School of Accounting, Economics and Finance

The Impact of the Recent Increase in Non-Audit Services on Audit Quality: Evidence from Australia

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Declaration

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

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

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Abstract

Over the past 5 years, the provision of non-audit services (NAS) has increased substantially in contrast with a small growth in audit fees, and concerns about audit quality have been raised due to the potential threat to audit independence created by NAS. Therefore, this study seeks to investigate the association between the recent increase in NAS and audit quality. Although NAS could impair audit independence due to conflicts of interest, it could also contribute to enhancing the auditors' knowledge spillover. This study provides a comprehensive analysis to investigate the impact of this increase in NAS on audit quality by using three proxies of audit quality: the absolute value of discretionary accruals, the issuance of going-concern opinions, and audit fees. The hypotheses are developed within an agency theory framework and tested using Australian data. The sample for this study is 7,779 firm-year observations for the earnings management and audit fee models, while the opinion models include only distressed firms, with a sample of 5,476 firm-year observations. This study contributes to the existing literature by providing new and important empirical insight into the current provision of NAS and the current level of regulations in regard controlling the increase in NAS. The study results from cross-sectional multivariate analyses indicate that the provision of NAS impacts audit quality negatively. The results of robustness and sensitivity tests also largely support the significant relationship between NAS and audit quality. Findings from this study have important implications for regulators, investors, scholars, corporate management, and auditors.

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List of Abbreviations

AASB	Australian Accounting Standards Board
AICPA	American Institute of Certified Public Accountants
APES	Accounting Professional and Ethical Standards
APESB	Accounting Professional and Ethical Standards Board
ASA	Australian Auditing Standards
ASR	Accounting Series Release
ASX	Australian Securities Exchange
CEO	chief executive officer
CFO	chief financial officer
CGAA	Coordinating Group on Auditing and Accounting Issues
CLERP	Corporate Law Economic Reform Program
EC	European Commission
EU	European Union
GCO	going-concern opinion
H1, H2, H3	hypothesis 1, hypothesis 2, hypothesis 3
IAASB	International Auditing and Assurance Standards Board
ICAEW	Institute of Chartered Accountants in England and Wales
IFIAR	International Forum of Independent Audit Regulators
IPO	initial public offering
IT	information technology
NAS	non-audit services
OLS	ordinary least squares
PCAOB	Public Company Accounting Oversight Board
SAS	Statement on Auditing Standards
SEC	Securities and Exchange Commission
SIRCA	Securities Industry Research Centre of Asia-Pacific
SOX	Sarbanes–Oxley Act
UK	United Kingdom
US	United States
ZFC	Zmijewski's financial condition

Chapter 1: Introduction

1.1 Background and Motivation

The demand for purchasing non-audit services (NAS) could be justified by industry knowledge or auditors' independence so that firms with poor performance may be improved by the knowledge offered by NAS providers or appear more objective as a result of the involvement of independent auditors (Schneider, Church, & Ely, 2006). The concern regarding the provision of NAS is that it could impair audit independence because of the economic bond between the auditor and client (Firth, 1997). Auditors with high levels of independence are more likely to have better audit quality since they are less likely to report in favour of a client's reporting choice (Blay, 2005). However, auditors may produce poor audit quality when the provision of NAS threatens their independence and increases the economic bond between them and their clients. In fact, the provision of NAS could lead to different types of independence threats: (a) self-interest threat created by the financial interests of the auditor, (b) self-review threat created when auditors review their work, (c) advocacy threat created when auditors support a position or opinion that compromises objectivity, (d) familiarity threat created by the bond between auditor and client, and (e) intimidation threat created when an auditor is prevented from acting objectively due to client pressure (Hayes, 2002). In many cases, the impairment of the auditor's independence may lead to audit failure (Blacconiere & DeFond, 1997). Prior literature commonly concludes that NAS compromises auditors' independence due to conflicts of interest, since NAS may strengthen the economic bond between the auditors and their clients.[1]Consistent with the tenets of agency theory, the provision of NAS could impact auditors' independence due to the development of a strong relationship between the incumbent auditor and management (Hylton, 1964; Schulte, 1965). Therefore, audit quality could be impacted by the provision of NAS due to the lack of independence. The absence of an independent auditor imposes agency costs on the client (Parkash & Venable, 1993). For example, Arnold and De Lange (2004) investigated Enron's

[1] Chapter 3, Section 3.3, identifies the prior studies that support the economic bond argument.

collapse and concluded that Arthur Andersen failed to minimise agency costs due to the conflict of interest caused by the provision of NAS.

Regulators have concerns about the independence of auditors, and they have issued many rules to improve audit independence. An audit adds value to financial reporting quality by providing credibility and reliability (Tritschler, 2013). However, when auditors impair their independence, the audit may lose its value (DeFond & Zhang, 2014). Therefore, auditor independence is a crucial factor of audit quality (Tepalagul & Lin, 2014). Regulators around the world have continually considered the provision of NAS as a potential threat to auditor independence. For instance, in the United States (US), Accounting Series Release (ASR) No. 250 was issued by the Securities and Exchange Commission (SEC) in 1978 (USSEC, 1978a). ASR No. 250 required auditors to disclose the percentage of NAS in total audit fees, the nature of NAS, and the breakdown of each NAS in excess of three percent of audit fees (Glezen & Millar, 1985). In 2000, the SEC released new restrictions regarding NAS, and it prohibited audit firms from combining certain NAS and audit services (Schneider, 2006). Such an increase in NAS could lead to conflicts of interest and impair the independence of auditors (Moore et al., 2006). In 2003, the SEC required audit firms to disclose fees related to audit services, audit-related services, tax services, and all other NAS (Schneider et al., 2006). In addition, in 2004, the Australian Government enacted legislation requiring audit committee approval to provide NAS through the adoption of the *Corporate Law Economic Reform Program (Audit Reform & Corporate Disclosure) Act 2004* (CLERP 9; Australian Government, 2004). Moreover, in 2006, the Accounting Professional and Ethical Standards Board (APESB) in Australia issued APES 110 Code, Section 290, to improve audit independence by prohibiting auditors from providing services that are related to management responsibilities for audit clients (APESB, 2018).

The motivation for this study arose from the past consequences of the provision of NAS on audit quality. During the early years of 2000, a number of high-profile accounting scandals emerged worldwide (e.g., Enron and WorldCom in the US, Parmalat in Europe, and HIH Insurance in Australia). In particular, prior to the major accounting scandals in the US, the market had observed significant growth in NAS. By 1999, NAS had increased to become 70% of profits for larger audit firms (Moore et al., 2006). In 2001 and 2002, while the US market was observing a substantial demand for

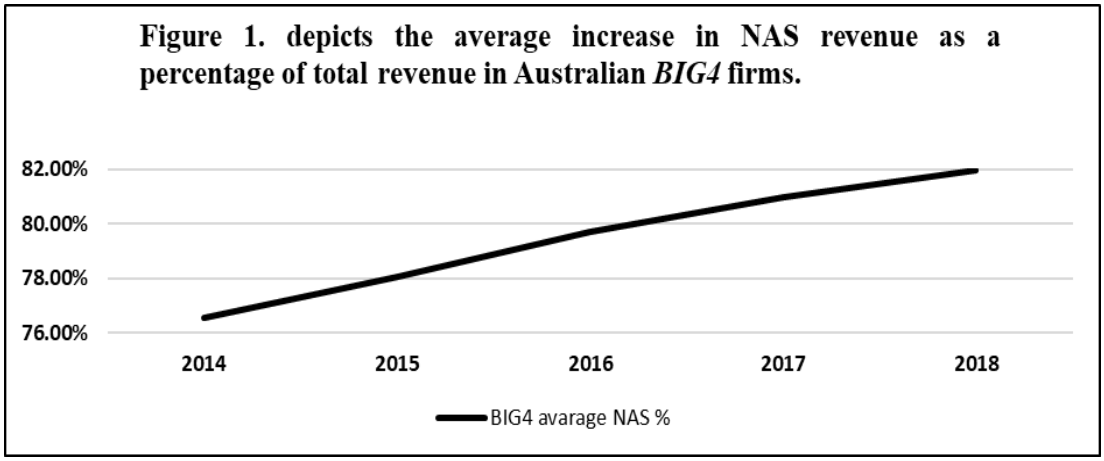
NAS, the market experienced many accounting scandals like Enron and WorldCom (I. Zhang, 2007). In July 2002, the US Congress passed the Sarbanes–Oxley Act of 2002 (SOX, 2002) to improve the independence of auditors in response to these scandals (Knechel & Sharma, 2012). SOX (2002) has enacted many rules to improve the audit profession and has imposed restrictions on the provision of NAS. Auditors were limited in providing NAS by SOX to lower the conflicts of interest (R. Ball, 2009). In addition to SOX in the US, CLERP 9 (Australian Government, 2004) was introduced in Australia in response to the collapse of the HIH Corporation. Although CLERP 9 does not ban the provision of NAS, it does require comprehensive disclosures from both the auditor and the audit committee about the nature of NAS and whether the provision of such services might compromise the independence of the external auditor.

Recently, the Australian market observed significant growth in NAS. According to the Transparency Report issued by the four largest Australian audit firms (Big4),[2] revenues obtained from the provision of NAS have increased since 2014, and it was about 82% of the profit for Big4 audit firms in 2018 (Carson, 2019; Deutsch, Imbesi, & Gatt, 2018; Dongen, 2015; Graham, 2016; Graham, 2018; Hook & Deutsch; Jones, 2015; McLennan, 2015; McLennan, 2016; Yates, 2017; Yates, 2018). Importantly, this significant growth in NAS is combined with a notable decrease in the proportion of audit fees to total fees in the Australian Big4. For example, Deloitte in Australia declared that 80% of its total revenue was derived from NAS in 2014, and this percentage of NAS increased to a record 86.3% in 2018 (Jones, 2015, p. 7; Deutsch et al., 2018, p. 29). Moreover, this study is concerned about the increased amount of NAS provided by the Big4 because they audited more than 90% of the Australian companies' market capitalisation in 2018. Figure **1.1** and Figure **1.2**[3] show the increase in NAS as well as the decrease in proportion of audit revenue to total revenue in the Big4, which illustrates how they have become more consultative.

[2] The Big4 audit firms are PricewaterhouseCoopers, KPMG, Deloitte & Touche, and Ernst & Young.
[3] The information in these figures is public and can be found in the Transparency Report issued by the Big4.

Figure 1.1

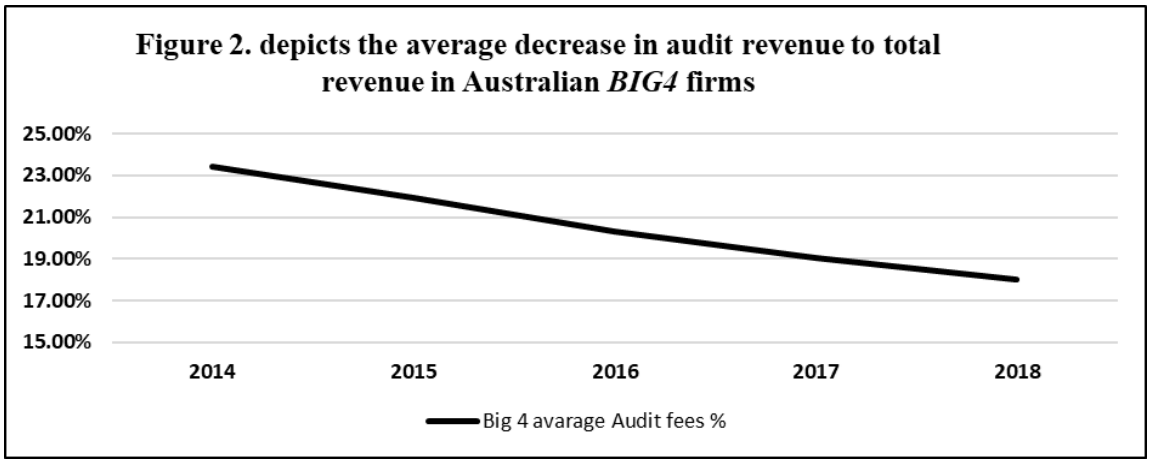
Average Increase in NAS Revenue as a Percentage of Total Revenue in Australian Big4 Firms



Note. NAS = non-audit services. Data obtained from [Carson, 2019; Deutsch, Imbesi, & Gatt, 2018; Dongen, 2015; Graham, 2016; Graham, 2018; Hook & Deutsch, 2017; Jones, 2015; McLennan, 2015; McLennan, 2016; Yates, 2017; Yates, 2018].

Figure 1.2

Average Decrease in Audit Revenue to Total Revenue in Australian Big4 Firms



Note. Data obtained from [Carson, 2019; Deutsch, Imbesi, & Gatt, 2018; Dongen, 2015; Graham, 2016; Graham, 2018; Hook & Deutsch, 2017; Jones, 2015; McLennan, 2015; McLennan, 2016; Yates, 2017; Yates, 2018].

Importantly, when the provision of NAS was in high demand before the accounting scandals (Moore et al., 2006), several studies conclude that the provision of NAS by the incumbent auditor is associated with poor audit quality due to the economic bond (Ashbaugh et al., 2003; Causholli et al., 2014; Dee et al., 2002; Frankel et al., 2002; Firth, 2002; Wines, 1994; Ye et al., 2006). In response to the accounting scandals, governmental acts like SOX (2002) in the US and CLERP 9 (Australian

Government, 2004) in Australia were enacted to improve auditors' independence. Several studies have concluded that the implementation of these Acts have contributed to an improvement in auditor independence (H. W. Huang et al., 2009; J. Krishnan et al., 2011; Knechel & Sharma, 2012; S. Hossain, 2013). However, the high percentages of NAS declined significantly after the major accounting scandals (Whalen et al., 2015). Therefore, this study's main concern is that the enhancement of auditor independence reported in prior studies is no longer valid due to the recent increase in NAS. Although the high values of NAS were a major aspect that compromised auditor independence during the accounting scandals that occurred in the early years of the new millennium, the audit profession was governed back then by self-regulation.[4] Therefore, the impacts of the recent increase in the provision of NAS could be different as the audit profession is now governed by direct-regulation. In particular, the enhancement of auditor independence by a major set of reforms like SOX (2002) and CLERP 9 (Australian Government, 2004) could contribute to denying the growth of NAS to compromise auditor independence. If auditor independence is not compromised, the knowledge obtained from the provision of NAS could possibly benefit audit engagements and hence improve audit quality. Therefore, a different conclusion about the impact of the provision of NAS could be expected.

However, in a recent US study, it was documented that auditors departed from focusing on audit engagements due to the significance of NAS revenue (Beardsley et al., 2021). The findings of Beardsley et al. (2021) imply that there is a lack of the current regulations in regard to the provision of NAS and auditor independence. However, since CLERP 9 has different disclosure requirements than SOX (2002), the impact of these Australian regulations on the increase in NAS in relation to audit quality could be different. Thus, an investigation of the impact of this increase in NAS on audit quality is vital.

1.2 Objectives, Aims and Research Questions

The impact of the provision of NAS on auditor independence merits further investigation since this issue has been exposed to a huge debate in the audit quality literature. The uncertain findings relating to the impact of NAS on auditor

[4] Chapter 2, Section 2.2.4, discusses the transition from self-regulation to direct-regulation.

independence has led to notable differences among regulations around the world. As indicated in Section 1.1, some regulations, like those in the US and the European Union (EU), impose tight restrictions on the provision of some types of NAS, while others, like those in Australia, impose extensive disclosure requirements. Indeed, the impact of the recent growth of NAS on audit quality could vary based on the adopted regulations. For example, the restrictions on the provision of NAS in the US caused by the implementation of SOX (2002) prevent the growth of NAS from impairing auditor independence, although this growth could impact the audit engagement profitability, which in turn may impact the audit quality.[5]

Importantly, the Australian CLERP 9 regulations (Australian Government, 2004) allow auditors to provide any type of NAS for their clients. However, CLERP 9 requires an entity's audit committee, or board in its absence, and the auditor of the entity to declare that the provision of NAS has not compromised auditor independence. Recently, regulators in Australia expressed concerns about the growth of NAS caused by expansions in the business environment, as this growth could impact auditor independence (Parliamentary Joint Committee on Corporations and Financial Services, 2020).

