2006; Klein 2002). Therefore, in this paper, client firm, size, risk and leverage are controlled for by: (1) the natural logarithm of total assets (denoted $LNassets_{j,t}$), (2) the ratio of firm's long term debt and firm's total assets(denoted $LEVERAGE_{j,t}$), and (3) return on assets of firm(denoted $ROA_{j,t}$).Client firm corporate governance characteristics are measured based on its board of directors, audit committee and external auditor features. Specifically, this paper examines the number of both board of directors and audit committee meetings for a firm's annually within the time period; the ratio of independent directors on both the board of directors and audit committee respectively; and last, whether the external audit firm employed by a client firm is a Big 4 auditor or not.

3.3 Statistical Models

This paper utilises OLS regression tests to analyse the relationship between pricing of discretionary accruals and earnings management. The hypotheses of this paper will be tested formally by using two regression models. The analysis is conducted on a pooled sample of 1200 firm-year observations. Initially, the relationship between the pricing of discretionary accruals and discretionary accruals is examined without the moderating role of auditor industry specialisation. Subsequently, auditor industry specialisation is introduced in a subsequent regression model to determine the impact, if any, of auditor industry specialisation on the relationship between the pricing of discretionary accruals and discretionary accruals.

3.3.1 Without Interacting Variable($AUDSPEC_{j,t}$)

The initial statistical model used in this paper examines only market returns and discretionary accruals is defined in Equation 4 as:[5]

$$RET_{j,t} = \beta_1 + \beta_2 DA_{j,t} + \beta_3 LNassets_{j,t} + \beta_4 ROA_{j,t} + \beta_5 LEVERAGE_{j,t} + \beta_6 \%INDPAC_{j,t} + \beta_7 \%INDPBOD_{j,t} + \beta_8 MEETAC_{j,t} + \beta_9 MEETBOD_{j,t} + \beta_{10} BIG4_{j,t} + \beta_{11} INDUSTRY_{j,t} + \varepsilon_{j,t} \quad [4]$$

Where

$RET_{j,t}$ = stock return for firm *j* in year *t* calculated over a twelve-month period ending three months after the fiscal year-end for year *t*,
$DA_{j,t}$ = discretionary accruals for firm *j* in year *t*,
$LNassets_{j,t}$ = natural logarithm of total assets of firm *j* in year *t*,
$ROA_{j,t}$ = return on assets of firm *j* in year *t*,
$LEVERAGE_{j,t}$ = ratio of long term debt and total assets of firm *j* in year *t*,
$\%INDPAC_{j,t}$ = ratio of independent directors on audit committee of firm *j* in year *t*,
$\%INDPBOD_{j,t}$ = ratio of independent directors on board of directors of firm *j* in year *t*,
$MEETAC_{j,t}$ = number of audit committee meetings of firm *j* had in year *t*,
$MEETBOD_{j,t}$ = number of board of directors meetings of firm *j* had in year *t*,
$BIG4_{j,t}$ = Big 4 audit firmemployed by client firm *j* in year *t*,
$INDUSTRY_{j,t}$ = $MATERIALS_{j,t}$ + $CONSDISC_{j,t}$ + $HEALTHCARE_{j,t}$ + $INDUSTRIALS_{j,t}$ +$INFOTECH_{j,t}$ + $ENERGY_{j,t}$ + $TELECOMM_{j,t}$ + $CONSSTAP_{j,t}$ + $UTILITIES_{j,t}$
$MATERIALS_{j,t}$ =a dummy variable given the value of 1 if the firm *j* is in the materials industry in year *t* and 0 if otherwise
$CONSDISC_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer discretionary industry in year *t* and 0 if otherwise
$HEALTHCARE_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the health care industry in year *t* and 0 if otherwise
$INDUSTRIALS_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the industrials industry in year *t* and 0 if otherwise
$INFOTECH_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the information technology industry in year *t* and 0 if otherwise
$ENERGY_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the energy industry in year *t* and 0 if otherwise
$TELECOMM_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the telecommunicationsindustry in year *t* and 0 if otherwise
$CONSSTAP_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer staplesindustry in year *t* and 0 if otherwise
$UTILITIES_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the utilities industry in year *t* and 0 if otherwise
β = coefficients on variables 0 through 11,
$\varepsilon_{j,t}$ = error term firm *j* in year *t*.

Equation 4 has been specified to examine the relationship between market returns and discretionary accruals. Consistent with prior literature,$MEETAC_{j,t}$ and $MEETBOD_{j,t}$ do not require transformation for regression analyses (Sharma, Sharma, and Ananthanarayanan 2011; Singh and Newby 2010). Of the control variables, only total assets ($LNassets_{j,t}$), is transformed to correct normality and linearity biases(Neyman and Scott 1960).

[5]For brevity, year indicator variables have not been included in the statistical models specified(Lim and Tan 2008).

3.3.2 With Interacting Variable($AUDSPEC_{j,t}$)

Equation 5 considers the moderating effect of audit firm industry specialisation on client firm's earnings management practices and pricing of discretionary accruals and is, therefore, defined as:

$$RET_{j,t} = \beta_1 + \beta_2 DA_{j,t} + \beta_3 AUDSPEC_{j,t} + \beta_4 DA_{j,t} * AUDSPEC_{j,t} + \beta_5 LNassets_{j,t} + \beta_6 ROA_{j,t} + \beta_7 LEVERAGE_{j,t} + \beta_8 \%INDPAC_{j,t} + \beta_9 \%INDPBOD_{j,t} + \beta_{10} MEETAC_{j,t} + \beta_{11} MEETBOD_{j,t} + \beta_{12} BIG4_{j,t} + \beta_{13} INDUSTRY_{j,t} + \varepsilon_{j,t} \quad [5]$$

Where

$RET_{j,t}$ = stock return for firm *j* in year *t* calculated over a twelve-month period ending three months after the fiscal year-end for year *t*,

$DA_{j,t}$ = discretionary accruals for firm *j* in year *t*,

$AUDSPEC_{j,t}$ = audit firm industry specialist indicator, auditor's industry market share for firm *j* in year *t*,

$DA_{j,t}$*$AUDSPEC_{j,t}$ = interacting variable between $DA_{j,t}$ and $AUDSPEC_{j,t}$

LNassets = natural log of total assets of firm *j* in year *t*,

ROA = return on assets of firm *j* in year *t*,

$LEVERAGE_{j,t}$ = ratio of long term debt and total assets of firm *j* in year *t*,

$\%INDPAC_{j,t}$ = ratio of independent directors on audit committee of firm *j* in year *t*,

$\%INDPBOD_{j,t}$ = ratio of independent directors on board of directors of firm *j* in year *t*,

$MEETAC_{j,t}$ = number of audit committee meetings of firm *j* had in year *t*,

$MEETBOD_{j,t}$ = number of board of directors meetings of firm *j* had in year *t*,

$BIG4_{j,t}$ = Big 4 audit firmemployed by client firm *j* in year *t*,

$INDUSTRY_{j,t}$ = $MATERIALS_{j,t}$ + $CONSDISC_{j,t}$ + $HEALTHCARE_{j,t}$ + $INDUSTRIALS_{j,t}$ + $INFOTECH_{j,t}$ + $ENERGY_{j,t}$ + $TELECOMM_{j,t}$ + $CONSSTAP_{j,t}$ + $UTILITIES_{j,t}$

$MATERIALS_{j,t}$ =a dummy variable given the value of 1 if the firm *j* is in the materials industry in year *t* and 0 if otherwise

$CONSDISC_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer discretionary industry in year *t* and 0 if otherwise

$HEALTHCARE_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the health care industry in year *t* and 0 if otherwise

$INDUSTRIALS_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the industrials industry in year *t* and 0 if otherwise

$INFOTECH_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the information technology industry in year *t* and 0 if otherwise

$ENERGY_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the energy industry in year *t* and 0 if otherwise

$TELECOMM_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the telecommunications industry in year *t* and 0 if otherwise

$CONSSTAP_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer staples industry in year *t* and 0 if otherwise

$UTILITIES_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the utilitiesindustry in year *t* and 0 if otherwise

β = coefficients on variables 0 through 13,

$\varepsilon_{j,t}$ = error term firm *j* in year *t*.