The audit failure issue has been closely linked to audit independence (Blacconiere & DeFond, 1997). Since the improvement of audit independence is crucial to making the market stable and to avoiding audit failure, the main focus of this study is to investigate the relationship between the increase in NAS and audit quality. This study seeks to discover whether the current regulations effectively control current auditor behaviour related to the provision of NAS. Therefore, this study provides a comprehensive analysis of the association between NAS and audit quality. This comprehensive analysis includes three proxies of audit quality: earnings management, auditor opinion, and audit fees.[6]

Despite the high volume of academic research relating to the impact of NAS on auditor independence, only a few studies have investigated the impact of the recent increase in provision of NAS on audit quality. For example, Beardsley et al. (2021), who use US data, examine the impact of the recent increase in provision of NAS on

[5] Even if NAS are provided by non-incumbent auditors, this could lead to poor audit quality due to the departure from focusing on audit engagements (Beardsley et al., 2021).
[6] Chapter 4, Section 4.3, provides an explanation for the selection of these proxies.

audit quality by investigating the focus on the provision of NAS over audit engagement profitability. However, their findings might not be applicable to the Australian market due to the difference in adopted rules.

The impact of the provision of NAS on audit quality could be either positive or negative.[7] Specifically, NAS could lead to a significant threat to audit independence where a client could put an auditor under pressure not to report a breach (DeAngelo, 1981a). Thus, NAS could be an indication of poor audit quality. Conversely, NAS could help to improve knowledge spillover for auditors, allowing auditors to increase audit efficiency (Simunic, 1984). This study will examine how audit quality in Australia could be affected by the recent increase in NAS during the 5-year period from 2014 to 2018.[8] Therefore, this study's main research question is identified as follows:

> *Is there an association between nonaudit services and audit quality for Australian publicly listed firms?*

Along with addressing the primary research question of this study, a number of other key research objectives will also be investigated. Since the study uses three audit quality proxies, the findings can provide guidance to the Australian market on opportunistic earnings management, the objectivity of auditors' reporting, and the modelling of audit service prices. Also, this study's analysis includes additional tests that lead to several conclusions based on clients, auditors, and corporate governance characteristics, which can provide valuable academic research insights into perceptions of audit quality in Australia. In addition, this study's analysis seeks to investigate the impact of NAS based on its component categories, such as tax services, accounting services, and internal audit services, which can provide evidence about the distinct impacts of these services.

1.3 Significance of the Study

Findings from this study will contribute to the audit quality literature and will be of relevance to a number of key stakeholders, including regulators, investors, client firms, and corporate management, who are concerned about the provision of NAS.

[7] The conclusions drawn from these arguments are discussed in Chapter 3, Section 3.3.
[8] This was selected to be the sample period of this study because the increase in NAS was notable during this time.

First, this study will contribute to audit-quality literature since it offers new and important empirical insights to the existing literature on restricted NAS. Specifically, this study will provide empirical evidence about suggestions of the current auditors' behaviour who provide NAS. To the best of my knowledge, no Australian study to date has examined the impacts of the recent increase in NAS after the implementation of CLERP 9.[9] Therefore, the resulting empirical evidence has important implications for audit researchers.

Second, this study will demonstrate whether the growth in provision of NAS is regulated efficiently by providing a comprehensive analysis of the impact of NAS on auditor independence. According to Knechel (2016), the continuous enhancement of auditor independence depends heavily on how new standards and regulations interact with auditing as a professional service. Thus, the findings of this study will evaluate the degree to which the CLERP 9 regulations (Australian Government, 2004) are effective in accomplishing their purpose of improving auditor independence. As a consequence, the findings of this study will contribute to the current literature on the success (or failure) of the interaction between the provision of NAS and current laws such as SOX (2002) in the US and CLERP 9 in Australia.

Third, despite wide-ranging research on NAS (e.g., Arrunada, 1999; Beattie & Fearnley, 2002; Beck et al., 1988b; Castillo-Merino et al., 2020; Eilifsen & Knivsflå, 2016; Kowaleski et al., 2018; Meuwissen & Quick, 2019; Sharma & Sidhu, 2001; Simunic, 1984; Wines, 1994), there is still little evidence concerning which type of NAS most influences audit quality. Prior studies largely provides evidence for the impacts of tax services (e.g., De Simone et al., 2015; Gleason & Mills, 2011; Paterson & Valencia, 2011; Robinson, 2008) but rarely for other types of services (H. Huang et al., 2007). According to Burnett et al. (2018), the officially disclosed disaggregating fees are very limited, which leads to a lack of empirical evidence regarding the disaggregating of NAS. Therefore, the regression tests (reported in Section 6.2.4) provide results and implications relating to each type of NAS (namely, tax services, accounting services, consulting and advisory services, information technology [IT] services, due diligence services, internal audit services, legal services, and NAS that

[9] As indicated in Section 1.2, only a few studies around the world have examined the substantial increase in provision of NAS (e.g., Beardsley et al., 2021), and the percentages of NAS declined from 2003 to 2009 after the major changes in the regulatory frameworks of auditing (Whalen et al., 2015).

are not separately disclosed) that contribute to a deeper understanding of the impacts of NAS on audit quality.

Fourth, this study will also offer new and important empirical insight into the existing literature on the extent of earnings management practices in Australian publicly listed firms. The results of this study will provide (in addition to NAS) other important attributes linked to aggressive earnings management. For instance, the regression tests (reported in Section 6.2.1) document that earnings management practices are positively correlated with Big4 firms and audit tenure. These findings could potentially benefit audit researchers and regulators who are concerned about earnings management practices.

Overall, this study will assist a variety of critical stakeholders. For instance, policymakers and regulators will be able to assess the effectiveness of the current Australian regulations in relation to enhancing audit quality. This will benefit capital market participants by limiting the manipulation of financial statements and, therefore, future firm collapses. Additionally, auditors will be able to evaluate ideal behaviour and to identify potential risks when they provide NAS. For instance, auditors will understand which audit engagements could be impacted most by NAS.[10] Finally, firms will benefit from understanding the consequences involved in purchasing NAS.

1.4 Limitations of the Study

While this study has a number of strengths, it is not without limitations. First, the study only looks at three specific audit quality proxies, and though the proxies selected are the most commonly used and referred to in the prior empirical literature (DeFond & Zhang, 2014), this is acknowledged as a limitation given that other proxies could provide better measures of audit quality. DeFond and Zhang (2014) demonstrate that each proxy for audit quality can suffer from measurement errors. Therefore, the proxies in this study were selected based on the data available and frequently used in earlier literature.[11]

[10] Chapter 7 identifies several factors that influence audit quality when NAS are provided, like auditor tenure and the absence of an effective audit committee.
[11] Chapter Four, section 4.3, provides an explanation for the selection of audit quality proxies in this study.

Second, this study focuses mainly on the impact of the provision of NAS on audit quality, while prior studies indicates that the provision of NAS also has an impact on financial reporting quality. For instance, Habib (2012) provides a meta-analysis of the literature and concludes that the provision of NAS has a negative impact on financial reporting quality. Potentially, NAS may compromise auditor independence, which in turn compromises the integrity of the financial statements; on the other hand, NAS could shorten the audit report lag due to knowledge spillover (Knechel et al., 2012), which enhances the timeliness of the financial statements (Herath & Albarqi, 2017). However, the implications of audit quality research can be used for financial reporting quality research since both aim to determine the higher quality of reporting (Gaynor et al., 2016). Specifically, audit independence is considered a critical factor in financial reporting and audit quality. Therefore, this study's implications regarding auditor independence could be beneficial for financial reporting researchers.

Third, while a variety of control variables are identified for incorporation in the regression tests to correspond to potential additional influences on audit quality (in addition to the provision of NAS), it is possible that other factors not controlled for in these tests will affect the audit quality. However, since the purpose of this research is not to establish a framework for determining audit quality but rather to examine the relationship between NAS and audit quality, the influence of these variables on this study's conclusions may be regarded as insignificant.

Finally, the data for this study are gathered from Australia. As a consequence, the study's findings may not be generalisable across countries with varying institutional structures. While the limitations are recognised, the study's quality and potential significance are not decreased. In fact, Australia has a powerful and mature capital market, with greater involvement by regulators, investors, and auditing firms, and is also a global leader in audit quality research (e.g., Craswell & Taylor, 1991; Francis, 1984; Francis & Stokes, 1986).

1.5 Thesis Outline

The remaining chapters in this thesis are organised as follows. Chapter 2 provides an in-depth literature review on audit quality. This chapter also provides a comprehensive background on the importance of auditor independence and the Australian regulatory environment with a focus on regulations relating to the provision

of NAS. The chapter further provides a comprehensive background on earnings management, the issuance of going-concern opinions, and audit fees.

Chapter 3 discusses the theoretical underpinnings of this study by detailing agency theory tenets as well as the hypotheses development. The chapter begins by discussing the agency theory and the selection theory of this study. Then, the chapter discusses the empirical literature relating to this study's dependent variables in the context of NAS and develops the hypotheses. A conceptual schema is provided to illustrate the key relationships examined in the study.

Chapter 4 outlines the sample collection and selection process, justifies the selection of the time period, and details the primary research methodology used, namely multiple regression. In particular, measures of audit quality (dependent variables), NAS (independent variables), and the use of control variables (all supported by prior empirical literature) are detailed, and related statistical tests and regression models are specified.

Chapter 5 reports on the descriptive statistics and univariate results. Initially, steps taken to ensure the normality of data collected and the validity of assumptions for the subsequent multiple regressions are outlined, including basic sample descriptive statistics (such as mean, median, standard deviation, 25th percentile, and 75th percentile). Chapter 5 also reports and discusses results from the Pearson's correlation analyses.

Chapter 6 presents the study results of the pooled ordinary least squares regressions examining the relationship between the provision of NAS and audit quality. Chapter 7 details the robustness and sensitivity tests. The selection of alternative measures/proxies for both dependent variables and independent variables is discussed. A number of partitioning tests are also undertaken based on client characteristics (such as size and growth), auditor characteristics (such as Big4 and auditor tenure), audit committee characteristics (such as audit committee expertise and diligence), and firm industry. Moreover, tests were conducted to examine the endogeneity issue and the impact of self-selection bias.

Chapter 8 summarises the key findings, implications, contributions, and limitations of this study. Finally, the entire study and major findings are reviewed, concluding with suggestions for future research directions.

Chapter 2: Literature Review

2.1 Chapter Overview

Chapter 2 discusses the empirical literature surrounding NAS and audit quality. The chapter begins with an identification of the theoretical underpinnings of an audit and the role of the auditor in the capital market. The regulatory environment in the context of NAS is then reviewed. The chapter further provides a comprehensive review of the relevant literature for this study's dependent variables, including definitions, concepts, and prior findings. Finally, a summary of Chapter 2 is provided.

2.2 Audit Quality

Auditing is a critical component of capital markets, and high audit quality has received considerable attention in the context of several high-profile accounting scandals. Due to the separation of company ownership by shareholders from company control by managers (agents), Berle and Means (1932) expressed concerns regarding agency costs and information asymmetry issues. Since then, other researchers have expressed similar concerns and underscored the importance of the audit function as a critical monitoring instrument for ensuring stronger alignment of interests between managers and shareholders (Jensen & Meckling, 1976; Watts, 1977; Watts & Zimmerman, 1980). Audit quality can be influenced by several factors, including a firm's culture, professional scepticism, consultation, the auditor's knowledge of the business, expertise used in audits, the successful monitoring and reviewing of audits, and the firm's audit quality accountability system (Australian Securities & Investment Commission, 2017).

2.2.1 Concept and Definition

DeAngelo (1981b) defines audit quality as "the market-assessed joint probability that a given auditor will both discover a breach in a client's accounting system, and report the breach" (p.186). From this definition, it is observable that the expertise and the objectivity of auditors are essential to target the desired audit quality. Auditors

need the expertise (knowledge and competence) to discover the breach and the objectivity (independence) to report it (Knechel, 2016).

Over the past two decades, audit quality has been defined, whether by authorities or academic researchers, in many different ways. Some definitions focus on the responsibilities of the auditor or audit work, while others concentrate on error deduction and identifying poor audit quality (Knechel et al., 2013). For instance, DeFond and Zhang (2014) define higher audit quality as "greater assurance that the financial statements faithfully reflect the firm's underlying economics, conditioned on its financial reporting system and innate characteristics" (p. 276). The International Auditing and Assurance Standards Board (IAASB) states that audit quality "encompasses a number of key elements that create an environment which maximises the likelihood that quality audits are performed on a consistent basis" (IAASB, 2014, p. 4). Five elements are identified in the IAASB framework: inputs, processes, outputs, key interactions with the financial reporting supply chain, and contextual factors (IAASB, 2014).

DeAngelo (1981b) and Palmrose (1988) assert that an audit is not directly observable by an external financial statement user, and it is therefore of dubious quality. In fact, the amount and range of the audit procedures used are the main determinants of audit quality (Simunic, 1980). Because of the difficulties in observing the audit procedures in audit working papers, it is crucial to alter these audit procedures with proxies to measure audit quality (Dechow et al., 2010). These proxies are discussed in detail in Section 2.2.3.

2.2.2 The Importance of Audit Quality

After many high-profile accounting scandals, auditing has become an increasingly important aspect of capital markets. As a result, the quality of audits is receiving a significant amount of consideration.

The audit function essentially provides users with an independent assurance of the accuracy and fairness of the financial information provided by management of the firm (Becker et al., 1998; Collier & Gregory, 1996; Simunic, 1980). Specifically, the audit function is based on agency theory in which the principals hire others as agents to provide a service on their behalf. As a result, the formation of a principal–agent relationship occurs (Jensen & Meckling, 1976). Similarly, in the case of corporations,

the owners or shareholders (principals) designate directors and managers (agents) to manage and conduct the operations of the corporation in the owners' best interests. It is expected of the firm's management to carry out their stewardship responsibilities and run the firm in the best interests of the principals. However, because of the information asymmetry that exists between principals and agents, as well as the fact that each party has different interests (such as cash rewards and employment prospects), agents may pursue self-interested objectives at the expense of the firm and the proprietors (Colbert & Jahera, 1988). Thus, the principals hire auditors to avoid potential conflicts, align the goals of agents with their own interests, and alleviate any misgivings about the veracity of information supplied by agents.

Consequently, the need for high-quality auditors is essential since auditors formally express an opinion and conduct an independent examination of the financial statements reported by management (Collier & Gregory, 1999). In fact, higher audit quality is more likely to offer better monitoring capabilities (Dunn et al., 1999; Frid & Schiff, 1981; Klock, 1994; A. Watkins et al., 2004). The literature on audit quality indicates that high-quality auditors are more likely to assess audit risks, detect errors and mistakes, strengthen earnings quality, and essentially make the financial statements credible (Balsam et al., 2003; Basioudis, 2007; Beatty, 1989; Becker et al., 1998; Caramanis & Lennox, 2008; Francis et al., 1999; Jensen, 1986; Krishnan, 2003; Watkins et al., 2004). Moreover, prior studies provide evidence that higher audit quality is more likely to prevent managerial opportunistic behaviour (Francis et al., 1999; Habib, 2012; Hamilton et al., 2005; Sun & Liu, 2013). Also, high audit quality is associated with high quality of disclosures (Chu et al., 2013; Copley 1991; Dao et al., 2019; Dunn & Mayhew, 2004; Lee et al., 2003). Furthermore, prior studies indicate that poor audit quality is associated with financial fraud (Carcello & Nagy, 2004; Etemadi & Abdoli, 2018; Farber, 2005; Lennox & Pittman, 2010). Finally, high audit quality is associated with high quality of financial reporting since audit quality is a component of financial reporting quality (Gaynor et al., 2016). Specifically, the credibility of financial reporting increases when audit quality is high, and this strength of credibility is achieved by greater assurance that the financial statements reflect the firm's underlying economics (DeFond & Zhang, 2014).

2.2.3 Determinants of Audit Quality

Because the level of assurance provided by auditors is unobservable, it is difficult to assess the overall quality of an audit (Balsam et al., 2003). The extant literature provides several measurement methods to determine audit quality, such as auditor specialisation (Balsam et al., 2003; Cahan et al., 2008), auditor brand name (Behn et al., 2008; Palmrose, 1988), auditor independence (Antle, 1984; Craswell, 1999), auditor tenure (Geiger & Raghunandan, 2002; Ghosh & Moon, 2005), auditor gender (Gold et al., 2015), audit hours (Caramanis & Lennox, 2008; Deis & Giroux, 1996), audit fees (Simon & Francis, 1988), auditor size (G. Colbert & Murray, 1998), auditor opinion (Carey & Simnett, 2006; Feldmann & Read, 2010), auditor workload compression (J. Chen et al., 2020; López & Peters, 2011), and audit report lag (Bamber et al., 1993; Knechel & Payne, 2001). One technique to determine audit quality is to look at the outputs of the audit process, such as auditors' opinions or the quality of financial reporting. Another technique is to look at the inputs of the audit process, such as audit fees and audit firm size (Knechel et al., 2013). While each technique of determining audit quality has unique strengths and weaknesses, Rajgopal et al. (2021) argue that the explanatory power of audit quality proxies is impacted by the environmental aspects of the research and the specific audit deficiencies that are anticipated to be significant in the researched context. These proxies are discussed in the following subsections.