The interacting variable, $DA_{j,t}$ * $AUDSPEC_{j,t}$ is used to test the second hypothesis of this paper. It examines the value that the market places on a firm hiring an industry auditor specialist and the industry auditor specialist's impact on controlling opportunistic earnings management practices of the firm.

4.0 Descriptive Statistics and Correlation Analysis

4.1 Descriptive Statistics

Table 2 reports the descriptive statistics for all the pooled continuous and dichotomous variables in the final useable sample. The discussion of descriptive statistics is organized at Panel A for all continuous variables and Panel B for dichotomous variables.

Table 2 Panel A reports that the dependent variable, $RET_{j,t}$ (calculated from the stock return for firm *j* in year *t* calculated over a twelve-month period ending three months after the fiscal year-end for year *t*) has a mean of 0.060 consistent with prior literature (Frankel and Lee 1998; Easton and Zmijewski 1989; Ball and Brown 1968) and a standard deviation of 1.581 for the pooled sample during the observation window of 2008 to 2010. $RET_{j,t}$ also reveals an unusually high maximum of 37.667 in its range within the pooled sample.[6] The independent variable, $DA_{j,t}$ (the discretionary component of accruals for firm *j* in year *t*) as a proxy for earnings management has a mean of 0.000 and a standard deviation of 0.998. $TA_{j,t}$(representing total assets of firm in the pooled sample) show the mean of $827 million with a standard deviation of $6.3 million.Descriptive statistics for profitability, $ROA_{j,t}$ and leverage, $LEVERAGE_{j,t}$ ratios reported in Panel A (that is, earnings before income tax divided by total assets and ratio of long term debt and total assets of firm *j* in year *t*) show firms in this pooled sample having means of -0.325 and 0.107 with standard deviations of 1.788 and 0.778 respectively. The profitability ratio ($ROA_{j,t}$) in Panel A shows firms performing poorly in terms of profitability and the current leverage ratio ($LEVERAGE_{j,t}$) in the pooled sample do not suggest that firms face any significant liquidity problems within the observation window.

There are four corporate governance variables included in Panel A. The mean percentages of independent directors on the board of directors and audit committee are 46.4% ($\%INDPBOD_{j,t}$) and 61.0% ($\%INDPAC_{j,t}$) with standard deviations of 24.8% and 33.6% respectively. The average number of board of directors meetings ($MEETBOD_{j,t}$) is 10 with a standard deviation of 5 in the years 2008 to 2010 for the pooled sample. Panel A also shows that some board of directors in the pooled sample did not meet at all during the observation period whereas other boards met up to 39 times over the same period. Correspondingly, the number of audit committee meetings ($MEETAC_{j,t}$) have a mean of 2 with a standard deviation of almost 2.5. Panel A also reports that some audit committee in the pooled sample did not meet during the observation period whereas other audit committees met up to 21 times during the same period.

Table 2 Panel B reports the descriptive statistics for the two dichotomous variables. Almost 23% of firms (271 of 1200 firm-year observations) in the pooled sample employed an industry specialist auditor. Panel B also reveals that almost 47% of firms (558 of 1200 firm-year observations) in sample employed a BIG4 auditor for the time period of 2008 to 2010.

4.2 Correlation Analysis

Table 3 presents a correlation coefficient matrix reporting both Pearson and Spearman listwise correlation coefficients for all the continuous and dichotomous variables used in this paper.[7] The correlation analyses tests the variables on a bivariate basis and reports any significant relations at two different confidence levels (1% and 5%). A review of the Pearson correlation matrix in Table 3 highlights a number of observations. First impressions are that many significant bivariate correlations exist between the firm size variable, $LNassets_{j,t}$ and other control variables at the 0.01 confidence level.The four corporate governance variables are correlated to one another and this is unsurprising given that the variables are largely controlling for the same empirical constructs. In addition, audit quality as represented by $BIG4_{j,t}$ is significantly correlated to the corporate governance variables. The correlations are expected since the level of a client firm's corporate governance settings is often viewed as a signal the firm's credibility to shareholders.None of the variables in both the Pearson listwise and Spearman rank coefficient matrices are near the multi-collinearity critical limits of 0.8(Hair et al. 1995). Standard interpretation can, therefore, be made on a univariate basis and subsequent multivariate testing can hence be undertaken with confidence.

[6] The extreme value is addressed in the robustness tests, specifically by winzorising tests discussed in Section5. Winzorising removes the highest one percent and lowest one percent of the pooled sample and rerunning the main regressions. Winzorising, therefore, reduces the number of extreme values which may affect main results.

[7]Spearman's rank correlation coefficient analysis was also carried out as an additional test for the dichotomous variables in the sample, $BIG4_{j,t}$ and $AUDSPEC_{j,t}$. Non-parametric Spearman rank correlation analysis is somewhat similar to the Pearson correlation analysis specifically between the ranked variables as the Spearman rank correlation analysis converts continuous variables into ranked variables before undertaking the associated correlation analysis (Tabachnick and Fidell 2001; Hair et al. 1995). Table 3 reports the isolated bivariate Spearman rank correlation coefficient to be significant at the 1% confidence level and, identical to the same bivariate correlation within the Pearson correlation matrix. It is unsurprising that the results from the Spearman's rank coefficient correlation fully support the correlation results using the Pearson correlation test for this paper as the Spearman's test has less stringent parameters.

Table 2. Descriptive Statistics

Panel A: Descriptive Statistics for Continuous Variables (n=1200)					
Variables	Mean	Median	Standard Deviation	Minimum	Maximum
$RET_{j,t}$	0.060	-0.189	1.581	-1.000	37.667
$DA_{j,t}$	0.000	0.057	0.998	-15.262	14.123
$TA_{j,t}$ ($000s)	827,007	20,917	6,323,000	10.552	100,000,000
$ROA_{j,t}$	-0.325	-0.066	1.788	-37.204	28.650
$LEVERAGE_{j,t}$	0.107	0.000	0.778	0.000	24.260
$MEETBOD_{j,t}$	10	9	4.948	0	39
$MEETAC_{j,t}$	2	2	2.408	0	21
$\%INDPBOD_{j,t}$	0.464	0.500	0.248	0.000	1.000
$\%INDPAC_{j,t}$	0.610	0.670	0.336	0.000	1.000

Panel B: Descriptive Statistics for Dichotomous Variables		
Variables	No. of firms	Percentage (%)
$AUDSPEC_{j,t}$ Client firm *j* in time period *t* is scored one (1) if the incumbent auditor *i* in time period *t* is an industry specialist in industry *k*; otherwise client firm *j* in time period *t* is scored zero (0).	271	22.6
Client firm *j* in time period *t* is not audited by an industry specialist in industry *k*.	929	77.4
Total	1200	100.0
$BIG4_{j,t}$ Client firm *j* in time period *t* is scored one (1) if the incumbent auditor *i* in time period t is a Big4 audit firm; otherwise client firm *j* in time period *t* is scored zero (0).	558	46.5
Client firm *j* in time period *t* is not audited by a Big4 audit firm.	642	53.5
Total	1200	100.0

Where:
$RET_{j,t}$ = stock return for firm *j* in year *t* calculated over a twelve-month period ending three months after the fiscal year-end for year *t*; $DA_{j,t}$ = discretionary component of accruals for firm *j* in year *t;* $MEETAC_{j,t}$ =number of meetings the audit committee of firm *j* had in year *t;* $MEETBOD_{j,t}$ =number of meetings the board of directors of firm *j* had in year *t;* $\%INDPAC_{j,t}$ =ratio of independent directors on the audit committee of firm *j* in year *t;* $\%INDPBOD_{j,t}$ =ratio of independent directors on the board of directors of firm *j* in year *t;* $TA_{j,t}$ =total assets of firm *j* in year *t;* $LEVERAGE_{j,t}$ = ratio of long term debt and total assets of firm *j* in year *t;* $ROA_{j,t}$ = return on assets of firm *j* in year *t;* $AUDSPEC_{j,t}$= audit firm industry specialist indicator calculated for an auditor with industry market share equal to or over 25% for firm *j* in year *t*; $BIG4_{j,t}$ = audit firm with brand name reputation employed by client firm *j* in year *t*

5.0 Multivariate Analysis and Additional Tests

5.1 Multivariate Results

Table 4 documents the results of the regression models utilised to analyse the relationship between: (1) earnings management and client firm's market returns and (2) earnings management and client firm's market returns moderated by industry specialist auditors.The first regression model reports the results of the multivariate relationship between market returns and discretionary accruals (without the moderating role of industry specialist auditors) in Columns 2 and 3. The independent variable, $DA_{j,t}$ reports a significant negative relationship with the dependent variable, $RET_{j,t}$ (where p-value=0.012). Consistent with prior literature, results from Columns 2 and 3 in Table 4 provides evidence that earnings management practices by firms negatively impact the

market returns of firms (Healy and Wahlen 1999; Healy and Palepu 1995; Dechow 1994; Healy and Palepu 1993). Columns 4 and 5 presents the results of a second regression model utilised which includes the interaction variable, $DA_{j,t}$ * $AUDSPEC_{j,t}$ (in addition to the two individual independent variables representing$DA_{j,t}$*$AUDSPEC_{j,t}$). The p-value of independent variable, $DA_{j,t}$ in the second model continues to report a significantly negative relationship with the market returns of firms (where p-value=0.018). Based on this result, H_1 is, therefore, accepted. A further review of the regression results inColumns 4 and 5 suggests that the negative coefficients of independent variable, $AUDSPEC_{j,t}$ and interacting variable, $DA_{j,t}$ * $AUDSPEC_{j,t}$ were not found to have any direct significant correlation with client firm's market returns (where p-value=0.499). Results therefore suggest that the appointment of an industry specialist auditor does not impact/moderate the relationship between the pricing of discretionary accruals and discretionary accruals.H_2 is, therefore, rejected.

Table 3. Pearson (Spearman) Correlation Below (Above) Diagonal – Pooled Sample

	$RET_{j,t}$	$DA_{j,t}$	$LNassets_{j,t}$	$ROA_{j,t}$	$LEVERAGE_{j,t}$	$BIG4_{j,t}$	$\%INDPAC_{j,t}$	$\%INDPBOD_{j,t}$	$MEETAC_{j,t}$	$MEETBOD_{j,t}$	$AUDSPEC_{j,t}$
$RET_{j,t}$	1.000										
$DA_{j,t}$	-0.053	1.000									
$LNassets_{j,t}$	-0.040	0.057*	1.000								
$ROA_{j,t}$	-0.023	0.029*	-0.025**	1.000							
$LEVERAGE_{j,t}$	0.013	0.068	0.231	-0.070*	1.000						
$BIG4_{j,t}$	-0.046	-0.002	0.476**	0.063*	-0.002	1.000					0.579**
$\%INDPAC_{j,t}$	-0.018	0.029	0.371**	0.042	-0.009	0.253**	1.000				
$\%INDPBOD_{j,t}$	0.013	0.050	0.273**	0.023	-0.025	0.200**	0.824**	1.000			
$MEETAC_{j,t}$	-0.016	0.026	0.510**	0.094**	0.012	0.270**	0.316**	0.261**	1.000		
$MEETBOD_{j,t}$	0.018	0.011	0.239**	-0.008	-0.009	0.079	0.180**	0.150**	0.289**	1.000	
$AUDSPEC_{j,t}$	-0.035	0.029	0.275**	-0.001	-0.015	0.579**	0.132**	0.139**	0.188**	0.047	1.000

* Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level (2-tailed)

Where:
$RET_{j,t}$ = stock return for firm *j* in year *t* calculated over a twelve-month period ending three months after the fiscal year-end for year *t*; $DA_{j,t}$ = discretionary component of accruals for firm *j* in year *t*; $LNassets_{j,t}$ =natural logarithm of total assets of firm *j* in year *t*; $ROA_{j,t}$ = return on assets of firm *j* in year *t*; $LEVERAGE_{j,t}$ = ratio of long term debt and total assets of firm *j* in year *t*; $BIG4_{j,t}$= audit firm with brand name reputation employed by client firm *j* in year *t*; $\%INDPAC_{j,t}$ =ratio of independent directors on the audit committee of firm *j* in year *t*; $\%INDPBOD_{j,t}$ =ratio of independent directors on the board of directors of firm *j* in year *t*; $MEETAC_{j,t}$ =number of meetings the audit committee of firm *j* had in year *t*; $MEETBOD_{j,t}$ =number of meetings the board of directors of firm *j* had in year *t*; $AUDSPEC_{j,t}$= audit firm industry specialist indicator calculated from auditor's industry market share for firm *j* in year *t*