2.2.3.1 Output-Based Audit Quality Proxies

The output-based proxies can be described as unobservable outputs of the audit process that can evaluate the level of audit quality. To elucidate, the main objective of an independent auditor is to obtain reasonable assurance that the audited financial statements are free from material misstatement and to express an opinion on whether the financial statements are prepared in accordance with an applicable financial reporting framework (Tritschler, 2013). An audit must be conducted in such a way that a reasonable assurance is achieved, and the misstatements are detected by an independent auditor. Therefore, the literature has extensively used output-based audit quality measures since a feature of these measures is that they are bound by the firm's financial reporting system and innate features (DeFond & Zhang, 2014).

The common output-based proxies of audit quality used in the literature are proxies related to material misstatements, including restatements and Accounting and Auditing Enforcement Releases (Archambeault et al., 2008; Chin & Chi, 2009; Kinney et al., 2004); proxies related to auditor communications, including going-concern or modified/qualified opinions (Callaghan et al., 2009; Craswell, 1999; DeFond et al., 2002; Geiger & Rama, 2003; Sharma & Sidhu, 2001); proxies related to financial reporting quality characteristics, including discretionary accruals, performance-adjusted discretionary accruals, meet/beat forecast, and small earnings increase (Ashbaugh et al., 2003; Frankel et al., 2002; H. Huang et al., 2007; Knechel & Sharma, 2012; Srinidhi & Gul, 2007); and proxies related to investors' perceptions, such as earnings response coefficients, the stock market reaction to audit-related events, and the cost of capital (Francis & Ke, 2006; Griffin & Lont, 2010; Mansi et al., 2004; Menon & Williams, 2010; Pittman & Fortin, 2004; Teoh & Wong, 1993). Because they directly represent the output of the audit process, output-based measures are regarded as excellent proxies for audit quality. However, Dichev et al. (2013) indicate that the major challenge with output-based proxies is the problem of separating the quality of the audit from the quality of financial reporting.

2.2.3.2 Input-Based Audit Quality Proxies

The input-based proxies can be described as observable inputs of the audit process that can evaluate the level of audit quality. Specifically, an input-based proxy refers to a particular characteristic related to an auditor or fees paid to an auditor. The common input-based proxies of audit quality used in the literature are proxies related to auditor-specific characteristics, including auditor size and industry specialisation (Balsam et al., 2003; C. J. Chen et al., 2007; Dunn & Mayhew, 2004; Francis et al., 1999; Francis & Yu, 2009; G. Krishnan, 2003; Mayhew & Wilkins, 2003) and proxies related to auditor–client contracting features, such as audit fees (Bell et al., 2001; Cho et al., 2017; L. Davis & Ricchiute, 1993; Eshleman & Guo, 2014; Hoopes et al., 2018; Kwon & Yi, 2018; Ratzinger-Sakel, 2013). Although input-based measures observe the audit process directly, they become inefficient proxies in some cases where the inputs could not directly translate into outputs (DeFond & Zhang, 2014).

2.2.4 The Regulation of the Auditing Profession

The framework for determining regulations was established by Baggott (1989), who determined the regulations as the degree of formality, the legal status, and the degree of outsiders' engagement. The criteria that are based on these considerations are classified into three categories: informal self-regulation, formal self-regulation, and direct regulations. Informal self-regulation refers to rules established by institutions whose activities are in the public interest, whereas formal self-regulation refers to rules established by public entities (Baggott, 1989). Thus, informal and formal self-regulations consist of regulations with statutory powers conducted by professional institutions. Direct regulations refer to rules established by independent regulatory agencies, supported by the government. Self-regulation can succeed if there is proper enforcement of the standards, and this enforcement can be achieved by professional discipline or by using the backing of the legal system (Baggott, 1989; Bartle & Vass, 2005). In other words, professional bodies that self-regulate must be in a dominant position in order to impose penalties on members (Whittington, 1993). However, when a member of one professional body joins another body, such powers become substantially worthless due to conflicts of interest. In order to effectively enforce standards in the event of extreme situations, the use of direct regulation seems to be important.

Most of the auditing profession is governed by self-regulation, with auditing standards being established by professional institutions such as the Auditing Standards Board in the US and the IAASB internationally. These institutions are indeed more or less self-regulatory, which implies that the auditing profession has had a significant effect on the standards issued by these institutions (Knechel, 2016). However, following the scandals of Enron and WorldCom in 2002, the auditing profession has become primarily direct-regulated through audit standards issued by independent government bodies. For example, the US enacted SOX (2002), which formed the Public Company Accounting Oversight Board (PCAOB) to set regulations and standards for the auditing profession, and the professional body became no longer in authority over its own operations in the US. In the Australian context, following the HIH Insurance audit disaster in 2001, Australia enacted similar revisions to auditing legislation with CLERP 9 in 2004 (Australian Government, 2004). Similar legal requirements have been adopted by 54 jurisdictions, which has motivated the

establishment of the International Forum of Independent Audit Regulators (IFIAR) to facilitate audit regulation on a worldwide level (IFIAR, 2020).

2.2.4.1 The Importance of Auditor Independence

Many cases of audit failures in previous accounting scandals are linked to or at least have raised questions about the auditors' independence, and these cases have led to fatal losses in the marketplace (Cullinan, 2004; Madrick, 2003). For instance, the lack of independence of accounting firm Arthur Andersen relating to the collapse of Enron caused huge losses to Enron's employees, the auditing profession, regulators, and numerous stakeholders (Coffee, 2004; Fearnley & Beattie, 2004; Madrick, 2003; Moriceau, 2005; Sridharan et al., 2002; Vinten, 2002; S. Watkins 2003). The American Institute of Certified Public Accountants (AICPA, 1952) stated that the entire goal of auditing is to provide justifiable credibility to financial statements. Mautz and Sharaf (1961) asserted that the professional independence of auditors is one of the principal postulates of auditing because it grants the financial statements more credibility. Therefore, the credibility and usefulness of the audited financial statements are severely compromised if the users believe the auditors are not independent in their representation of audit opinion. Also, according to Johnstone, Sutton, and Warfield (2001), a lack of ability to depend on the audit opinion due to impaired independence implies a cost-of-capital premium for the information risk.

According to Magee and Tseng (1990), independence implies that the decisions of an auditor must reflect the auditor's belief in a reporting policy. The empirical literature consistently acknowledges auditor independence as a critical component of the audit function and classifies it as *independence in fact* and *independence in appearance* (DeAngelo, 1981b; Dopuch et al., 2003; Firth, 1997a, 1997b; Mautz & Sharaf, 1961; Previts & Merino, 1998; P. Zhang, 2003). Independence in fact refers to a state of mind that allows an auditor to provide an opinion without being influenced by factors that could impair professional judgement, allowing them to act with integrity, objectivity, and professional scepticism (Fearnley & Beattie, 2004), while independence in appearance seems to suggest that an auditor should avoid circumstances where a reasonable and informed third party would doubt the auditors' objectivity (Fearnley et al., 2005). According to Gramling et al. (2010), the independence rules aim to accomplish two public policy objectives: (a) minimising the

possibility of external factors (e.g., pressure to retain an audit client or provision of NAS) inappropriately influencing an auditor's judgement (namely, enhancing independence in fact), and (b) increasing investors' confidence in the quality of financial statements (namely, enhancing independence in appearance). There are several regulatory frameworks used in different jurisdiction/ countries that introduce the distinction between independence in fact (also called *independence of mind*) and independence in appearance. These distinctions are shown in Table 2.1.

Table 2.1

Definitions of Audit Independence from Regulatory Frameworks

Regulatory framework	Independence of mind	Independence in appearance
Australia: *APES 110 Code of Ethics for Professional Accountants* (APESB, 2018)	The state of mind that permits the expression of a conclusion without being affected by influences that compromise professional judgement, thereby allowing an individual to act with integrity, and exercise objectivity and professional scepticism (APESB, 2018, Section 400.5(a), p. 109).	The avoidance of facts and circumstances that are so significant that a reasonable and informed third party would be likely to conclude that a Firm's, or an Audit Team member's, integrity, objectivity or professional scepticism had been compromised (APESB, 2018, Section 400.5(b), p. 109).
United States: *Final rule: Revision of the Commission's Auditor Independence Requirements* (USSEC, 2001)	Objectivity is a state of mind, and except in unusual circumstances, a state of mind is not subject to direct proof. Usually, it is demonstrated by reference to circumstantial evidence (USSEC, 2001, Part 210.2-01(b)).	… we [the Commission] will not recognize an accountant as independent with respect to an audit client if the accountant is not, or if a reasonable investor knowing all relevant facts and circumstances would conclude that the accountant is not, capable of exercising objective and impartial judgment on all issues encompassed within the accountant's engagement (USSEC, 2001, Part 210.2.01(b)).
United Kingdom: *ICAEW Code of Ethics* (ICAEW, 2020)	The state of mind that permits the expression of a conclusion without being affected by influences that compromise professional judgment, thereby allowing an individual to act with integrity, and exercise objectivity and professional scepticism (ICAEW, 2020, Section 120.12 A1 (a), p. 22).	The avoidance of facts and circumstances that are so significant that a reasonable and informed third party would be likely to conclude that a firm's or an audit or assurance team member's integrity, objectivity or professional scepticism has been compromised (ICAEW, 2020, Section 120.12 A1(b), p. 22).

Regulatory framework	Independence of mind	Independence in appearance
European Union: Commission Recommendation in the European Union (EC, 2002)	Objectivity (as a state of mind) cannot be subjected to external verification, and integrity cannot be verified in advance (1.2)	The avoidance of facts and circumstances which are so significant that a reasonable and informed third party would question the statutory auditor's ability to act objectively (AnnexA1).

Note. APESB = Accounting Professional & Ethical Standards Board; EC = European Commission; ICAEW = Institute of Chartered Accountants in England and Wales; USSEC = US Securities and Exchange Commission.

2.2.4.2 Threats to Auditors' Independence

Numerous stakeholders, including shareholders, investors, lenders, and employees, rely on audited financial statements, that should be truthful and without bias (Maury, 2000; Menon & Williams, 2010). Due to the intimate interaction between auditors and management, as well as auditors' desire to build a productive relationship with their clients, the concept of independence continues to be an elusive promise (Tepalagul & Lin, 2014). Even though regulations state that auditors must be objective and independent, auditors are allowed to have conflicts of interest, and this enables them to benefit from the business rather than shareholders or the public (Moore et al., 2006).

The origin of all conflicts is believed to be the fact that auditors are recruited and paid by the companies they audit (Kaplan, 2003). Auditors are allowed to provide other services for companies, such as taxation services, internal control services, and so on (Kershaw, 2006). Managers, by nature, have vested interests in financial accounts and aim to demonstrate their beneficial impact on the company as their salary is typically contingent on the company's performance, which could motivate them to manipulate the financial reporting. Because firms can select their auditors, the likelihood that they will select an auditor who will issue a favourable audit opinion is very high (Moore et al., 2006). Also, a client could be motivated to switch auditors if an unfavourable audit opinion is likely to be issued (Carson et al., 2013). It also works in the other direction; an auditor may be hesitant to issue a negative audit opinion because they know that doing so will result in the loss of the client (Levinthal & Fichman, 1988). Thus, the joint provision of audit and NAS to a client by an incumbent auditor could be perceived by stakeholders as an attempt to increase the auditor's self-interest and economic dependence, which motivates the auditor to act as an advocate of corporate

management (Beattie & Fearnley, 2002; Craswell 1999; Quick & Warming-Rasmussen, 2005). In fact, auditors were criticised for increased NAS after major accounting scandals. For instance, in the Enron and WorldCom cases, Arthur Andersen was accused of complicity due to the significant increases in NAS, including tax services (Cullinan, 2004; Robinson, 2008; Sadka, 2006). However, despite the conflicts of interest and lack of independence, some studies argue that the provision of NAS could result in improved auditor objectivity due to the knowledge acquired through the provision of NAS (Arrunada, 1999; Dopuch et al., 2003; Knechel et al., 2012; Simunic, 1984).

In addition, there are several factors other than the provision of NAS that pose a threat to auditor independence, such as auditor tenure, client importance, and client affiliation with audit firms (Bell et al., 2015; Blay & Geiger, 2013; J. Krishnan & Krishnan, 1996). Auditor independence can be adversely affected by auditor tenure since a longer auditor–client relationship could lead an auditor to have a stronger relationship with the client and become more likely to act in favour of management (Stanley & DeZoort, 2007). In support of this argument, several researchers suggest a mandatory rotation of the audit partner since they find that audit quality decreases as audit tenure becomes longer (Bamber & Iyer, 2007; Bell et al., 2015; Carey & Simnett, 2006; Deis & Giroux, 1992). However, other studies argue that longer audit tenure is less likely to pose a threat to auditor independence and more likely to improve auditors' specific knowledge of their clients' operations (Daugherty et al., 2012; Knechel & Vanstraelen, 2007; Read & Yezegel, 2016; Ruiz-Barbadillo, Go´mez-Aguilar, & Carrera, 2009). Furthermore, client importance could pose a threat to auditor independence since auditors may have a greater motivation to submit to pressure from larger clients, which could lead to compromising their independence (Blay & Geiger, 2013; J. Krishnan & Krishnan, 1996; Wright & Wright, 1997). Concerns about litigation and reputational harm, on the other hand, may help to mitigate this risk (Farmer et al., 1987). According to DeAngelo (1981a), regulatory agencies or investors may seek legal action against auditors who are unsuccessful in performing audits, resulting in a loss of auditor reputation and the potential loss of fees from other clients. Accordingly, audit firm independence should be perceived as an incentive for auditors to avoid high litigation risk and loss of reputation. There are several studies that support the argument of litigation and reputation loss (Craswell et

al., 2002; Garcia-Blandon et al., 2017; Hope & Langli, 2010). Finally, client affiliation with audit firms may threaten auditor independence because the auditor could consider the client as a potential employer, which strengthens the bond between management and auditors (Imhoff, 1978). This concept was also analysed by Lennox (2005), who focused on the situation where the corporation employs the officer's former employer as an auditor and found that auditors are more likely to issue clean audit opinions. Likewise, Ye et al. (2011) also conclude that auditors with alumni directors are less likely to issue going-concern opinions.

2.2.4.3 The Regulatory Environment for the Provision of NAS

The provisions of NAS by incumbent auditors are a contentious issue due to the potential threats to independence discussed in the previous section. Although the worldwide demand for purchasing NAS was very high prior to the accounting scandal in 2002, there was a lack of requirements for disclosing the amount and the types of NAS provided by the incumbent auditor (Ezzamel et al., 2002; Fearnley & Beattie, 2004). Regulatory bodies in various areas of the world have addressed this issue over an extended period of time, since the failure of numerous successful corporations has been partially attributed to the lack of audit independence. The accounting scandals created an incentive to recognise the importance of regulating the provision of NAS. As a result, a series of regulatory actions across the globe have been established to regulate the provision of NAS, such as SOX (2002) and CLERP 9 (Australian Government, 2004). Some evidence indicates an improvement in audit quality due to these new acts (DeFond & Lennox, 2011; Ettredge et al., 2011; S. Hossain, 2013; J. Krishnan et al., 2011).

In the US, SOX (2002) is recognised as the government's response to the accounting scandals in large corporations such as Enron and WorldCom, which had collapsed due to accounting and auditing irregularities. SOX has provided new or revised rules for professional bodies, management, and public accounting firms. The Act requires the SEC to issue particular rules in order to ensure enforcement of regulations. Because one of the key causes of audit failures was the joint provision of audit and NAS, SOX takes this issue seriously. The Act prohibits the provision of certain types of NAS and requires pre-approval from the audit committee for the provision of others. SOX also requires the audit committee to be directly accountable

for the compensation and the work of any registered public accounting firm employed by that corporation (SOX, 2002, Section 301).

In line with the US government's Act, several governments around the world have responded to the scandal cases by issuing a set of fundamental requirements relating to the provision of NAS. For example, in 2002, the European Commission (EC) published rules relating to audit independence (EC, 2002). The guidelines address potential problems emerging from the provision of NAS and agree to restrict the provision of certain types of NAS by the incumbent auditor. However, similar to SOX (2002), the EC requires extensive disclosures made by auditors and management for the provision of NAS. The EC also assures that auditors must not financially depend on clients, and it requires that the amount of NAS must not be an excessively large percentage of the audit firm's overall revenues in each year during a 5-year period (EC, 2002, paragraph 8). The EC guidelines (2002) prohibit the incumbent auditor from providing certain types of NAS, including accounting services and appraisal or valuation services, while other services could be subject to certain safeguards (excluding tax services, as the incumbent auditor is allowed to provide these without any restriction). Also, in the United Kingdom (UK), the Co-ordinating Group on Auditing and Accounting Issues (CGAAI) published a report in January 2003 relating to audit independence that includes recommendations and guidelines for the provision of NAS. The CGAAI (2003) report emphasises the need for more detailed and effective safeguards to control the provision of NAS. Similar to the EC guidelines (2002), the CGAAI (2003) report suggests some restrictions on the provision of NAS by the incumbent auditor, including the prohibition of internal audit services, accounting services, and appraisal or valuation services.