$LNassets_{j,t}$ reports a negative and statistically insignificant coefficient. The firm risk variables are both statistically insignificant but report different directionality, that is, where $ROA_{j,t}$is positive and $LEVERAGE_{j,t}$ is negative. While the corporate governance variable $\%INDPAC_{j,t}$ reports a negative and statistically insignificant coefficient, the other three variables, (namely, $\%INDPBOD_{j,t}$, $MEETBOD_{j,t}$, $MEETAC_{j,t}$) all report positive and equally statistically insignificant coefficients. Moreover, the coefficient on the audit quality control variable, $BIG4_{j,t}$ is negative and statistically insignificant. In relation to industry variables included in the first regression model represented in Columns 2 and 3, only the industry variable, $INFOTECH_{j,t}$ has a significant relationship (where p-value=0.017) with the coefficient of the relationship being positive. Similarly, this also stands true in the second regression model represented in Columns 4 and 5 for $INFOTECH_{j,t}$ as the only significant predictor (where p-value=0.018). Results indicate that firms in the information technology industry are positively associated to market returns and earnings

management regardless of the appointment of an industry specialist auditor.[8]

The initial regression model run to examine the association between the dependent variable, $RET_{j,t}$ and the independent variable, $DA_{j,t}$ has an adjusted R^2 of 0.039. The ensuing regression model with interacting variable, $DA_{j,t}$ * $AUDSPEC_{j,t}$ has a similarly low adjusted R^2 of 0.038. This indicates that the variables entered into the first regression model explain only 3.9% of the change in variation in the dependent variable, $RET_{j,t}$ with the goodness-of-fit (that is, adjusted R^2) marginally decreasing by 0.1% in the second model with the inclusion of the interacting variable. There are no multicollinearity concerns between the variables used in both regressions models as the variables with the highest variance inflation factors (VIF) of 3.427 (*%INDPAC*) and 3.450 (*%INDPAC*) are still well below the critical value of 10 (Hair et al. 2006).

5.2 Robustness Tests

This paperadopted a battery of robustness tests and sensitivity analyses to support the strength and validity of the main results. The robustness tests performed include winzorising of the pooled sample and introducing alternative proxies measures, specifically for the independent variable, audit firm industry specialisation and firm size.Winzorising of the pooled sample was undertaken to ensure that extreme values in the data set did not affect the main regression results in Table 4.First, truncation was performed on both the dependent variable, $RET_{j,t}$and the independent variable, $DA_{j,t}$by removing the top one percent (n=12) and bottom one percent (n=12) from the pooled sample (n=1200) ranked in descending order, thereby leaving a sample of 1176 firm-year observations. After removing potential outliers and re-running the regression results on Table 4, winzorising tests fully support the main findings of this paper.The regression models utilised in this paperwere also amended to include the natural logarithm of total salesof firm *j* in year *t* ($LNsales_{j,t}$). The alternative measure of firm size (as tabulated in Table 4) is derived to determine if the main regression results in Section 5.1 are influenced by the choice of the measure of firm size used (that is, natural logarithm of operating assets of firm *j* in year *t*, $LNassets_{j,t}$). The regression models utilised in Table 4were also amended to replace the audit firm industry specialist indicator measure to an auditor with industry market share equal to or over 20% and 30% for firm *j* in year *t*.Main multivariate regression results werererun and also fully support the main results of this paper.

5.3 Sensitivity Analysis

This section discusses the sensitivity of the main results based on identified split points for the following auditee characteristics: firm size, firm risk, corporate governance and audit quality.Partitioning by firm size and firm risk were undertaken to determine if the main regression results in Table 4 are influenced by firm size and firm risk effects. The pooled sample was partitioned based on the identified split point, which in this case is at the median point where the firm size (risk) measures were ranked in descending order and larger (riskier) firms were identified in the top 600 of the pooled sample. Regression results from testing the sensitivity of main results to firm size and firm riskmeasures fully support the main results of this paper.Additionally, the pooled sample was also partitioned by the four corporate governance features: namely, the percentage of independent directors on both the audit committee and board of directors, and the number of meetings in a year for both the audit committee and board of directors' members.

Partitioning by the percentage of independent directors on the board of directors was based on boards with more than 50 percent of the membersbeing independent. The sample was also partitioned by the minimum number of audit committee meetings in a year (that is, a minimum of four meetings should be undertaken by client firm's audit committee in a year) as recommended in Principle 4 of *ASXListing Rules*(ASX Corporate Governance Council 2003). Partitioning by the number of board of directors meetings was undertaken based on boards which meet at least ten times a year and boards which meet less than ten times a year. Finally, partitioning by brand name reputation of external auditors was also undertaken and, in this case, dividing the pooled sample between Big 4 and non-Big 4 external audit firms. The sensitivity results using partitioned firm size, firm risk, audit quality and three of the four corporate governance variables all support the main results of this paper.

[8]For purposes of brevity, the three *YEAR* indicator variables were not included within the table but had been taken into account in the multivariate analyses.

Table 4. Regression Results for Discretionary Accruals, $DA_{j,t}$ on Market Returns, $RET_{j,t}$ – Moderating Role of Audit firm Industry Specialisation (Pooled Sample)

	***without AUDSPEC*$_{j,t}$ (n=1200)**		***with AUDSPEC*$_{j,t}$ (n=1200)**	
	Coefficient	**p-value**	**Coefficient**	**p-value**
Constant	**0.254**	**0.559**	**0.247**	**0.571**
Independent Variables				
$DA_{j,t}$	**-0.072**	**0.012**	**-0.069**	**0.018**
$AUDSPEC_{j,t}$	-	-	**-0.011**	**0.758**
$DA_{j,t} * AUDSPEC_{j,t}$	-	-	**-0.020**	**0.499**
Control Variables – ***Firm Size Variable***				
$LNassets_{j,t}$	**-0.003**	**0.931**	**-0.003**	**0.942**
Control Variables – ***Firm Risk Variables***				
$ROA_{j,t}$	**0.023**	**0.446**	**0.022**	**0.463**
$LEVERAGE_{j,t}$	**-0.032**	**0.267**	**-0.032**	**0.267**
Control Variables – ***Corporate Governance Variables***				
$\%INDPAC_{j,t}$	**-0.056**	**0.281**	**-0.059**	**0.259**
$\%INDPBOD_{j,t}$	**0.058**	**0.251**	**0.061**	**0.232**
$MEETAC_{j,t}$	**0.002**	**0.950**	**0.003**	**0.930**
$MEETBOD_{j,t}$	**0.020**	**0.503**	**0.020**	**0.502**
Control Variables – ***Audit Quality Variable***				
$BIG4_{j,t}$	**-0.032**	**0.330**	**-0.024**	**0.539**
Control Variables – ***Industry Variables***				
$MATERIALS_{j,t}$	**0.024**	**0.369**	**0.025**	**0.380**
$CONSDISC_{j,t}$	**-0.007**	**0.817**	**-0.008**	**0.790**
$HEALTHCARE_{j,t}$	**0.049**	**0.106**	**0.050**	**0.104**
$INDUSTRIALS_{j,t}$	**-0.036**	**0.256**	**-0.037**	**0.242**
$INFOTECH_{j,t}$	**0.072**	**0.017**	**0.072**	**0.018**
$ENERGY_{j,t}$	**0.032**	**0.301**	**0.033**	**0.293**
$TELECOMM_{j,t}$	**0.025**	**0.391**	**0.025**	**0.381**
$CONSSTAP_{j,t}$	**-0.030**	**0.306**	**-0.030**	**0.311**
$UTILITIES_{j,t}$	**-0.017**	**0.549**	**-0.018**	**0.542**
F statistic (p-value)	**3.546**	**0.000**	**3.233**	**0.000**
Adjusted R^2	**0.039**		**0.038**	
Maximum VIF (variable)	**3.427 (*%INDPAC*)**		**3.450 (*%INDPAC*)**	

Where:

$DA_{j,t}$ = discretionary component of accruals for firm *j* in year *t;* $AUDSPEC_{j,t}$= audit firm industry specialist indicator calculated from auditor's industry market share for firm *j* in year *t;* $DA_{j,t} * AUDSPEC_{j,t}$ = interacting variable of discretionary component of accruals and audit firm industry specialist indicator; $LNassets_{j,t}$ =natural logarithm of total assets of firm *j* in year *t;* $ROA_{j,t}$ = return on assets of firm *j* in year *t;* $LEVERAGE_{j,t}$ = ratio of long term debt and total assets of firm *j* in year *t;* $\%INDPAC_{j,t}$ =ratio of independent directors on the audit committee of firm *j* in year *t;* $\%INDPBOD_{j,t}$ =ratio of independent directors on the board of directors of firm *j* in year *t;* $MEETAC_{j,t}$ =number of meetings the audit committee of firm *j* had in year *t;* $MEETBOD_{j,t}$ =number of meetings the board of directors of firm *j* had in year *t;* $BIG4_{j,t}$= audit firm with brand name reputation employed by client firm *j* in year *t*; $MATERIALS_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the materials industry in year *t* and 0 if otherwise; $CONSDISC_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer discretionary industry in year *t* and 0 if otherwise; $HEALTHCARE_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the healthcare industry in year *t* and 0 if otherwise; $INDUSTRIALS_{,t}$ = a dummy variable given the value of 1 if the firm *j* is in the industrials industry in year *t* and 0 if otherwise; $INFOTECH_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the information technology industry in year *t* and 0 if otherwise; $ENERGY_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the energy industry in year *t* and 0 if otherwise; $TELECOMM_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the telecommunications industry in year *t* and 0 if otherwise; $CONSSTAP_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer staples industry in year *t* and 0 if otherwise; $UTILITIES_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the utilities industry in year *t* and 0 if otherwise

For purposes of brevity, the three *YEAR* indicator variables were not included within the table.

5.3.1 Percentage of Independent Directors on Audit Committee

Table 5 illustrates the results of additional regression analysis based on rerunning the main resultswhen the sample is partitioned by the percentage of independent directors on client firm's audit committee. The regression results in Table 5 Column 6 (that is, audit committees with more than fifty percent of the directors are independent) provide mixed support for the main results of this paper. While the independent variable, $AUDSPEC_{j,t}$ and interacting variable, $DA_{j,t}$ * $AUDSPEC_{j,t}$ remain statistically insignificant, it suggests that the coefficient of independent variable, $DA_{j,t}$ is negative but statistically insignificant. Moreover, industry variable, $INFOTECH_{j,t}$ remain statistically significant in this model.Nevertheless, the regression results in Table 5 Columns 4,5 and 8,9 (that is, audit committees with fifty percent or less directors who are considered independent) support the main results of this paper. Specifically, the results from Table 5 Columns 4,5 and 8,9 suggest that the coefficient on $DA_{j,t}$ (the independent variable) is negative and statistically significant (p-value=0.022 and 0.031 respectively). More importantly, Table 5 Column 9 reports a negative and statistically significant coefficient on the interacting variable, $DA_{j,t}$ * $AUDSPEC_{j,t}$ after partitioning the sample by the percentage of independent directors on the audit committee (p-value=0.003). Results indicate that firms with audit committees with 50 percent or less independent directorshave lower market returns when engaging in earnings management. A likely interpretation of this result is that, directors on audit committees with insufficient independent directors, recognising the limitation relating to their independence, seek to enhance the audit committee's credibility and effectiveness by employing an industry specialist auditor. Results provide evidencepartially accepting the second hypothesis, that is,$H_2$of this paper.Audit firm industry specialisation may, in fact, play a moderating role on the relationship between earnings management and the firm's market returns for firms with audit committees having less than 50% independent directors.

Table 5. Regression Results for Market Returns – Partitioning by Independent Directors on the Audit Committee

	AC with > 50% independent directors *without* $AUDSPEC_{j,t}$ (n=681)		AC with ≤ 50% independent directors *without* $AUDSPEC_{j,t}$ (n=519)		AC with > 50% independent directors *with* $AUDSPEC_{j,t}$ (n=681)		AC with ≤ 50% independent directors *with* $AUDSPEC_{j,t}$ (n=519)	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Constant	-0.664	0.323	0.009	0.991	-0.146	0.829	-0.858	0.281
Independent Variables								
$DA_{j,t}$	-0.047	0.221	-0.102	0.022	-0.045	0.256	-0.096	0.031
$AUDSPEC_{j,t}$	-	-	-	-	0.006	0.897	0.033	0.595
$DA_{j,t}$*$AUDSPEC_{j,t}$	-	-	-	-	-0.009	0.823	-0.144	0.003
Control Variables – *Firm Size Variable*								
$LNassets_{j,t}$	-0.022	0.703	0.019	0.716	-0.023	0.696	0.021	0.676
Control Variables – *Firm Risk Variables*								
$ROA_{j,t}$	0.024	0.571	0.030	0.502	0.024	0.571	0.028	0.518
$LEVERAGE_{j,t}$	-0.008	0.854	-0.027	0.547	-0.007	0.867	-0.029	0.514
Control Variables – *Corporate Governance Variables*								
$\%INDPAC_{j,t}$	0.023	0.573	-0.021	0.780	0.024	0.571	-0.037	0.625
$\%INDPBOD_{j,t}$	0.068	0.095	0.012	0.870	0.068	0.095	0.030	0.689
$MEETAC_{j,t}$	0.015	0.755	0.010	0.843	0.015	0.764	0.007	0.884
$MEETBOD_{j,t}$	0.011	0.783	0.029	0.526	0.011	0.777	0.035	0.455
Control Variables – *Audit Quality Variable*								
$BIG4_{j,t}$	-0.055	0.225	0.002	0.967	-0.058	0.268	0.020	0.736
Control Variables – *Industry Variables*								
$MATERIALS_{j,t}$	0.027	0.513	0.043	0.394	0.036	0.536	0.064	0.173
$CONSDISC_{j,t}$	0.015	0.731	-0.029	0.520	0.016	0.720	-0.023	0.620
$HEALTHCARE_{j,t}$	0.014	0.744	0.108	0.017	0.012	0.771	0.118	0.009
$INDUSTRIALS_{j,t}$	-0.020	0.648	-0.065	0.177	-0.020	0.649	-0.062	0.207
$INFOTECH_{j,t}$	0.116	0.005	0.003	0.953	0.116	0.005	0.012	0.802
$ENERGY_{j,t}$	0.018	0.662	0.050	0.286	0.018	0.671	0.046	0.321
$TELECOMM_{j,t}$	0.009	0.808	0.031	0.485	0.010	0.804	0.033	0.453
$CONSSTAP_{j,t}$	-0.026	0.511	-0.041	0.349	-0.027	0.505	-0.063	0.161
$UTILITIES_{j,t}$	-0.001	0.977	-0.036	0.410	-0.001	0.981	-0.037	0.393