The Regulatory Environment for NAS in Australia

The Australian Government commissioned the Ramsay Report (2001), *Independence of Australian Company Auditors*, in response to the HIH Insurance corporate collapse, which mostly recognised critical issues related to auditor independence such as the provision of NAS and auditor financial and employment relationships. The Ramsay Report (2001) offered suggestions based on regulations set by the USSEC (2001), the International Federation of Accountants (2006), and the European Commission (2000). In response to the Ramsay Report, substantial changes

to auditor independence regulations were made through the adoption of the CLERP 9 Act in 2004 (Australian Government, 2004). Specifically, CLERP 9 requires auditors to formally declare their independence, imposes restrictions on employment affiliations, imposes restrictions on financial relationships between audit clients and auditors (and their families), requires disclosure of fees paid for the provision of NAS in the annual report, requires a statement that the audit committee is satisfied that NAS is compatible with auditor independence, requires the top 500 listed companies to have audit committees, requires audit partner rotation after 5 years, and requires auditor attendance and availability for questions during the Annual General Meeting when the auditor's report is being considered (Carey et al., 2014). Therefore, the principle-based approach to the joint provision of audit and NAS in Australia is impacted by the adoption of CLERP 9. Although CLERP 9 does not impose a legal prohibition on the provision of NAS, it requires the auditor and the audit committee to make extensive disclosures related to the nature of NAS provided. Auditors are required to disclose the amount and type of NAS according to Section 91.300 (11b) of the CLERP 9 Act (Australian Government, 2004), which is identified as follows:

- Details of the amounts paid or payable to the auditor for non-audit services provided, during the year, by the auditor (or by another person or firm on the auditor's behalf).
- A statement whether the directors are satisfied that the provision of non-audit services, during the year, by the auditor (or by another person or firm on the auditor's behalf) is compatible with the general standard of independence for auditors imposed by this Act.
- A statement of the directors' reasons for being satisfied that the provision of those non-audit services, during the year, by the auditor (or by another person or firm on the auditor's behalf) did not compromise the auditor independence requirements of this Act.

Moreover, according to Section 91.300 (11d, 11e) of the CLERP 9 Act (Australian Government, 2004), the audit committee, or directors if the corporation does not have an audit committee, must approve the disclosures made by auditors relating to NAS in accordance with Section 91.300 (11b). In addition, the Act requires certain disclosures related to the nature of NAS, yet it does not identify specific categories of NAS. Thus, the current Australian requirements related to the level of

disaggregation of NAS are considered to be low in comparison with other jurisdictions (Australian Accounting Standards Board [AASB], 2020).[12] CLERP 9 also imposes certain requirements to improve auditor independence by denying the incumbent auditors from exceeding specific hours for the provision of NAS. Auditors are required to test their independence and must prove that the NAS provider did not exceed the maximum hours. CLERP 9 Section 324CE Subsection 6 states that an NAS provider satisfies the maximum hours if:

- The number of hours for which the person provides services (other than services related to the conduct of an audit) to the audited body on behalf of the auditor during the period to which the audit relates does not exceed 10 hours; and
- The number of hours for which the person provides services (other than services related to the conduct of an audit) to the audited body on behalf of the auditor during the 12 months immediately before the beginning of the period to which the audit relates does not exceed 10 hours.

2.3 Earnings Management

Earnings management refers to a variety of accounting strategies that management professionals employ in order to meet a given earnings target (J. Krishnan et al., 2011). The continued use of ineffective earnings management has resulted in the bankruptcy of several firms, including Enron and WorldCom. In these scandals, auditor independence was compromised due to a failure to report aggressive earnings management practices.

2.3.1 Concept and Definition

Earnings management can be categorised into two perspectives: efficient contracting and opportunistic earnings management (Scott, 1997). Beneish (2001) states that the efficient contracting perspective refers to the practice where earnings management intends to convey investors' expectations about a firm's future cash flows, whereas the opportunistic perspective refers to the practice where managers

[12] The UK requires the highest level of disaggregation since the fees paid to auditors are classified into eight categories. Refer to AASB (2020) for the various requirements among jurisdictions in the level of NAS disaggregation.

manipulate earnings in order to defraud investors. Healy and Wahlen (1999, p. 6) define earnings management as "the practice of either misleading some stakeholders about the underlying economic performance of the company or influencing contractual outcomes that depend on reported accounting numbers". Another definition, provided by Fong (2006, p. 81), defines earnings management as "the manipulation of accounts and financial reports by a firm's management in order to present a view of the company which does not accurately reflect its financial position or performance". The fundamental aspect underlying these definitions is that managers manage earnings to increase their own benefits, regardless of the interests of contracting parties and stakeholders. Therefore, the auditors' independence and expertise play a significant role in minimising the level of opportunistic earnings management.

2.3.2 Incentive to Manage Earnings

Empirical literature suggests four incentives that drive earnings management practice: (a) meeting or beating benchmarks set, (b) engaging in contractual agreements, (c) capital market incentives, and (d) regulatory purposes.

Earnings management could be a strategy to meet market expectations and avoid negative market reactions to earnings surprises (Matsumoto, 2002). For instance, zero earnings and analyst forecasts are considered primary earnings targets for meeting or beating earnings benchmarks (Choi, Young, & Walker, 2006; Graham et al., 2005). Indeed, firms benefit from a market premium when they exceed earnings expectations (Barth et al., 1999; Lopez & Rees, 2002), while firms could face negative stock price responses due to failure to meet earnings benchmarks (DeFond & Park, 2001; Skinner & Sloan, 2002).[13] In addition, the most frequently used system for establishing remuneration is a target-based incentive plan, which motivates managers to meet or beat earnings benchmarks (Holland & Ramsay, 2003).[14] Rajgopal and Srinivasan (2012) demonstrate that chief executive officers (CEOs) and chief financial officers (CFOs) who narrowly underperform against the latest consensus analyst forecasts incur remuneration reductions.

[13] According to Skinner and Sloan (2002), although growth stocks are at least as likely to report either negative or positive earnings surprises, they display an asymmetrically strong negative price response to negative earnings surprises.

[14] Cheng and Warfield (2005) conclude that executives who earn a higher proportion of equity-based remuneration are more likely to meet or exceed quarterly earnings targets set by analysts.

Contractual agreements are another aspect of earnings management incentives. According to the extant literature, executive compensation contracts tend to have the potential to stimulate earnings management activities due to executives' concerns about keeping or increasing their earnings or equity-based compensation, such as bonus schemes and executive stock options (Bergstresser et al., 2009; Cheng et al., 2011; Gaver et al., 1995; Harakeh et al., 2019; Healy & Wahlen, 1999; Pourciau, 1993). Meek et al. (2007) report a positive association between CEO stock option remuneration and earnings management in firms where stock options account for a significant portion of CEO compensation. In addition, debt contracts could be a motivation for aggressive earnings management practices since numerous studies report an association between earnings management and debt covenant violations (DeAngelo et al., 1994; DeFond & Jiambalvo, 1994; Dyreng et al., 2020; Jha, 2013; Press & Weintrop, 1990; Smith, 1993). For instance, Ater and Hansen (2020) indicate that firms are more likely to engage in upwards earnings management prior to the issuance of new private debt, while firms are more likely to manage earnings downwards during the debt-covenant violation period (Jha, 2013).

Another aspect of earnings management incentives is capital market incentives, which include adopting management buyout plans, capital raising, and merger strategies to achieve earnings forecast and stabilize income. Prior studies indicate that the personal economic stake leads to a decline in earnings management in order to reduce pre-buyout accounting earnings and create a less favourable image of the business (Fischer & Louis, 2008; Mao & Renneboog, 2013; Perry & Williams, 1994). In addition, prior literature produces evidence of accruals management when corporations obtain capital using the initial public offering process, which impacts the equity market values and influence accounting decisions (Friedlan, 1994; Morsfield & Tan, 2006; Teoh, Welch, & Wong, 1998b). Mergers could also be an earnings management incentive, as corporations would falsify earnings to transfer as little shares as possible to fund the acquisition. Several empirical studies demonstrate that acquirers in stock-for-stock mergers control earnings before their anticipated acquisitions (Erickson & Wang, 1999; Gong, Louis, & Sun, 2008; Louis, 2004).

Empirical research consistently indicates that intense regulatory constraints regarding price controls encourage income-decreasing earnings management practices since regulatory costs could be reduced by appearing less lucrative (Cahan, 1992; Han

& Wang, 1998; J. Jones, 1991; Key, 1997; Lim & Matolcsy, 1999; Monem, 2003). For instance, Lim and Matolcsy (1999) report that Australian firms that are subject to enforced pricing controls on products engage in income-decreasing earnings management.

2.3.3 Determinants of Earnings Management

The literature identifies a variety of variables that affect earnings management (Sanchez-Ballesta & Garcia-Meca, 2007). These variables can be classified broadly into three categories: (a) firm-related factors, (b) corporate governance–related factors, and (c) regulator, legislator and key stakeholder factors.

2.3.3.1 Firm-Related Factors

The extant literature provides several firm-related factors to determine earnings management, such as firm size (Das et al., 1998; Jensen & Meckling, 1976; Simpson 2013), firm growth and investment (Skinner, 1993; Sun & Rath, 2009; Watts & Zimmerman, 1986), firm performance (Balsam et al., 1995; Dechow & Skinner, 2000; Degeorge et al., 1999; Kinney & McDaniel, 1989; Moreira & Pope, 2007; Petroni, 1992; Sun & Rath, 2009; White, 1970), firm debt (Dechow & Skinner, 2000; DeFond & Jiambalvo, 1994), firm capital intensity (Burgstahler & Dichev, 1997; Hermann & Inoue, 1996; Jalil & Rahman, 2010; Zhou & Elder, 2002), firm lagged total accruals (Coulton et al., 2007; Dechow, 1994; Dechow, Sloan, & Sweeney, 1995), and firm operating volatility (Dechow & Dichev, 2002; Gopalan & Jayaraman, 2012; Leuz et al., 2003).

In addition to firm-level factors, several studies report an association between industry sectors and the degree of earnings management (Datta et al., 2013; Hall & Stammerjohan, 1997; Han & Wang, 1998; McNichols & Wilson, 1988; Monem, 2003; Navissi, 1999; Robbins et al., 1993; Yang et al., 2009). For instance, Datta et al. (2013) report an association between competitive industries and the degree of earnings management, which suggests different industries have different risk characteristics.

2.3.3.2 Corporate Governance–Related Factors

The extant literature provides several corporate governance–related factors[15] to determine earnings management, such as characteristics of the board of directors[16] (Adut et al., 2011; Firth & Rui, 2002; L. Kao & Chen, 2004; Xie et al., 2003), engagement of Big4 auditors (Fan & Wong, 2005; Francis & Yu, 2009; Teoh & Wong, 1993), industry specialist auditor (Baatwah et al., 2021; Jaggi et al., 2012; G. Krishnan, 2003; Sun & Liu, 2013; Velury, 2003), audit committees (Baxter & Cotter, 2009; Dechow et al., 1996; Hutchinson et al., 2008; Vafeas, 2005), and CEO duality (Charitou et al., 2007; DeAngelo, 1988; Elliott & Shaw, 1988; Mather & Ramsay, 2006; Pourciau, 1993; Strong & Meyer, 1987; Vancil, 1987).

Although corporate governance–related factors have been extensively examined in earnings management studies, the findings are mixed. For instance, numerous studies report a negative association between board independence and earnings management (Jaggi et al., 2009; Mashayekhi & Bazaz, 2008; Rosenstein & Wyatt, 1990), while some studies report a positive association[17] (Beasley, 1996; Davidson et al., 2005; Klein, 2002). Another example, while numerous studies report no association between CEO duality and earnings management (Cannella & Lubatkin, 1993; Donaldson & Davis, 1991; Mallette & Fowler, 1992), Rechner and Dalton (1991) argue that CEO duality may reduce the independence of the board, which suggests poorer financial performance.

2.3.3.3 Regulator, Legislator and Key Stakeholder Factors

Regulatory and legislative forces play a significant role in controlling the management of opportunistic practices (Davidson et al., 2005; J. Krishnan et al., 2011). For instance, it is documented that the implementation of SOX (2002) in the US or CLERP 9 (Australian Government, 2004) in Australia contributed to a substantial decline in accrual-based earnings management practices (D. Cohen et al., 2008; S. Hossain, 2013; J. Krishnan et al., 2011; Martinov-Bennie et al., 2011).

[15] Sloan (2001, p. 336) defines corporate governance as "the mechanisms that have evolved to mitigate incentive problems created by the separation of management and financing of business entities".
[16] The characteristics of the board of directors include board independence, board size, board diligence, board competence, and board gender diversity.
[17] Independent directors hold only a small percentage of the company's shares or have no equity holdings, which implies they have less incentive to supervise management and safeguard shareholder interests (Conyon & Peck, 1998).

Numerous studies have examined the relationship between insider ownership and earnings management behaviour. Indeed, insider ownership could be a critical mechanism to monitor earnings management practices (Berle & Means, 1932; Jensen & Meckling, 1976). Although Potter (1992) and Claessens et al. (2002) argue that insider ownership has no active involvement in controlling the aggressive practices of earnings management, DeFond and Jiambalvo (1994), Dechow et al. (1996), and Warfield et al. (1995) report a negative association between insider ownership and earnings management.

2.4 Going-Concern Opinion

2.4.1 Concept and Definition

Carson et al. (2016, p.226) define "going concern opinion" as "an unqualified opinion with an emphasis of matter for reasons of going concern or a qualified opinion that includes going concern issues". According to auditing standards SAS No. 34 and SAS No. 59 (AICPA, 1981, 1988) in the US and ASA No. 570 (Auditing and Assurance Standards Board, 2015) in Australia, an independent auditor is required to make an adequate disclosure of uncertainty in the auditor's opinion when an entity's ability to continue operating is a concern.

The issuance of going-concern opinions (GCOs) continues to be one of the most difficult decisions for external auditors to make (Geiger et al., 2021). An auditor could be hesitant to issue a GCO due to the risk that it would act as a self-fulfilling prophecy and would decrease stockholder and creditor trust in the firm (Louwers, 1998; Venuti, 2004). Prior studies document a negative market reaction to GCOs (Carlson et al., 1998; Chow & Rice, 1982; Firth, 1978; Fleak & Wilson, 1994; F. Jones, 1996; Menon & Williams, 2010). Indeed, the issuance of GCOs is not generally preferred by firms' managers, stockholders, and creditors as this type of opinion includes a statement stating that the auditor has significant doubts about the firm's ability to continue in business through the following financial year, which leads to a substantial unfavourable response (Amin et al., 2014; Menon & Williams, 2010; L. Myers et al., 2018). Due to these negative responses, the issuance of GCOs could lead to accelerating financial distress, which could lead to a self-fulfilling prophecy. In addition, auditor switching is another challenge of issuing GCOs. Several studies

report a positive association between auditor switching and GCOs[18] (Carcello & Neal, 2003; Carey et al., 2008; H. Chung et al., 2019; J. Krishnan, 1994). The fear of losing substantial audit fees from clients due to auditor switching could impact auditor independence, which could lead auditors to report a clean opinion (Simon & Francis, 1988). Therefore, auditor switching as well as the negative market reaction, including the self-fulfilling prophecy,[19] could put pressure on auditors' judgement, which could compromise their independence.

However, the costs to the auditor related to litigation and reputation are significant when a client fails[20] without having previously received a GCO (Carcello & Palmrose, 1994; Kida, 1980; Lennox, 1999). Although professional standards do not require external auditors to estimate future events,[21] such as the client's future viability, auditors are responsible for providing adequate disclosures. Indeed, litigation and reputation costs could motivate auditors to provide a proper assessment of a firm's ability to continue operating as a going concern (C. Chen et al., 2013; Uang et al., 2006). Thus, auditor independence and expertise are essential to have the capacity to disclose an emphasis of matter when necessary, which contributes to avoiding litigation and reputation costs.

2.4.2 Determinants of GCOs

2.4.2.1 Client-Related Factors

The extant literature demonstrates a wide range of client factors related to the issuance of GCOs. These factors can be classified into two categories: (a) factors related to financial statements, including firm size, prior GCOs, liquidity, leverage, profitability, and defaults on debt; and (b) factors not related to financial statements, including market-related factors, turnaround initiatives, and corporate governance factors (Carson et al., 2013). These factors are discussed in the following subsections.

[18] According to J. Krishnan (1994), auditor switching is less likely to affect the following year's opinion.
[19] According to Louwers (1998), a self-fulfilling prophecy leads to accelerated bankruptcy.
[20] A firm's failure is often referred to as filing for bankruptcy.
[21] According to the Auditing and Assurance Standards Board (2015), an entity's ability to continue operating as a going concern must be evaluated by management in accordance with Australian Accounting Standards (ASA 570).

Factors Related to Financial Statements

The extant literature generally concludes that auditors are more likely to issue GCOs for smaller firms (Berglund et al., 2018; H. Chung et al., 2019; Dopuch et al., 1987; Geiger & Raghunandan, 2001; McKeown et al., 1991; Mutchler et al., 1997). In addition, prior studies report an association between the issuance of GCOs and prior GCOs, suggesting that there is a persistence in the issuing of GCOs (H. Chung et al., 2019; Lennox, 2000; Mutchler, 1984). Also, firms' liquidity is linked to the issuing of GCOs since several studies report an association between the issuance of GCOs and lower liquidity (H. Chung et al. 2019; DeFond et al., 2002; Koh, 1991; Koh & Killough, 1990; Lennox, 1999; Menon & Schwartz, 1987; Mutchler, 1984; Raghunandan & Rama, 1995; Robinson, 2008). Moreover, prior studies report an association between the issuance of GCOs and firms with higher leverage and less profitability (Altman & McGough, 1974; Berglund et al., 2018; Dopuch et al., 1987; Kida, 1980; Mutchler, 1984; Raghunandan & Rama, 1995; Robinson, 2008). Finally, prior studies report an association between the issuance of GCOs and debt default (Behn et al., 2001; Berglund et al., 2018; Carcello & Neal, 2000; Chen & Church, 1992; DeFond et al., 2002; Geiger & Raghunandan, 2002; Geiger et al., 2005; Mutchler et al., 1997; Robinson, 2008).

In addition, numerous GCO studies seek to determine the predictors of bankruptcy, and the literature identifies a variety of independent factors that determine the probability of bankruptcy.[22] Indeed, some scholars have developed models for predicting bankruptcy, which include a combination of financial ratios. For instance, Altman (1968) investigated several economic ratios for a bankruptcy prediction and concluded that the use of one ratio is not efficient. Altman (1968) provided a "Z-score", which combines a set of financial ratios in a discriminant analysis for the firm bankruptcy prediction problem and reported an association between the discriminant-ratio model (Altman's Z-score[23]) and actual bankruptcy.[24] Several studies report an association between the likelihood of bankruptcy using Altman's Z-score and the

[22] Carson et al. (2013) identify several financial ratios used in going-concern studies to determine bankruptcy probability, such as cash flow from operations / total debt, current assets / current liabilities, net worth / total debt, total debt / total assets, and total liabilities / total assets.

[23] Z-score = .012(Working capital/Total assets) + .014(Retained Earnings/Total assets) + .033(Earnings before interest and taxes/Total assets) + .006(Market value equity/Book value of total debt) + .999(Sales/Total assets).

[24] The limitation of Altman's (1968) study was that the sample firms investigated were all publicly held manufacturing firms.

issuing of GCOs (Berglund et al., 2018; Blay et al., 2011; Callaghan et al., 2009; Ratzinger-Sakel, 2013; Read, 2015). In addition, Zmijewski and Dietrich (1984) proposed an alternative approach for firm bankruptcy prediction, which is commonly referred to as Zmijewski's financial condition (ZFC) score. Several studies report an association between the likelihood of bankruptcy using the ZFC score and the issuing of GCOs (DeFond et al., 2002; Geiger & Rama, 2003; Read & Yezegel, 2016; Robinson, 2008; Sundgren & Svanström, 2014). Despite the veracity of the financial ratios used in the literature that are evidentially linked to bankruptcy, it is necessary to continually assess the effectiveness of these ratios in response to changes in the audit environment (Carson et al., 2013).

Factors Not Related to Financial Statements

In addition to financial statement factors, the extant literature documents other client-related factors observed from outside the financial statements that impact the issuance of GCOs, including market-related factors, turnaround initiatives, and corporate governance factors. The market variables that impact the issuance of GCOs include return volatility, industry-adjusted returns, and contrary factors and mitigating client information (Bell & Tabor, 1991; Dopuch et al., 1987; Mutchler, 1984). The overall conclusion derived from the literature is that auditors are more likely to issue a GCO when a firm's industry-adjusted returns are lower and the return volatility is greater (Bell & Tabor, 1991; Berglund et al., 2018; Callaghan et al., 2009; DeFond et al., 2002; Dopuch et al., 1987; Kausar & Lennox, 2011; Kim, 2021; Mayhew & Wilkins, 2003; Mutchler & Williams, 1990; Robinson, 2008). Moreover, some studies report an association between mitigating factors and the issuance of GCOs and conclude that mitigating factors like management plans to issue equity and debtor-in-possession are negatively associated with the issuance of GCOs (Abbott, Parker, & Peters, 2003; Behn et al., 2001), while Geiger and Rama (2003) report a positive association between cost-reduction plans and the issuance of GCOs. Furthermore, both operating and strategic turnaround initiatives could influence the issuance of GCOs. This turnaround is found to be associated with a higher likelihood of receiving GCOs (Bruynseels et al., 2011, 2013; Bruynseels & Willekens, 2012). Finally, some GCO studies conclude that auditors' decisions to issue GCOs are likely to be impacted by corporate governance factors as several studies report that auditors are more likely to issue GCOs to firms with more effective audit committees (Alderman & Jollineau,

2020; Carcello & Neal, 2000, 2003; C. Wu et al., 2016). Bruynseels and Cardinaels (2014) find that auditors are less likely to issue GCOs to clients if there is a friendship between the client's CEO and members of the audit committee. Thus, according to these findings, the issuance of GCOs could be conditional on the client's corporate governance.

2.4.2.2 Auditor Characteristics

The extant literature demonstrates certain auditor characteristics related to the issuance of GCOs, including auditor–client relationship, auditor size, and industry specialisation. Although other auditor characteristics are examined in the literature, such as auditor organisational forms and auditor switches, the focus in the following subsections will be on characteristics that have been extensively examined in prior studies.

Auditor–Client Relationship

According to Habib (2013), economic bonding between auditors and their clients generated by the fees paid to the incumbent auditor have a negative impact on GCO judgements. After many high-profile accounting scandals, regulators raised concerns[25] about the significant fees paid to auditors by clients since the importance of these fees could impact auditors' judgement. While several studies report an association between fees paid to auditors and the issuance of GCOs (Ahadiat, 2011; Basioudis et al., 2008; Firth, 2002; Sharma, 2001; Wines, 1994; Ye et al., 2006), the findings of these studies are mixed.[26] In addition, audit firm tenure is another auditor–client relationship factor that could impact GCO judgements. Kurnia and Cellica (2016) and Chi et al. (2017) document a positive association between the issuance of GCOs and audit firm tenure. However, the extant literature largely reports no association between the issuance of GCOs and long audit tenure [27] (Garcia-Blandon & Argiles, 2015; Knechel & Vanstraelen, 2007; Ramadhan & Sumardjo, 2021; Ratzinger-Sakel, 2013).

[25] Justifications for these concerns were provided in Section 2.2.4.
[26] Section 3.3.2 in Chapter 3 will discuss the findings of prior studies that examine the impact of auditors' fees on the issuance of GCOs.
[27] Ratzinger-Sakel (2013, p139) defined "long tenure" as "the audit engagement period that is longer than three years".

Auditor Size

Although a few studies find no discernible variations in the GCOs reported by Big N versus non-Big N auditors (Foster & Shastri, 2016; Read & Yezegel, 2016), several studies document a significant difference between Big N and non-Big N auditors in the likelihood of issuing GCOs and error rates (Berglund et al., 2018; Habib, 2013; Harris et al., 2015; L. Myers et al., 2014). For instance, Y. Xu et al. (2013) document that Big N auditors responded faster to the global financial crisis during 2007–2008 and increased their GCO rates earlier than non-Big N auditors. In addition, Habib (2013) conducted meta research on determinants of GCOs and found that the Big N auditors are more likely to issue GCOs than non-Big N auditors. In contrast, Carson et al. (2016) showed a trend in Australia between 2005 and 2013 in which Big N auditors issued fewer GCOs than non-Big N auditors. Moreover, several studies document that Big N auditors have greater accuracy in issuing GCOs, while non-Big N auditors are more likely to have a higher number of both Type I and Type II misclassifications[28] (Geiger & Rama, 2006; L. Myers et al., 2014; Read & Yezegel, 2016).

Industry Specialisation

While several studies have examined the association between auditor industry specialisation and the issuance of GCOs, as well as the accuracy of GCOs, the evidence related to this association is mixed. For instance, according to Lim and Tan (2008), Reichelt and Wang (2010), and Bills et al. (2015), industry-specialist auditors are more likely to issue GCOs, while Pendley (1998), Minutti-Meza (2013), and Gaver and Utke (2019) found no significant difference in issuing GCOs between industry specialists and non-specialist auditors. Furthermore, Bruynseels et al. (2006) and Dunn et al. (2002) reported no difference in the accuracy of reporting GCOs between specialists and non-specialists.

2.4.2.3 Environmental Characteristics

The extant literature demonstrates certain environmental characteristics related to the issuance of GCOs, including litigation environment, regulatory environment,

[28] However, Hardies et al. (2018) found no variations in Type II misclassification between Big N and non-Big N auditors.

and changes in audit market structure. These characteristics are discussed in the following subsections.

Litigation Environment

According to Anantharaman et al. (2016), auditors are more likely to issue GCOs to firms with more legal responsibility since they report greater issuance of GCOs for US auditors in states with relatively high legal liability. Similarly, Chy and Hope (2021) reported finding a positive association between GCOs and an increase in auditor liability law. Mo et al. (2015) found that larger auditors are associated with greater issuance of GCOs when the litigation risk is higher. Moreover, prior studies document a change in the likelihood of issuing GCOs following a change in the auditor's litigation environment (Geiger, Raghunandan, & Rama, 2006; Mo et al. 2015). Thus, according to the consistent conclusions of prior studies, an auditor's greater litigation liability leads to higher issuance of GCO.

Regulatory Environment

Although L. Myers et al. (2014) reported greater accuracy in issuing GCOs for Big N auditors post-SOX (2002), some US studies report no association between regulation changes and auditors' GCO judgements (J. Kao et al., 2014; Li, 2009). In line with this, Carey et al. (2012) investigated Type I misclassifications for GCOs in Australia pre-CLERP 9 (Australian Government, 2004) compared to post-CLERP 9 and found Type I reporting errors for GCOs were very similar between the two periods. This finding implies that any changes in GCO decisions as a result of the implementation of CLERP 9 in response to high-profile corporate failures in 2001 were relatively transient. Fargher and Liwei (2008) examined the propensity to issue GCOs before and after the high-profile collapses and reported an increase in issuing GCOs after the crisis, which weakens the argument of regulatory impact.

Changes in Audit Market Structure

The general market conditions, such as political corruption and initial public offering (IPO), could impact auditors' decisions in issuing GCOs. For instance, H. Xu et al. (2019) concluded that auditors are more likely to issue GCOs for firms that are more politically corrupt, suggesting that auditors consider political corruption as a potential audit risk in modelling their decisions for GCOs. In addition, Leone et al.

(2013) examined the influence of market structure on the issuance of GCOs by studying the impact of IPOs and found fewer GCOs reported for IPOs of internet firms during the market hysteria of 1999[29] in comparison to the pre-period and to non-internet firms' IPOs during the same time period. Their findings indicate that market structure changes could have a substantial impact on auditor GCO judgements for public firms.

2.5 Audit Fees

2.5.1 Concept and Definition

The complexity of the relationship between auditors, clients, and financial statement users leads to difficulties related to the recognition of the audit service (Simunic, 1980). Audit fees are generally divided into three components: (a) fixed costs associated with conducting the audit procedures and reporting an independent opinion (Palmrose, 1989), (b) litigation costs associated with possible audit failure and reputational losses (Pratt & Stice, 1994), and (c) profit margin determined by the audit firm and market competition (Simunic & Stein, 1996).

According to Simunic (1980), the key feature of the audit fee model is that audit fees are charged based on the amount of time and effort required, and the price of audit services is set based on the "unit pricing" for external audit services. The proper level of auditing is affected by both the client's expectations[30] and the expenses resulting from the audit service (Demski & Swieringa, 1974). Indeed, Simunic (1980) developed the audit fee model initially based on the assumption that both the auditor and the auditee are risk neutral and pursue a strategy to maximise their interests. Then, Simunic and Stein (1996) documented that the auditor is subject to a potential risk of an undetermined return due to unexpected litigation and reputational cost caused by material misstatement. Consequently, while determining the price of an audit service, auditors make fee adjustments based on the degree of litigation risk, and to achieve the fee adjustment, auditors can increase the degree of work or charge a fee premium. Therefore, high audit risk and litigation costs could lead to more audit time and effort

[29] The market hysteria was caused by "dotcom mania", which is defined by Leone et al. (2013) as "the time of the wave of stressed Internet firms filing to go public on NASDAQ, the capital markets entry point for the companies that went on to constitute.

[30] The client expects the auditors to create advantages to avoid liability related to the financial statement users.

result in a higher likelihood of identifying any major misstatements, which results in higher audit fees (Bailey et al., 2018; Bell et al., 2001; Brinn et al., 1994; Charles et al., 2010; Venkataraman et al., 2008). In addition, there could be variations for audit fees in the audit market based on audit firm size because larger auditors incur higher levels of reputational losses from audit failure (Dye, 1993; Simunic & Stein, 1996).

Moreover, agency issues impact the amount of audit fees because the degree of risk increases in clients with more agency problems[31] (Nikkinen & Sahlström, 2004). As part of the monitoring costs, both internal and external auditors are considered as safeguards for the shareholders' interests and provide more confident assurance that management acts in the best interests of owners (Jensen & Meckling, 1976). Thus, auditors would spend more time and effort on firms with larger agency difficulties in order to fulfill their monitoring tasks and decrease the risk posed by inadequate internal control (Agoglia et al., 2015).

2.5.2 Determinants of Audit Fees

The extant literature identifies a wide range of factors that influence the audit fees. This study categorises these factors into client-related factors and audit-related factors, which are identified and discussed in the following subsections.

2.5.2.1 Client-Related Factors

Client Size

Audit fees studies mostly conclude that the size of the audit client firm is considered the most significant predictor of audit fees (Hay et al., 2006). The considerably positive association between client size and audit fees is explained by the fact that auditing the financial statements of larger firms requires more time and effort in terms of reviewing additional data and information (P. Chan et al., 1993; Francis, 1984; Pong & Whittington, 1994; Simunic, 1980).

The primary theoretical argument is that client size is the measurement used in the audit fee model, since client size could be measured by sales or assets (Pong & Whittington, 1994). P. Chan et al. (1993) argue that variations across industries could

[31] Section 3.2.1 in Chapter 3 discusses agency theory in detail.

drive net sales, while the selection of accounting policy[32] could drive total assets. Despite the argument of best size measurement, prior studies indicate a positive and significant association between audit fees and sales (P. Chan et al., 1993; S. Chung & Narasimhan, 2002; Gregory & Collier, 1996) as well as total assets (Carson & Fargher, 2007; P. Chan et al., 1993; Chan, Guoping, & Jerry, 2013; Johnstone et al., 2014). Thus, the extensive studies consistently documents higher audit fees for larger clients, regardless of the size measures used.

Client Complexity

It is reasonable to assume that the more complicated the client is, the more difficult it will be to audit, since a complicated client requires more audit time and effort, therefore increasing audit costs. The literature on audit fees identifies several complexity proxies that increase the audit fees, such as the nature of the business, the geographic location, the internal control system, and the presence of exceptional or uncommon transactions (Bailey et al., 2018; Bell et al., 2001; Brinn et al., 1994; Firth, 1985; Geiger & Rama, 2003; H.-W. Huang et al., 2009; Maher et al., 1992; Whisenant et al., 2003; M. Zhang & Myrteza, 1996). For instance, H.-W. Huang et al. (2009) and Bailey et al. (2018) report a positive association between the square root of the number of business segments and audit fees. In addition, Miah et al. (2020) document an increase in audit fees associated with an increase in the number of subsidiaries. Thus, the literature consistently provides supportive evidence related to the positive association between client complexity and audit fees.