F statistic (p-value)	1.906	0.011	2.432	0.001	1.722	0.024	2.665	0.000
Adjusted R^2	0.025		0.050		0.022		0.063	

Where:

$DA_{j,t}$ = discretionary component of accruals for firm *j* in year *t*; $AUDSPEC_{j,t}$= audit firm industry specialist indicator calculated from auditor's industry market share for firm *j* in year *t*; $DA_{j,t} * AUDSPEC_{j,t}$ = interacting variable of discretionary component of accruals and audit firm industry specialist indicator; $LNassets_{j,t}$ =natural logarithm of total assets of firm *j* in year *t*; $ROA_{j,t}$ = return on assets of firm *j* in year *t*; $LEVERAGE_{j,t}$ = ratio of long term debt and total assets of firm *j* in year *t*; $\%INDPAC_{j,t}$ =ratio of independent directors on the audit committee of firm *j* in year *t*; $\%INDPBOD_{j,t}$ =ratio of independent directors on the board of directors of firm *j* in year *t*; $MEETAC_{j,t}$ =number of meetings the audit committee of firm *j* had in year *t*; $MEETBOD_{j,t}$ =number of meetings the board of directors of firm *j* had in year *t*; $BIG4_{j,t}$= audit firm with brand name reputation employed by client firm *j* in year *t*; $MATERIALS_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the materials industry in year *t* and 0 if otherwise; $CONSDISC_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer discretionary industry in year *t* and 0 if otherwise; $HEALTHCARE_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the healthcare industry in year *t* and 0 if otherwise; $INDUSTRIALS_{,t}$ = a dummy variable given the value of 1 if the firm *j* is in the industrials industry in year *t* and 0 if otherwise; $INFOTECH_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the information technology industry in year *t* and 0 if otherwise; $ENERGY_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the energy industry in year *t* and 0 if otherwise; $TELECOMM_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the telecommunications industry in year *t* and 0 if otherwise; $CONSSTAP_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the consumer staples industry in year *t* and 0 if otherwise; $UTILITIES_{j,t}$ = a dummy variable given the value of 1 if the firm *j* is in the utilities industry in year *t* and 0 if otherwise

For purposes of brevity, the three *YEAR* indicator variables were not included within the table.

Based on main results, empirical analysis indicates that earnings management (proxied by discretionary accruals) did have a negative effect on the capital market pricing of firm returns. The additional robustness and sensitivity tests also provided similar support. Therefore, H_1 is accepted based on the main findings and additional testing.It was postulated in H_2 that pricing of market returns of firms is higher for firms employing an industry specialist audit firm in spite of reported discretionary accruals, compared to firms not employing an industry specialist audit firm. Specifically, empirical results indicate the lack of a statistically significant association when using the pooled sample. Hence, H_2 is rejected.However, sensitivity results indicate that, firms with audit committees with less than 50% independent directors, having appointed industry specialist auditors, suffer a lower drop in market returns. Results therefore, provide limited evidence for partially accepting H_2. Audit firm industry specialisation does, in fact, play a moderating role on the relationship between earnings management and the firm's market returns for firms with audit committees consisting of less than 50 percent independent directors.

6.0 Conclusions

This paper explored the relationship between the capital market pricing of firms and earnings management (proxied by discretionary accruals) during a three-year pooled time frame. In addition, the moderating role of industry specialist audit firms wasanalysed based on the preceding relationship between earnings management and market returns to determine if there is any evidence of stakeholders placing higher value on firm stocks in such instances.Results from this paper suggested that a firm's capital market returns is significantly affected by with the existence of earnings management (proxied by discretionary accruals). This provides support for the enhanced regulatory obligations resulted from CLERP 9 and other government actions (for instance, introducing new guidelines and principles in directing better quality corporate disclosures under the *ASX* Listing Rules)undertaken after the global financial crisis.

Additional tests suggest an insignificant moderating role played by industry specialist audit firms on the relationship between market returns and earnings management. A major consequence resulting from this finding is for regulators attempting to improve audit quality to strengthen other key firm-level corporate governance mechanisms such as the ratio of independent directors on firm committees. By putting the consequences from this paper into perspective, there may be a greater likelihood of increased audit quality by external auditors given regulations of a firm audit committee's structure, composition and authority levels. As the sensitivity results yielded a significant result in employing industry specialist audit firms (on the relationship between earnings management and market returns) when there was less than 50 percent of independent directors on the firm's audit committee, this paper provides a deeper understanding and more well-rounded contribution to the impact of industry specialist audit firms on investors' decisions.

While this paper has a number of strengths, it is not without limitations. First, sample firms and data utilised in this paper are only from public listed companies. Another limitation of this paper arise from the proxy used to measure earnings management in this paper (namely, the discretionary component of accruals) may not adequately capture the underlying construct because earnings management is a multi-dimensional construct (Dechow, Sloan, and Sweeney 1995; Jones 1991). Future research maystart by addressing the limitations identified above. Moreover, future research should consider other audit quality proxies (for example, audit opinion and workload compression) and non-audit quality measures (for example, regulatory environment and reputational capital) to assess the validity of findings from this

paper and any resulting impact on with capital market pricing of firms. Other proxies for earnings management can be examined (for example, total accruals). To assess the external validity of the findings from this paper, future research can be undertaken outside Australia particularly in the developing countries where capital markets and economies are in formative stages.