Firm Risk

Due to the possibility of a liability claim or reputational damage, auditors are more likely to devote more time and effort to risky clients (Simunic & Stein, 1996). Firth (1990) argues that risky firms could incur higher audit fees since the loss caused by audit failure could be reputational and monetary. To decrease this risk, auditors increase the audit hours spent on risky clients to control for the high risk of misstatement (Bell et al., 2001). However, auditors may charge a premium audit fee if they are unable to decrease risk to an acceptable level (Houston et al., 2005). The literature consistently reports higher audit fees associated with higher risks (Basioudis,

[32] The selection of policy could include the use of accounting policies based on fixed asset revaluations, the handling of goodwill, and other assets.

2007; Bell et al., 2001; Charles et al., 2010; Cobbin, 2002; Hoitash et al., 2008; Simunic & Stein, 1996; Taylor & Simon, 1999). For instance, Bailey et al. (2018) found that a higher quality of a firm's risk management contributes to reducing audit fees.

Prior audit fee studies included some proxies for financial performance, such as leverage ratio and profitability, since better performance decreases the possibility of reputational and monetary loss (e.g., Gist, 1992; H.-W. Huang et al., 2009). According to Simunic (1980), firms with higher leverage are more likely to fail, which leads their auditors to incur loss. Financial leverage is frequently used as a proxy for a firm's long-term stability, and it is anticipated that higher leverage implies greater audit risk and hence higher audit fees as a substantial number of studies report a positive relationship between leverage and audit fees (Choi et al., 2008; Eshleman & Guo, 2014; Gist, 1992; Kwon & Yi, 2018; Z. Lin & Liu, 2013; Menon & Williams, 2001; Wang & Zhou, 2012). However, a few studies report an insignificant association between higher leverage firms and audit fees,[33] which could be explained by the increase in monitoring by lenders in highly leveraged firms (Ang et al., 2000; Chaney et al., 2004). In addition to a firm's leverage, client profitability is considered another measure of risk, which can be measured by the return on assets or the reported loss. The extant literature largely reports a negative (positive) association between return on assets (loss) and audit fees (Choi et al., 2008; Eshleman & Guo, 2014; H.-W. Huang et al., 2009; H. Lee & Mande, 2005; Z. Lin & Liu, 2013; Wang & Zhou, 2012).

2.5.2.2 Auditor-Related Factors

Auditor Size

Prior studies refer to large audit firms as the Big4 (previously Big 8/6/5), while small audit firms are referred to as non-Big4. According to most prior studies, larger audit firms are associated with higher audit fees (Basu et al., 2001; Choi et al., 2008; Choi, Kim, Kim, & Zang, 2010; Foster & Shastri, 2016; Francis et al., 1999; Francis & Stokes, 1986; G. Krishnan, 2003; Simon & Taylor, 2002; Taffler & Ramalinggam, 1982; Turpen, 1990; Willenborg, 2002). The positive association between audit fees and the Big4 could be justified by the Big4's reputation (DeAngelo, 1981b), higher

[33] In their meta-analysis, Hay et al. (2006) conclude that two US and five UK studies report insignificant results for leverage ratio, while ten US and nine UK studies report a positive and significant association.

brand identification and market power (Basioudis & Fifi, 2004), and higher customer selectivity (Cameran, 2005).

However, some studies report no impact on audit fees by auditor size (Brinn et al., 1994; Chaney et al., 2004; Firth, 1985; Johnson et al., 1995; Simunic, 1980). According to Chaney et al. (2004), UK audit clients in private firms generally do not believe that the quality of the service provided by larger auditors is substantially better to justify paying a fee premium. Additionally, some studies indicate that the association between auditor size and audit fees is subject to the client size since they find big auditors have no impact on audit fees for larger clients (Francis & Stokes, 1986; Palmrose, 1986a; Simon et al., 1986; Simunic, 1980). However, other studies document that big audit firms charge an audit fee premium for larger and smaller clients (Francis & Simon, 1987; Peel & Roberts, 2003).

Auditor Specialisation

According to Sun and Liu (2011), a specialist auditor is an auditor who has specialised in a particular industry or market with significant training and experience. Specialist auditors are likely to spend more on employee recruiting and training, information technology, and audit technologies (Dopuch & Simunic, 1982). Indeed, due to their extensive industry knowledge, auditor specialists offer professional services to their clients (Balsam et al., 2003; Solomon et al., 1999), which contributes to the auditors' brand-name reputation, therefore enabling them to charge higher audit fees. O'Keefe et al. (1994) argue that expert auditors adhere to auditing standards more strictly than non-specialist auditors in order to avoid reputational harm and lawsuit threat. As a result, specialist auditors attempt to protect their costs in resources, knowledge, and reputation by charging higher audit fees. Several studies document that audit clients are charged higher audit fees by specialist auditors (Carson, 2009; Choi et al., 2010; Craswell et al., 1995; Francis et al., 2005; Palmrose, 1986a; Redmayne et al., 2010).

Auditor Tenure and Auditor Switching

Auditor tenure can be measured by the length of years or auditor switching. According to Simunic (1980), longer auditor tenure could contribute to more familiarity with clients' operations and accounting systems, which leads to a capacity to minimise audit work and a reduction of audit fees. However, Simunic (1980) found

an insignificant association between auditor tenure and audit fees. In addition, auditors could charge lower audit fees for the initial engagement to get more clients [34] (DeAngelo, 1981a). The prior studies provides mixed evidence for the impact of auditor tenure on audit fees. While some studies report a positive association between auditor tenure and audit fees (Felix et al., 2001; Hoitash et al., 2007; Kwon & Yi, 2018; Wang & Sewon, 2009), others report insignificant results (Antle et al., 2006; Caneghem, 2010; Eshleman & Guo, 2014; Johnson et al., 1995). In addition, Hay et al. (2006) conclude that auditors are more likely to charge lower audit fees for new engagements, which supports the argument of low-balling. Moreover, Peel (2013) examined the initial engagement fees for UK-listed large firms and concluded that switching to other Big4 auditors results in a discount fee, indicating that auditor switching has a critical impact on audit fees since all four auditors provide a comparable level of quality. Based on the literature, audit fees could be lower in the first few years due to the unfamiliarity of the clients' operations and the discount offer, yet audit fees could increase in subsequent years due to an increase in audit effort.

Other Auditor-Related Factors

Prior literature provides other proxies to measure auditor characteristics that are correlated significantly with audit fees, such as audit report lag (Ezzamel et al., 1996; O'Sullivan, 2000), auditor location (Choi et al., 2008), the merger of audit firms (Iyer & Iyer, 1996), and the provision of non-audit services[35]. First, prior audit fee studies included the audit report lag[36] in their models. Ezzamel et al. (1996), O'Sullivan (2000), and Hay et al. (2006) indicate that a higher audit fee is associated with longer audit report lag, while O'Sullivan (1999) reports an insignificant association between report lag and audit fees. Second, the audit charge may also be affected by the audit firm's location. Increased proximity could imply more familiarity with client information, thus decreasing auditor–client knowledge asymmetry and lowering audit costs (Malloy, 2005). Alternatively, the knowledge advantage and ease of communication caused by proximity may lead to better monitoring and quality from

[34] The discount on audit fees for the first year of engagement can be described as a "low-balling strategy".
[35] Section 3.3.3 in Chapter 3 discusses the prior studies related to the impact of provision of NAS on audit fees.
[36] The audit report lag refers to the number of days between the financial year-end and the signing date of the audit report.

local auditors, which could lead to higher audit fees (Choi et al., 2012). Third, Iyer and Iyer (1996) and Lai (2019) investigated the impact of audit firms' merging on audit fees and concluded that audit fees are not affected for clients of merged audit firms.

2.6 Chapter Summary

Chapter 2 began with a general discussion on audit quality, including the important role that an auditor plays in the capital market and the determinants of audit quality. Consequently, the regulation of the auditing profession and the importance of audit independence were discussed. The regulatory environment for the provision of NAS was then explored, with details provided on the Australian environment. The chapter further defined earnings management and discussed the incentives beyond the opportunistic practices of earnings management before the determinants of earnings management were discussed. Also, the chapter defined GCO and provided a wide range of factors that influence GCOs issued by auditors. Finally, the chapter defined audit fees and discussed the key features of the audit fee model before the determinants of audit fees were given.

Chapter 3: Theoretical Perspective and Hypotheses Development

3.1 Chapter Overview

The previous chapter presented a review of the audit quality literature, including a comprehensive overview of essential concepts, measures, and determinants of this study's variables of interest. Also, major regulations related to the provision of NAS were discussed.

Chapter 3 addresses the study's theoretical framework and the empirical literature relevant to the tested hypotheses. The justification for selecting this study's theoretical prospective is discussed. In addition, the empirical literature relating to each proxy of audit quality used in this study is then discussed, and the chapter provides a detailed justification for the expected relationship between NAS and audit quality. Finally, a conceptual schema is presented, which summarises the key relationships investigated in this study, before a summary of Chapter 3 is provided.

3.2 Theoretical Perspective

Five fundamental theories are discussed in the corporate governance literature: agency theory, resource dependency theory, stewardship theory, stakeholder theory, and institutional theory.[37] For the objective of this study, the focus is placed on the selected theory, which is agency theory. Agency theory is relevant to testing the relationship between the impact of NAS and audit quality since the independent auditor plays a significant role in minimising agency problems by aligning the interests of shareholders and management.

3.2.1 Agency Theory

Agency theory is applied in order to examine the relationship between the owners and the management of an entity (Fama & Jensen, 1983a). Jensen and Meckling (1976) introduced the application of agency theory to explain why managers use independent

[37] For more information about these theories, see Pfeffer and Salancik (1978) for resource dependency theory; Herzberg, Mausner, and Synderman (1959) for stewardship theory; Mercier (1999) for stakeholder theory; and Meyer and Rowan (1977) for institutional theory.

auditors to confirm the integrity and completeness of annual reports. The agency relationship is defined by Jensen and Meckling (1976) as "a contract under which one or more persons (or principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (p. 308). Agency difficulties arise due to the separation of ownership and control of wealth, yet one of the core concepts of a free-market system is separating ownership from management due to specialisation advantages (Copeland et al., 2005). Because the agent has an information advantage in an agency relationship, it is difficult and costly for the principal to ascertain if the agent is operating in the principal's best interests. According to Eisenhardt (1989), agency theory is engaged in resolving agency difficulties that are developed primarily as a result of objective conflicts and information asymmetry between the principal and agent.

Agency theory presumes that the interests of the agent and principal are incompatible and that both the agent and principal are mutually complementary (Jensen & Meckling, 1976). As a result, the agent may focus on increasing their own benefit at the expense of the principal's interest when afforded the opportunity (J. Davis et al., 1997). The principal's objective is to induce appropriate behaviour from the agent in consideration of the principal's uncertain future expectations. Thus, the principal is motivated to monitor the agent's activities (Underdown & Taylor, 1987), and the audit function is one technique for restraining the agent's opportunistic behaviour (Benston, 1980; Chow, 1982; Watts & Zimmerman, 1980).

A conflict of interest issue could arise because both the agent and principal seek to increase their own self-interest. This conflict of interest occurs due to different risk preferences, which raises concerns about information asymmetries and divergent motives between the agent and principal, such as financial incentives and employment opportunities (Berle & Means, 1932; Ross, 1973). To resolve this conflict, the principal should establish adequate control systems, and the interests of the agent and principal must be aligned. To align the principal–agent interests, the principal incurs agency costs, which are an aggregate of monitoring costs, bonding costs, and residual costs (Jensen & Meckling, 1976).[38] According to the agency literature, independent

[38] According to Jensen and Meckling (1976), monitoring costs are associated with monitoring the agent's improper activities, such as external and internal audits. Bonding costs are incurred to ensure the agent acts in the principal's best interests, such as remuneration that includes stock options. Residual costs are incurred because not all of the agent's activities are controllable.

auditing is an essential mechanism for controlling conflicts since auditors are employed essentially to insure the credibility of the auditee's financial reports and to minimise the principal–agent conflict (Fama & Jensen, 1983a, 1983b; Jensen & Meckling, 1976; Watts, 1977; Watts & Zimmerman, 1983).

3.2.2 Theory Selection Justification

Agency theory provides the most relevant theoretical framework for examining the relationship between the impact of NAS and audit quality (Parkash & Venable, 1993). Specifically, from the agency theory perspective, the audit function plays a significant role in minimising agency problems by aligning the interests of shareholders and management (Abbott et al., 2000; J. Cohen et al., 2004; Sarens & Abdolmohammadi, 2011). The key function of an audit is the capacity of an auditor to provide independent assurance about the integrity and credibility of the financial information reported by management (DeFond, 1992; Jensen & Meckling, 1976; Knechel et al., 2006; Lennox, 2005). However, the quality of the audit function can potentially be impacted by the provision of NAS due to the lack of independence.[39] Indeed, the absence of an independent auditor imposes agency costs on the auditee (Parkash & Venable, 1993).

Hylton (1964) and Schulte (1965) argued that the provision of NAS by the incumbent auditor raises substantial threats to audit independence since an auditor can develop a strong relationship with management and can possibly be involved in clients' activities such as making decisions, receiving a position as a company employee, adopting a position of advocacy, and so on. For instance, Arnold and De Lange (2004) examined the conflict of interest issue in Enron's collapse and indicated that, due to the provision of NAS, Arthur Andersen failed to safeguard the owners' interests and failed to minimise agency costs. Indeed, Arthur Andersen, as a consultant, assisted Enron with establishing special-purpose entities in order to cover the high risks and potential losses (Arnold & De Lange, 2004).[40]

The provision of NAS by the incumbent auditor provides vital inside knowledge about the client's operations (Knechel & Sharma, 2008; Melancon, 2000; Simunic,

[39] The impact of NAS on audit quality is discussed comprehensively in Section 3.3.
[40] Numerous studies use the agency theory to explain the behaviour of management, auditors, and other parties involved in accounting scandals (Gavious, 2007; Healey & Palepu, 2003).

1984). Beck et al. (1988a, 1988b) illustrate through an analytical model that the start-up and switching costs associated with the provision of NAS result in incremental economic bonding between auditors and their clients, and managers could avoid purchasing NAS from the incumbent auditors due to the agency costs caused by the lack of independence. However, their model predicts that the cost savings from knowledge spillovers mitigate the level of bonding in a competitive market and encourage auditors to share some of the cost savings with their clients. Specifically, the incumbent auditor could provide a fee reduction equal to the avoidable cost obtained from knowledge spillovers (Parkash & Venable, 1993), yet the trade-off between the fee reduction and agency costs could result in impermanent audit independence.[41]

Given the agency conflicts and costs associated with the provision of NAS, the agency theory provides this study's underlying theoretical perspective. The independence issue and the sequence of knowledge spillovers associated with the provision of NAS are discussed in the next section.

3.3 Hypotheses Development

From the early 1950s, regulatory and governmental investigations have continually addressed the issues relating to the provision of NAS (Australian Government, 2004; Barr, 1959; US Government Accountability Office, 1996; US Public Oversight Board, 2000, 2010; USSEC, 1977, 1978, 1979, 1980, 1981, 1982, 2000, 2003). The regulatory and governmental concerns are based on the belief that the incumbent auditor will be more likely to compromise their independence when obtaining a significant amount of NAS from clients because of the increased economic bond and the potential loss of valuable fees (Wallman, 1996). In line with the regulatory concerns, numerous studies have concluded that the provision of a higher level of NAS is associated with lower audit quality due to lack of independence caused by the economic bond (Castillo-Merino et al., 2020; Meuwissen & Quick, 2019; Reynolds et al., 2004; Sharma & Sidhu, 2001; Wines, 1994).

In contrast, DeAngelo (1981a) argues that the incumbent auditor earns quasi-rent by the provision of NAS, which contributes to avoiding some costs associated

[41] This prospect is consistent with DeAngelo (1981a), Simunic (1984), and Beck et al. (1988a).

with the audit process.[42] Simunic (1984) argues that the incumbent auditor could earn a greater level of quasi-rent by the provision of NAS due to knowledge spillovers. Some studies conclude that the provision of NAS by the incumbent auditor can contribute to more efficiency and effectiveness of an audit due to the knowledge spillovers obtained from the increase of the auditor's specific knowledge in the client's operations and industry (Arrunada, 1999; Beattie & Fearnley, 2002; Beck et al., 1988b; Eilifsen & Knivsflå, 2016; Kowaleski et al., 2018; Simunic, 1984). This efficiency and effectiveness of an audit contributes to increasing the auditor's objectivity and independence. However, although the knowledge spillovers argument suggests that the provision of NAS by the incumbent auditor improves audit quality, the higher level of quasi-rent could increase the economic bond.[43] Specifically, when auditors are capable of predicting future flows from quasi-rents, the future economic dependence could compromise the auditor's independence.

This study applies three proxies as dependent variables to measure audit quality: (a) the absolute value of discretionary accrual, (b) the issuance of a GCO, and (c) audit fees.[44] Hypotheses related to the three proxies of audit quality are individually developed in the following subsections.

3.3.1 The Association Between NAS and Earnings Management

The extant literature provides mixed evidence on the association between the provision of NAS and earnings management. In support of the economic bond hypothesis, several studies conclude that the provision of NAS by the incumbent auditor is associated with higher aggressive earnings management practices (Ashbaugh et al., 2003; Causholli et al., 2014; Dee et al., 2002; Frankel et al., 2002). Lim and Tan (2008) report a positive and significant association between the provision of NAS and the discretionary accruals, which implies a lack of auditor independence.

However, some studies support the knowledge spillover hypothesis and find a negative association between the provision of NAS and earnings management,

[42] DeAngelo (1981a, p. 116) defines quasi-rent as "an excess of revenues over avoidable costs, including the opportunity cost of auditing the next best alternative client". Examples of these costs are unfamiliarity with the client's operations and industry (Arens & Loebbecke, 2000).
[43] The economic bonds are caused by clients' incentives for not switching auditors to avoid additional transition costs and the incumbent auditor incentives for using such advantages by increasing audit fees above avoidable costs (DeAngelo, 1981).
[44] The justification for selecting these proxies is discussed in Chapter 4.

suggesting an improvement in audit efficiency and effectiveness, which contributes to enhancing audit quality (Arrunada, 1999; Beattie & Fearnley, 2002; Simunic, 1984). K. Koh et al. (2013) suggest that a higher level of NAS is associated with higher earnings quality as they find NAS is negatively correlated with reporting a small earnings surprise and positively correlated with an increase in earnings informativeness. In addition, Svanström (2013) reports a negative and significant association between NAS and the absolute value of estimated discretionary accruals, which suggests knowledge spillovers. This finding indicates that the provision of NAS by the incumbent auditor increases their knowledge of client-specific information and that the use of this information benefits the audit engagement.

Additionally, part of the literature indicates no relationship between the provision of NAS and aggressive practices of earnings management (Barkess & Simnett, 1994; DeFond et al., 2002; Geiger & Rama, 2003; Kwon & Yi, 2018; Quick & Warming-Rasmussen, 2005). For example, Garcia-Blandon et al. (2017) find a positive but insignificant association between the high value of NAS and the absolute value of discretionary accruals.

Furthermore, several studies conclude that the implementation of governmental acts related to the provision of NAS contributes to an improvement in auditor independence (H. Huang et al., 2009; Knechel & Sharma, 2012; J. Krishnan et al., 2011). J. Krishnan et al. (2011) assert that the decline in earnings management after the implementation of SOX (2002) is associated with a decline in NAS, suggesting that the reductions of the provision of NAS contributes to improving auditor independence. Also, S. Hossain (2013) found that the provision of NAS was associated positively with aggressive earnings management pre-CLERP 9 (Australian Government, 2004), yet this association became statistically insignificant post-CLERP 9. However, the period after the implementation of governmental acts has been dominated by even more monitoring and protection by audit committees and regulators, which has led to a decline in earnings management (D. Cohen et al., 2008).

Importantly, prior to the accounting scandals, the amount of NAS was very high as it reached to 66% of revenues and 70% of profits for the major accounting firms in the US (US Public Oversight Board Panel on Audit Effectiveness, 2000). However, these high percentages declined from 2003 to 2009 after the major changes in the regulatory frameworks of auditing (Whalen et al., 2015). Studies using fee data from

the period before the accounting scandals largely support the economic bonding hypothesis by reporting a positive association between the provision of NAS and earnings management, suggesting that high NAS fees compromise auditor independence (Ashbaugh et al., 2003; Causholli et al., 2014; Chai & Jubb, 2000; Ferguson et al., 2004; Frankel et al., 2002; Kinney et al., 2004; Ruddock & Taylor, 2007). CLERP 9 (Australian Government, 2004) requires the audit committee, directors, and auditors to provide extensive disclosures related to the provision of NAS.[45] These extensive disclosures improve auditor independence and effectively control the provision of NAS since the evidence suggests that the provision of NAS is not associated with aggressive practices of earnings management post-CLERP 9 (S. Hossain, 2013). However, Knechel (2016) argues that the continuous enhancements to auditor independence depend heavily on how new standards and regulations interact with auditing as a professional service. Thus, the capability of the current disclosure requirements might not remain effective due to substantial changes in the audit environment. Specifically, the Australian requirements for the level of disaggregation of NAS are deemed to be inadequate (AASB, 2020). Due to the significant growth in the provision of NAS and the general support of the economic bond argument in the literature, the following hypothesis is proposed to test the association between the provision of NAS and earnings management:

> H1: There is a positive association between the provision of NAS and earnings management.

3.3.2 The Association Between NAS and Auditor Opinion

The provision of NAS by the incumbent auditor could develop extensive relationships between auditors and their clients that create pressure on an auditor to form a biased judgement. Due to economic interests, management could put pressure on auditors to refrain from issuing undesirable opinions. Geiger and Raghunandan (2002) noted that legislators express concerns about cases in which firms have filed for bankruptcy without receiving a GCO in the prior year.

The extant literature provides mixed evidence on the association between the provision of NAS and audit opinion. In support of the economic bond hypothesis,

[45] The disclosure requirements imposed by CLERP 9 were identified in Chapter 2, Section 2.2.4.3.

several studies document evidence of a negative association between the provision of NAS and the issuance of GCOs, suggesting that the provision of NAS impairs auditor independence (Ahadiat, 2011; Basioudis et al., 2008; Firth, 2002; Wines, 1994; Ye et al., 2006). For instance, using samples of bankrupt Australian firms, Sharma (2001) and Sharma and Sidhu (2001) found a negative relationship between the issuance of GCOs and the provision of NAS.

However, the provision of NAS by the incumbent auditor could contribute to obtaining additional knowledge about the client's operations and developing a well-informed opinion (Palmrose, 1986b; Simunic, 1984). Robinson (2008) reports no association between the provision of NAS and the issuance of GCOs, yet he documents a positive and significant association with the provision of tax services by the incumbent auditor, suggesting that an auditor is more likely to develop a biased and informed opinion due to knowledge spillovers.

Additionally, part of the literature reports no relationship between the provision of NAS and the issuance of GCOs (Barkess & Simnett, 1994; Callaghan et al., 2009; DeFond et al., 2002; Geiger & Rama, 2003). Craswell (1999) uses samples of 885 Australian firms and finds that auditor opinion is not affected by the provision of NAS. Also, DeFond et al. (2002) and Geiger and Rama (2003) use samples of US financially distressed firms and report no association between the provision of NAS and the issuance of GCOs.

Importantly, the change in approach to regulating the provision of NAS, such as the implementation of SOX (2002) and CLERP 9 (Australian Government, 2004), resulted in substantial impacts on the issuance of GCOs. S. Hossain (2013) reports that the provision of NAS was associated negatively with the issuance of GCOs before CLERP 9, yet this association became statistically insignificant after CLERP 9, suggesting an improvement in auditor independence. Therefore, the extensive disclosures implemented by CLERP 9 improve auditor independence and effectively control the provision of NAS. However, Fargher and Liwei (2008) document that auditors adjust their reporting behaviour following changes in the audit environment. Therefore, the effectiveness of CLERP 9 in controlling auditors' judgements might be reduced due to the substantial changes in the audit environment. Specifically, the Australian requirements for the level of disaggregation of NAS are deemed to be inadequate (AASB, 2020). Therefore, due to the substantial change in the behaviour

of NAS purchases and the general support of the economic bond argument in the Australian literature, the following hypothesis is proposed to test the association between the provision of NAS and the issuance of GCOs:

> H2: There is a negative association between the provision of NAS and the issuance of GCOs.

3.3.3 The Association Between NAS and Audit Fees

Although a few studies report an insignificant association between the provision of NAS and audit fees (Abdel-khalik, 1990; Barefield et al., 1993; O'Keefe et al., 1994), the extant literature largely reports a positive association, including Australian studies (Barkess & Simnett, 1994; Butterworth & Houghton, 1995; Craswell et al., 1995; Miah et al., 2020), US studies (Palmrose, 1986b; Simunic, 1984; Turpen, 1990), and UK studies (Ezzamel et al., 1996, 2002; Iyer et al., 2003).

However, the literature provides mixed evidence for the explanation of this positive association. Simunic (1984) and Beck et al. (1988b) argue that the provision of NAS by the incumbent auditors contributes to knowledge spillovers that could lead to economic rents. These knowledge spillovers flow from NAS to audit, which enables auditors to reduce the cost of audit procedures. In addition, L. Davis & Trompeter (1993) and Johnstone and Bedard (2001) report a positive and significant association between NAS and audit fees, and they conclude that the incumbent auditors are more likely to plan more audit efforts and use industry experts for NAS clients. In contrast, Palmrose (1986b) reports a positive association between audit fees and NAS provided by non-incumbent auditors, which weakens the knowledge spillover hypothesis. Ezzamel et al. (1996) and Abdel-khalik (1990) argue that the demand for auditing is highly elastic, which justifies the positive association. In addition, Hackenbrack and Knechel (1997) and Firth (1997) argue that the positive association is driven by specific events that increase the demand for NAS and audit effort. In support of the specific events argument, Firth (2002) reports a positive and significant association between NAS and audit fees, yet he reports an insignificant association after controlling for specific events, including client size, merger or acquisition activity, new issues of shares, new accounting and information systems, new CEOs, and corporate reorganisations and restructurings. In addition, Hay et al. (2006) argue that

the positive association could result from the monopoly power and efficiency of NAS, which enables auditors to charge higher audit fees.

Additionally, a few studies report a negative association between NAS and audit fees, suggesting lower audit quality due to "loss-leader"[46] issues (Hillison & Kennelley, 1988). McMeeking (2001) reports a negative association between the provision of NAS and audit fees, yet the negative association is conditional on auditor switching, suggesting a cross-subsidisation between NAS and audit services provided by the incumbent auditor, with audit being a loss-leader. However, Craswell and Francis (1999) assert that the public disclosure of audit fees prevents loss-leader practices. On the other hand, Antle et al. (2006) point out that the majority of studies use a simultaneous equation method, which could lead to endogeneity issues, and they report a negative association after controlling for the endogeneity. However, McMeeking et al. (2006) report a positive association even after controlling for endogeneity.

Importantly, the recent increase in NAS may potentially contribute to knowledge spillover flows from NAS to audit processes. If the knowledge spillover exists, the incumbent auditor should be able to reduce the cost and increase the efficiency of audit processes, which enables the incumbent auditor to charge lower audit fees.[47] However, as discussed in Sections 3.3.1 and 3.3.2, incumbent auditors are more likely to compromise their independence due to the lack of current regulations related to the recent increase in NAS.[48] The incumbent auditor could estimate the future flows of quasi-rents and charge higher audit fees, which leads to compromised independence. Due to the general support of the positive association between NAS and audit fees in the Australian literature, the following hypothesis is proposed to test the association between the provision of NAS and audit fees:

> H3: There is a positive association between the provision of NAS and the audit fees.

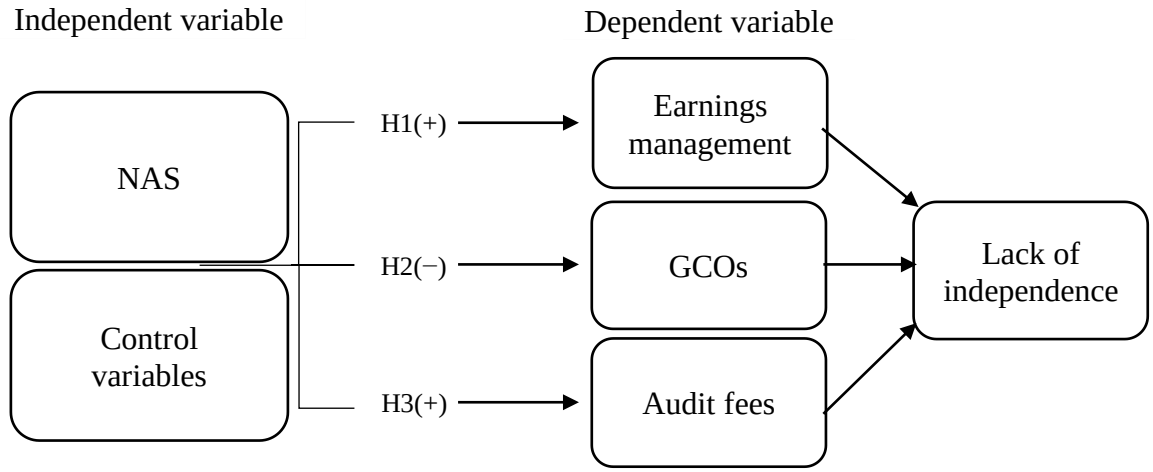
[46] Curwen and Else (2006) define loss-leader pricing as when "the low price of the loss-making product leads customers to increase their purchases of the firms' other products to such an extent that profits are increased overall". Lowballing, predatory pricing, and fee discounting are considered essential factors in examining the loss-leader pricing issue.
[47] This is consistent with DeAngelo (1981a) and Simunic (1984).
[48] Despite prior studies, the CLERP 9 (Australian Government, 2004) requirements might not remain effective with regard to audit independence.

3.4 Conceptual Schema

The conceptual schema underlying this study's hypotheses is shown in Figure 3.1.

Figure 3.1

Conceptual Schema Underlying the Study's Hypotheses



Note. NAS = non-audit services; H = hypothesis; GCOs = going-concern opinions.

As suggested by Figure 3.1, this study's hypotheses (that is, *H1*, *H2* and *H3*) to be tested suggest a positive relationship between the provision of NAS and earnings management as well as audit fees but a negative relationship with GCOs. This relationship suggests that NAS leads to a lack of auditors' independence and, therefore, poor audit quality.

3.5 Chapter Summary

Chapter 3 identified the main underlying theoretical perspective of this study. The empirical literature relating to audit quality and the provision of NAS examined in this study was discussed. The chapter further provided justification for the expected direction of each audit quality proxy used in this study and introduced a set of testable hypotheses. Finally, this chapter provided a conceptual schema outlining the key relationships between NAS and audit quality.

Chapter 4 presents the research method used in this study, including the sample selection, documentation, and time period. Additionally, Chapter 4 provides the measures used in this study for the dependent and independent variables. Finally,

Chapter 4 addresses this study's statistical analysis, models, and regressions to examine the hypotheses presented in Chapter 3.

Chapter 4: Research Method

4.1 Chapter Overview

Chapter 3 presented the corporate governance theoretical structure and discussed the theories used in this study. Then, the NAS proxies were detailed, leading to testable hypotheses, before the conceptual schema of this study was provided.

Chapter 4 outlines the analysis process used to test this study's hypotheses. The chapter begins with a justification and analysis of the selected sample, source data, and time period. Then, the chapter documents how this study's dependent variables (i.e., earnings management, GCOs, and audit fees) are calculated. Measures are then given to operationalise the independent variables (i.e., measures for NAS proxies). Sensitivity tests are subsequently described after the statistical tests and regression models used to test the hypotheses are illustrated. Finally, a summary of Chapter 4 is provided.

4.2 Sample, Documentation, and Time Period

The following subsections provide reasoning for the selection of this study's sample, data collection resources, and time period being tested.

4.2.1 Selection Justification

The samples taken for the current research are publicly listed Australian firms from 2014 to 2018. These firms were chosen since they have information readily available and in an interactive manner. Keeping in mind earlier studies, insurance companies, trust and investment companies, stock exchanges, banks, and financial institutions were excluded since they are subjected to exclusive accounting regulations and their financial statements are governed by extraordinary regulations that are not applicable to the models used in this study (Givoly & Hayn, 2000; Givoly et al., 2007; Ruddock et al., 2006). Also, firms listed on the Australian Securities Exchange (ASX) that are incorporated outside of Australia were excluded from this study's sample since their financial statements are not necessarily prepared in compliance with Australian disclosure requirements (Clifford & Evans, 1997). The current research includes, as

an outlier, significant earnings management value observations. However, in light of previous research (Kothari et al., 2005; J. Krishnan et al., 2011), the current research models were winsorised at levels 1% to 99% to help remove outlier influence. Hence, after all removals, the sample obtained for the current analysis was 7,779 firm-year observations and 5,476 firm-year observations for the opinion model.[49]

4.2.2 Source Documentation Justification

In this study, various resources were used to collect the data required for analysis. The dependent variables in this study are earnings management, auditor opinion, and audit fees. The performance adjustment model presented by Kothari et al. (2005) was used to measure earnings management, while the issuance of a GCO was used as a proxy for auditor opinion. The natural logarithm of audit fees paid to the audit firm was applied to measure auditor effort. The Securities Industry Research Centre of Asia-Pacific (SIRCA) database, Morningstar DatAnalysis Premium, and Connect 4 Pty Ltd were used to extract the data for the current research. Audit variables such as auditor names and audit report dates were extracted using SIRCA and Connect 4 Pty Ltd. The Morningstar DatAnalysis Premium was used to attain financial-based variables like financing and return on assets.