References

1. Abarbanell, J., and R. Lehavy. 1999. Can Stock Recommendations Predict Earnings Management and Analysts' Earnings Forecast Errors? In *Working paper*. University of North Carolina.
2. Abbott, L. J., and S. Parker. 2000. Auditor Selection and Audit Committee Characteristics. *Auditing: A Journal of Practice & Theory* 19 (2): 47-66.
3. AICPA. 1998. CPA Vision Project Identifies Top Five Issues for Profession. *The CPA Letter* 78 (3): 1-2.
4. Ashbaugh-Skaife, H., D. W. Collins, and R. LaFond. 2006. The Effects of Corporate Governance on Firm's Credit Ratings. *Journal of Accounting and Economics* 42 (1-2): 203-243.
5. ASX Corporate Governance Council. 2003. *Principles of Good Corporate Governance and Best Practice Recommendations*. Sydney, Australia: ASX Corporate Governance Council.
6. Ball, R., and P. Brown. 1968. An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research* 6 (2): 159-177.
7. Balsam, S., J. Krishnan, and J. G. S. Yang. 2003. Auditor Industry Specialization and the Earnings Response Coefficient. *Auditing: A Journal of Practice & Theory* 22 (2): 71-97.
8. Balvers, R. J., B. McDonald, and R. E. Miller. 1988. Underpricing of New Issues and the Choice of Auditor as a Signal of Investment Banker Reputation. *The Accounting Review* 63 (4): 605-622.
9. Bartov, E., F. A. Gul, and J. S. L. Tsui. 2000. Discretionary Accruals Models and Audit Qualifications. *Journal of Accounting and Economics* 30 (3): 421-452.
10. Beasley, M. S., and K. R. Petroni. 2001. Independence and Auditor Selection. *Journal of Accountancy* 192 (1): 86.
11. Beaver, W. 1968. The Information Content of Annual Earnings Annoucements. *Journal of Accounting Research* 6 (Supplement): 67-92.
12. Beaver, W., R. Lambert, and D. Morse. 1980. The Information Content of Security Prices. *Journal of Accounting and Economics* 2 (1): 3-28.
13. Becker, C. L., M. L. Defond, J. Jiambalvo, and K. R. Subramanyam. 1998. The Effect of Audit Quality on Earnings Management. *Contemporary Accounting Research* 15 (1): 1-24.
14. Bedard, J., S. Biggs., F. Stanley, and D. M. Frederick. 1991. The Effect of Domain-Specific Experience on Evaluation of Management Representation in Analytical Procedures. *Auditing: A Journal of Practice & Theory* 10 (1): 77-95.
15. Bell, T., F. Marrs, I. Solomon, and H. Thomas. 1997. *Auditing Organizations through a Strategic-Systems Lens: The KPMG Peat Marwick Business Measurement Process*. Montvale, NJ: KPMG Peat Marwick.
16. Beneish, M. D. 1997. Detecting GAAP violation: Implications for assessing earnings management among firms with extreme financial performance. *Journal of Accounting and Public Policy* 16 (3): 271-309.
17. Bernard, V. L., and D. J. Skinner. 1996. What Motivates Managers' Choice of Discretionary Accruals? *Journal of Accounting and Economics* 22 (1-3): 313-325.
18. Bowen, R. M., D. Burghstahler, and L. A. Daley. 1987. The Incremental Information Content of Accrual versus Cash Flows. *The Accounting Review* 62 (4): 723-747.
19. Bruns, W. J., Jr., and K. A. Merchant. 1990. The Dangerous Morality of Managing Earnings. *Management Accounting* 72 (2): 22-25.
20. Carcello, J. V., R. H. Hermanson, and N. T. McGrath. 1992. Audit Quality Attributes: The Perceptions of Audit Partners, Preparers, and Financial Statement Users. *Auditing: A Journal of Practice & Theory* 11 (1): 1-15.
21. Carcello, J. V., and A. L. Nagy. 2004. Client Size, Auditor Specialization and Fraudulent Financial Reporting. *Managerial Auditing Journal* 19 (5): 651-668.
22. Certified Public Accountants. 1998. Chairman Levitt Attacks Earnings Management. *The CPA Journal*, 8.
23. Choi, J., J. Kim, and Y. Zang. 2010. Do Abnormally High Audit Fees Impair Audit Quality? *Auditing: A Journal of Practice & Theory* 29 (2): 115-141.
24. Clifford, P., and R. Evans. 1997. Non-Executive Directors: A Question of Independence. *Corporate Governance: An Independent Review* 5 (4): 224-231.
25. Collins, D., S. Kothari, J. Shanken, and R. Sloan. 1994. Lack of Timeliness versus Noise as Explanations for Low Contemporaneous Return-earnings Association. *Journal of Accounting and Economics* 18 (3): 289-324.
26. Coulton, J., S. Taylor, and S. Taylor. 2005. Is 'Benchmark Beating' by Australian Firms Evidence of Earnings Management? *Accounting and Finance* 45 (3): 553-576.
27. DeAngelo, L. E. 1981. Auditor Size and Audit Quality. *Journal of Accounting and Economics* 3 (3): 183-199.
28. DeAngelo, L. E. 1988. Managerial competition, information costs, and corporate governance: The use of accounting performance measures in proxy contests. *Journal of Accounting and Economics* 10 (1): 3-36.
29. Dechow, P. 1994. Accounting Earnings and Cash Flows as Measures of Firm Performance: The Role of Accounting Accruals. *Journal of Accounting and Economics* 17 (1): 3-42.
30. Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting Earnings Management. *The Accounting Review* 70 (2): 193-225.
31. DeFond, M. L., and J. Jiambalvo. 1991. Incidence and Circumstances of Accounting Errors. *The Accounting Review* 66 (3): 643-655.
32. Dunn, K. A., and B. W. Mayhew. 2004. Audit Firm Industry Specialization and Client Disclosure Quality. *Review of Accounting Studies* 9 (1): 35-58.
33. Dye, R. A. 1988. Earnings Management in an Overlapping Generations Model. *Journal of Accounting Research* 26 (2): 195-235.

34. Easton, P. D., and M. E. Zmijewski. 1989. Cross-sectional Variation in the Stock Market Response to Accounting Earnings Announcements. *Journal of Accounting and Economics* 11 (2-3): 117-141.
35. Emerson, J. 1993. KPMG Peat Marwick: Setting the New Practice Framework Standard. *Professional Services Review* 1: 1-4.
36. Feltham, G. A., J. S. Hughes, and D. A. Simunic. 1991. Empirical Assessment of the Impact of Auditor Quality on the Valuation of New Issues. *Journal of Accounting and Economics* 14 (4): 375-399.
37. Francis, J. R., E. L. Maydew, and H. C. Sparks. 1999. The Role of Big 6 Auditors in the Credible Reporting of Accruals. *Auditing: A Journal of Practice & Theory* 18 (2): 17-34.
38. Frankel, R., and C. M. C. Lee. 1998. Accounting Valuation, Market Expectation, and Cross-sectional Stock Returns. *Journal of Accounting and Economics* 25 (3): 283-319.
39. Gewald, H., and T. Gellrich. 2007. The Impact of Perceived Risk on the Capital Market's Reaction on Outsourcing Announcements. *Information Technology and Management* 8 (4): 279-297.
40. Gramling, A. A., and D. N. Stone. 2001. Audit Firm Industry Expertise: A Review and Synthesis of the Archival Literature. *Journal of Accounting Literature* 20 (1): 1-29.
41. Guidry, F., A. J. Leone, and S. Rock. 1999. Earnings-based Bonus Plans and Earnings Management by Business-unit Managers. *Journal of Accounting and Economics* 26 (1-3): 113-142.
42. Gul, F. A., and G. V. Krishnan. 2002. Has Audit Quality Declined? Evidence from Pricing of Discretionary Accruals. In *Working paper*. City University of Hong Kong.
43. Gul, F. A., S. G. Lynn, and J. S. L. Tsui. 2002. Audit Quality, Management ownership, and the Informativeness of Accounting Earnings. *Journal of Accounting, Auditing & Finance* 17 (1): 25-49.
44. Hair, J. F., R. E. Anderson, R. L. Tatham, and W. C. Black. 1995. *Multivariate Data Analysis*. 4th ed. Englewood Cliffs, NJ, USA: Prentice Hall.
45. Hair, J. F., W. C. Black, B. J. Babin, R. E. Anderson, and R. L. Tatham. 2006. *Multivariate Data Analysis*. 6th ed. Upper Saddle River, NJ, USA: Pearson Prentice Hall.
46. Healy, P. M., and K. G. Palepu. 1993. The Effect of Firms' Financial Disclosure Strategies on Stock Prices. *Accounting Horizons* 7 (1): 1-11.
47. Healy, P. M., and K. G. Palepu. 1995. The Challenges of Investor Communication: The Case of CUC International Inc. *Journal of Financial Economics* 38 (2): 111-140.
48. Healy, P. M., and K. G. Palepu. 2001. Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature. *Journal of Accounting and Economics* 31 (1-3): 405-440.
49. Healy, P. M., and J. M. Wahlen. 1999. A Review of the Earnings Management Literature and its Implications for Standard Settings. *Accounting Horizons* 13 (4): 365-383.
50. Hogan, C. E., and D. C. Jeter. 1999. Industry Specialization by Auditors. *Auditing: A Journal of Practice & Theory* 18 (1): 1-17.
51. Holthausen, R. W. 1990. Accounting Method Choice: Opportunistic Behaviour, Efficient Contracting andIinformation Perspectives. *Journal of Accounting and Economics* 12 (1-3): 207-218.
52. Huang, H. W., L. L. Liu, K. Raghunandan, and D. V. Rama. 2007. Auditor Industry Specialization, Client Bargaining Power, and Audit Fees: Further Evidence. *Auditing: A Journal of Practice & Theory* 26 (1): 147-158.
53. Johnson, P., K. Jamal, and R. Berryman. 1991. Effects of Framing on Auditor Decisions. Organization Behaviour and Human Decision Processes. *50* 1 (75-105).
54. Jones, J. 1991. Earnings Management during Import Relief Investigations. *Journal of Accounting Research* 29 (2): 193-228.
55. Kanagaretnam, K., C. Lim, and G. Lobo. 2010. Auditor Reputation and Earnings Management: International Evidence from the Banking Industry. *Journal of Banking & Finance* 34 (10): 2318-2327.
56. Kang, S.-H., and K. Sivaramakrishnan. 1995. Issues in Testing Earnings Management and an Instrumental Variable Approach. *Journal of Accounting Research* 33 (2): 353-368.
57. Kim, J., R. Chung, and M. Firth. 2003. Auditor Conservatism, Asymmetric Monitoring, and Earnings Management. *Contemporary Accounting Research* 20 (2): 323-360.
58. Klein, A. 2002. Audit Committee, Board of Directors Characterisitcs, and Earnings Management. *Journal of Accounting and Economics* 33 (3): 375-400.
59. Knechel, W. R., V. Naiker, and G. Pacheco. 2007. Does Audit Industry Specialization Matter? Evidence from Market Reaction to Auditor Switches. *Auditing: A Journal of Practice & Theory* 26 (1): 19-45.
60. Krishnan, G. V. 2003a. Audit Quality and the Pricing of Discretionary Accruals. *Auditing: A Journal of Practice & Theory* 22 (1): 109-126.
61. Krishnan, G. V. 2003b. Does Big 6 Auditor Industry Expertise Constrain Earnings Management? *Accounting Horizons* 17 (Supplement): 1-16.
62. Krishnan, G. V. 2005. The Association Between Big 6 Auditor Industry Expertise and the Asymmetric Timeliness of Earnings. *Journal of Accounting, Auditing & Finance* 20 (3): 209-228.
63. Kwon, S. 1996. The Impact of Competition within the Client's Industry on the Auditor Selection Decision. *Auditing: A Journal of Practice & Theory* 15 (1): 53-69.
64. Levitt, A. 1998. The Numbers Game. In *Speech delivered at the NYU Centre for Law and Business*. New York, NY.
65. Lim, C., and H. Tan. 2008. Non-audit Service Fees and Audit Quality: The Impact of Auditor Specialization. *Journal of Accounting Research* 46 (1): 199-246.
66. Lin, J. W., and M. I. Hwang. 2010. Audit Quality, Corporate Governance, and Earnings Management: A Meta-Analysis. *International Journal of Auditing* 14 (1): 57-77.
67. Mascarenhas, D., S. F. Cahan, and V. Naiker. 2010. The Effect of Audit Specialists on the Informativeness of Discretionary Accruals. *Journal of Accounting, Auditing and Finance* 25 (1): 53-84.
68. Neyman, J., and E. L. Scott. 1960. Correction for Bias Introduced by a Transformation of Variables. *The Annals of Mathematical Statistics* 31 (3): 643-655.
69. Nussbaum, B. 2002. Can You Trust Anybody Anymore: The Scope of the Enron Debacle

Undermines the Credibility of Modern Business Culture. Let's Get Back to Basics. *Business Week*, January 28, 30-32.
70. O'Keefe, T., R. King, and K. Gaver. 1994. Audit Fees, Industry Specialization, and Compliance with GAAS Reporting Standards. *Auditing: A Journal of Practice & Theory* 13 (2): 41-55.
71. Richardson, S., A. Tuna, and M. Wu. 2003. Predicting Earnings Management: The Case of Earnings Restatements. In *Working paper*. University of Pennsylvania.
72. Romanus, R. N., J. J. Maher, and D. M. Fleming. 2008. Auditor Industry Specialization, Auditor Changes, and Accounting Restatements. *Accounting Horizons* 22 (4): 389-413.
73. Schipper, K. 1989. Earnings Management. *Accounting Horizons* 3 (4): 91-103.
74. Sharma, V., D. Sharma, and U. Ananthanarayanan. 2011. Client Importance and Earnings Management: The Moderating Role of Audit Committees. *Auditing: A Journal of Practice & Theory* 30 (3): 125-156.
75. Shockley, R. A., and R. N. Holt. 1983. A Behavioural Investigation of Supplier Differentiation in the Market for Audit Services. *Journal of Accounting Research* 21 (2): 545-564.
76. Simunic, D., and M. Stein. 1987. *Product Differentiation in Auditing: Auditor Choice in the Market for Unseasoned New issues*. Vancouver, Canada: The Canadian Certified General Accountants' Research Foundation.
77. Simunic, D. A. 1980. The Pricing of Audit Services: Theory and Evidence. *Journal of Accounting Research* 18 (1): 161-190.
78. Singh, H., and R. Newby. 2010. Internal Audit and Audit Fees: Further Evidence. *Managerial Auditing Journal* 25 (4): 309 - 327.
79. Subramanyam, K. R. 1996. The Pricing of Discretionary Accruals. *Journal of Accounting and Economics* 22 (1-3): 250-281.
80. Tabachnick, B. G., and L. S. Fidell. 2001. *Using Multivariate Statistics*. 4th ed. New York, USA: Allyn and Bason.
81. Teoh, S. H., and T. J. Wong. 1993. Perceived Auditor Quality and the Earnings Response Coefficient. *The Accounting Review* 68 (2): 346-366.
82. Tonkin, T. 2007. Proportionate Liability: A Chance to Add Value to the Audit Function? In *Readings in Auditing*, ed. R. JohnsonBrisbane: John Wiley & Sons.
83. Warfield, T., J. J. Wild, and K. J. Wild. 1995. Managerial Ownership, Accounting Choices, and the Informativeness of Earnings. *Journal of Accounting and Economics* 20 (1): 61-92.
84. Watts, R., and J. Zimmerman. 1986. *Positive Accounting Theory*. Englewood Cliffs, NJ: Prentice-Hall.
85. Yardley, J. A., N. L. Kauffman, T. D. Cairney, and W. D. Albrecht. 1992. Supplier Behavior in the U.S. Audit Market. *Journal of Accounting Literature* 11: 151.