On the other hand, data for fees paid to auditors (that is, audit fees and NAS fees) were collected manually from the annual reports. This collection included the subgroup values of NAS, such as tax services, accounting services, advisory services, and other NAS services.

4.2.3 Time Period Selection

Within this research, a pooled analysis was conducted for the calendar years 2014 to 2018. As the influence of NAS upon audit quality is needed to be assessed in this study, this specific time period was chosen because there was high purchase demand for NAS, and the focus on the provision of NAS was very high in comparison with audit services (Beardsley et al., 2021). It is essential to observe how audit firms have increased their focus on providing NAS since this could raise audit fee pressure, which is a problem for audit firms on a continuous and widespread basis (Beardsley et

[49] The opinion model excludes non-distressed firms.

al., 2021). Concerns have been raised by the PCAOB about the decline in profitability of audit engagements, which has negatively influenced the quality and quality control systems of audit firms (PCAOB, 2010). Recently, in Australia, the business environment has observed a growth in purchasing NAS, which has raised a concern about how this increase will affect audit quality (Parliamentary Joint Committee on Corporations and Financial Services, 2020). Hence, it is essential to keep in mind how the high profitability levels of NAS might influence the audit quality and activities of the audit firm.

In addition, issues related to auditor independence have been observed continuously by the PCAOB, and the problems are associated with provision of NAS for clients, as well as NAS being provided in the future that could hinder the independence of auditors (Causholli et al., 2014). Usually, NAS activities include high profit margins, and since profits are shared among partners in a partnership, the higher NAS profits would help offset the lower profitability of audit engagements for the audit partners. (Burrows & Black, 1998; Liu & Simunic, 2005). Research indicates that the culture of an office is influenced by the leadership of the audit office (Lennox & Wu, 2018; Pratt & Beaulieu, 1992). Thus, a focus on NAS may influence audit partner behaviour and may also reduce the focus maintained upon audit quality.

4.3 Measurement of Dependent Variables

This study uses two proxies for audit quality as dependent variables. The dependent variables of interest in this study are earning management and audit fees.

4.3.1 Measurement of Earnings Management

By assessing earlier research, the current research makes use of discretionary accruals as the main variable for earnings management estimation. Independent auditors would control discretionary accruals in a strict manner so that the client would be unable to manipulate the earnings reported. The aggregate or total accruals method is implemented for earnings management calculation. In 2005, Kothari et al. presented the performance-modified models, which have been used to state the earnings management magnitude. Kothari et al. modified the Jones model (1995) by using the return on assets from the earlier year. The Kothari model (2005) has been used by various researchers, such as Hamilton et al. (2005), Tucker and Zarowin (2006),

Coulton et al. (2007), and J. Krishnan et al. (2011) for earnings management measurement. This model is preferred over the modified the Jones model (1995) because the discretionary accruals measurement allows for efficient matching through comparison of an organisation's firm-year observations with the same sector's firm-year observations and the prior or actual year's nearest return on assets (Kothari et al., 2005). For the earnings management model, a constant ($\alpha 0$) is included within the research and maintains consistency with Kothari et al.'s (2005) approach to manage the econometric issue of the missing intercept term stated in the Jones model (1995). Kothari et al. (2005) argue that when a constant is provided, further control for unmitigated heteroscedasticity without asset scaling is achieved, thus alleviating problems caused by the absence of a size variable. Furthermore, the modified Kothari et al. (2005) model shows a pattern of nearly zero discretionary accruals, which enhances the Type I error test strength over the null hypothesis dismissal using zero earnings management (Ronen & Yaari, 2008). The performance-adjusted model is considered to be the most efficient performance model because the Jones model (1995) is applied using the present return on assets. This helps attain an efficient performing method with reference to the distance to zero means, and performance is associated with the median of the sample (Kothari et al., 2005). When the return on assets lag is applied, the firm performance is monitored using the Kothari et al. (2005) model. The heteroscedasticity conflict is avoided, and significant misspecification issues associated with implementing the estimation of discretionary accruals using the Jones model (1995) are prevented. Therefore, the estimation of discretionary accruals (DAC_{it}) using Kothari et al. (2005) is indicated by Equation 1 as follows:

$$DAC_{it} = \alpha 0 + \alpha 1(1/TA_{it-1}) + \alpha 2((\Delta SALES_{it}/TA_{it-1}) - (\Delta AR_{it}/TA_{it-1})) + \alpha 3(PPEit/TA_{it-1}) + \alpha 4(ROA_{it-1}) + \varepsilon_{it} \quad [1]$$

Where:

DAC_{it}	=	Total accruals of firm *i* for time period *t* scaled by total assets of firm *i* at the end of time period *t*-1.
TA_{it-1}	=	Total assets of firm *i* at the end of time period *t*-1.
$\Delta SALES_{it}$	=	Change in net sales of firm *i* between time period *t*-1 and time period *t*.
ΔAR_{it}	=	Change in accounts receivables of firm *i* from the beginning of time period *t* until the end of time period *t*.
PPE_{it}	=	Gross book value of the property plant and equipment of firm *i* at the end of time period *t*.
ROA_{it-1}	=	Rate of return on assets of firm *i* for time period *t*-1.
$\alpha 0$	=	Constant.
$\alpha 1, \alpha 2, \alpha 3, \alpha 4$	=	Estimated coefficients.
ε_{it}	=	Error term representing discretionary accruals of firm *i* for time period *t*.

4.3.1.1 Approach Adopted in Calculating Discretionary Accruals

The current research implements the absolute value of discretionary accruals as the measure of earnings management so the focus is maintained upon the magnitude and not the earnings management direction. Earlier research studies show that the measure preferred is the unsigned discretionary accruals magnitude where there is no testing of the specific directional predictions (Francis et al., 1999; Warfield et al., 1995). Earnings manipulations can be either downward or upward in nature (Levitt, 1998). Hence, the current study implements the absolute value for the residual of Equation 1.

In addition, Hribar and Collins (2002) report flaws in determining total accruals using the balancing method. These accruals resemble market features through the balancing method and show errors in power reduction for extracting earnings management within discretionary models. This establishes inferences about earnings management that are inappropriate. The cash flow approach has been applied for the current research for the total accrual calculation, which is consistent with Hribar and Collins (2002). This approach is identified in Equation 2 as follows:

$$TAC_{it} = NI_{it} - CFO_{it} \quad [2]$$

Where:

TAC_{it} = Total accruals of firm *i* for time period *t*.
NI_{it} = Earnings before extraordinary items and discontinued operations of firm *i* in year *t*.
CFO_{it} = Net cash flow from operating activities (taken directly from the statement of cash flows) of firm *i* in year *t*.

4.3.2 Measurement of Auditor Opinion

This study uses the issuance of GCOs ($GC\_OPINION_{it}$) as a second dependent variable. The report of the auditor plays a key role in advising decision-makers of immediate difficulties, and the term "audit failure" typically applies to instances where auditors do not issue GCOs for clients who subsequently apply for bankruptcy (DeFond et al., 2002). Auditors' opinions are used as a proxy for audit quality in this study because auditor independence is considered to have a vital role in the issuing of GCOs (Watts & Zimmerman, 1983). It is expected that auditors are less likely to issue GCOs when their independence is impaired (Wines, 1994). While some scholars report that the provision of NAS is negatively and significantly correlated with issuing GCOs (S. Chen et al., 2010; Wines, 1994), other studies document that there is no association

between NAS and issuing GCOs (Barkess & Simnett, 1994; Craswell, 1999; DeFond et al., 2002; Geiger & Rama, 2003). Thus, the expected correlation between NAS and issuing GCOs is not clear. Following DeFond et al. (2002), Carey and Simnett (2006), and S. Hossain (2013), this study's sample for the audit opinion model is limited to financially distressed firms only, since GCO decisions are most noticeable among financially distressed firms. Consistent with Reynolds and Francis (2000), DeFond et al. (2002), and S. Hossain (2013), this study defines distressed firms as those either reporting a loss or having negative cash flow at year-end.

4.3.3 Measurement of Audit Fees

The audit fee is the third dependent variable in this study. The joint provision of audit services and NAS could provide auditors with more capability to reduce audit fees, since the provision of NAS by the incumbent auditors could reduce audit costs and increase audit production efficiencies (Palmrose, 1986b). This cost reduction could be caused by knowledge externality associated with the provision of NAS as the provision of such services leads to knowledge about a firm's operations, its industry, and so on. (Simunic, 1984). Previous research typically shows that audit fees and NAS are associated positively, although no consensus has been found on why (Barkess & Simnett, 1994; Butterworth & Houghton, 1995; Craswell et al., 1995). One argument for the positive association between audit fees and NAS is that the value of NAS increases when certain firm-specific events occur, which in turn require greater audit work (Ezzamel et al., 2002).[50] Indeed, this study could provide more justification for the positive association between NAS and audit fees since it examines audit quality through a variety of proxies other than audit fees (i.e., the absolute value of discretionary accruals and the issuance of GCOs).

According to Simunic (1980) and Hair et al. (1998), audit fee models usually entail conversion due to problems with linearity. To attain an efficient linear fit, there is a need for a logarithm transformation. It should be carried out with confidence using the associated ordinary least squares (OLS) regression test. Thus, this study uses the natural logarithm of audit fees ($LNAF_{it}$). Another linearity approach is to deflate audit fees based on firm size since larger firms are charged higher audit fees because of their

[50] Chapter 3, Section 3.3.3, identified the justification for the positive association between NAS and audit fees.

size. This controls the cross-sectional differences correlated with larger firms such that the variation of audit fees due to firm size does not affect the analysis. In this study, the logarithm transformation approach is used in the study test, and audit fees scaled by total assets are used as additional tests.

4.4 Measurement of the Independent Variables

The independent variable of interest is NAS. Regulators have raised two concerns about the provision of NAS. First, providing NAS could increase the economic bond, which may contribute to compromising the auditor's objectivity. Second, providing NAS could increase the auditor's financial reliance on substantial clients (Kida 1980). Specifically if the audit fees are lower than NAS, which influences auditor independence in mind and appearance (Bell et al., 2015). Moreover, the literature links the audit independence issue to the provision of NAS. The economic rent generated by the provision of NAS has been argued to be one of the reasons that motivates auditors to rely on their clients (Beck et al., 1988a; Simunic, 1984), and the potential loss of this NAS fee revenue may deteriorate audit independence by allowing substantial clients who pay higher NAS fees to be more selective about their preferred earnings management strategies (Gul et al., 2007; Reynolds & Francis, 2004; Srinidhi & Gul, 2007).

In order to capture this economic rent, this study applies two continuous proxies for NAS. The first continuous proxy is the proportion (ratio) of NAS to total fees paid to the audit firm ($RNONAUD_{it}$).[51] The literature uses $RNONAUD_{it}$ as a proxy for NAS to capture the economic bond created by the provision of NAS (Ashbaugh et al., 2003; DeFond et al., 2002; Frankel et al., 2002). The second continuous proxy used for NAS is the natural logarithm of fees paid for NAS ($LNONAUD_{it}$), which captures the level of the economic bond resulting from the purchase of NAS (H. Huang et al., 2007).

Besides the continuous proxies, this study applies two dichotomous proxies for NAS, which are $HIGHNONAUD_{it}$ and $LOWNONAUD_{it}$. $HIGHNONAUD_{it}$ indicates a high value of NAS, which equals to 1 if a firm's NAS ratio ($RNONAUD_{it}$) is greater than the median, while $LOWNONAUD_{it}$ indicates a low value of NAS, which equals to 1 if a firm's NAS ratio ($RNONAUD_{it}$) is smaller than the median (Francis & Ke,

[51] To avoid analysis errors in the audit fees model, $RNONAUD_{it}$ is scaled by the total assets instead of total fees.

2006). These variables are used in this study to examine the relationship between the magnitude of NAS paid to an audit firm and audit quality.

Finally, to investigate the impact of each type of NAS separately, NAS are categorised based on the type of services into eight categories. Several studies argue that tax services contribute to knowledge spillover (DeSimone et al., 2015; Gleason & Mills, 2011; Paterson & Valencia, 2011; Robinson, 2008). A. Chen et al. (2019) find that the aggregate amount of NAS is not significantly associated with earnings response coefficients, but they report significant results for certain types of NAS, that is, audit-related and tax services. This study uses the natural logarithm of the fees paid for the following eight types of NAS: tax services ($TAXATION_{it}$), accounting services ($ACCOUNTING_{it}$), consulting and advisory services ($ADVISORY_{it}$), IT services (IT_{it}), due diligence services ($DUEDILIGENCE_{it}$), internal audit services ($INTERNALAUDIT_{it}$), legal services ($LEGAL_{it}$), and NAS that are not separately disclosed ($OTHERNAS_{it}$).[52]

4.5 Measurement of Control Variables

The key method of examining an interaction of the chosen NAS proxies with the dependent variables of this study is through multivariate regression analysis. Thus, there are also a variety of control variables in the analysis of this study in order to eliminate cross-sectional influences, as disregard of control variables may improperly cause a null hypothesis to be rejected (Bartov et al., 2000). This study covers a variety of factors related to audit quality that have been used extensively in prior studies, including firm size, firm growth and investment, firm performance, firm leverage, client complexity, total accrual lags of firms, and audit firm size, all of which have demonstrated a major impact on audit quality (Ashbaugh et al., 2003; Beardsley et al., 2021; DeFond et al., 2002; Eilifsen & Knivsflå, 2016; Eshleman & Guo, 2014; Frankel et al., 2002; H. Huang et al., 2007).

4.5.1 Control Variables Used in This Study's Models

The inclusion of non-corporate and corporate governance variables for the regulation of certain firm and audit factors that have the potential to impact this study's

[52] The study excludes audit-related and other assurance services since they are assurance services and essential to audit engagements.

models is regarded as crucial, in accordance with the previous literature that explores the relationship between audit quality and NAS (Ali et al., 2018; Frankel et al., 2002; H. Huang et al., 2007; Meuwissen & Quick, 2019). This inclusion also ensures that this study attains its objective by concentrating on the differences generated by changes in other auditing variables. Lastly, the audit quality factors may be impacted by time differences and within industries. Hence, through dummy variables, this study controls these potential time and industry influences (Barth et al., 2001; J. Myers et al., 2003). Table **4.1** shows all the control variables used in this study.

Table 4.1

Details of Control Variables

Variable	Proxy for	Definition of the variable
$LNASSETS_{it}$	Firm size	Natural logarithm of total assets for firm *i* at the end of time period *t*.
$L1ACCRUAL_{it-1}$	Reversal of accruals over time	Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows of firm *i* at the end of time period *t* scaled by beginning-of-year total assets.
$MKTBK_{it}$	Firm growth	Market-to-book ratio for firm *i* at the end of time period *t* (market value of equity divided by book value).
LEV_{it}	Insolvency risk	Ratio of total debt of firm *i* at the end of time period *t* to the total assets of firm *i* at the end of time period *t*.
$LNTENURE_{it}$	Auditor–client relationship	Natural logarithm of audit firm tenure in years of firm *i* at the end of time period *t*.
$LNAGE_{it}$	Firm risk	Natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period *t*.
CFO_{it-1}	Liquidity risk	Operating cash flow scaled by beginning-of-year total assets.
ROA_{it}	Firm performance	Return on total assets for firm *i* at the end of time period *t* (net income/total assets).
$CHANG\_LEV_{it}$	Insolvency risk	Change in leverage for firm *i* at the end of time period *t*.
$INVESTMENT_{it}$	Liquidity risk	Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period *t*.
$PBANK_{it}$	Probability of bankruptcy	Probability of bankruptcy for firm *i* at the end of time period *t*, as measured by adjusted Zmijewski score: $-4.3 - 4.5 \times$ (net income/total assets) $+ 5.7 \times$ (total debt/total assets) $-0.004 \times$ (current assets/current liabilities).
$PQUAL_{it}$	Persistence effects	1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period *t*-1, and 0 otherwise.

Variable	Proxy for	Definition of the variable
$FINANCING_{it}$	Firm growth	1 if merger is not equal to 1 and number of shares outstanding increased by at least 10% or long-term debt increased by at least 20% for firm *i* at the end of time period *t*, and 0 otherwise.
$INVREC_{it}$	Liquidity risk	Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period *t*.
$LNSEG_{it}$	Client complexity	Natural logarithm of the number of geographic segments for firm *i* at the end of time period *t*.
$LNLAG_{it}$	Audit risk	Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period *t*.
$BIG4_{it}$	Large audit firm	1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise.
EPS_UP_{it}	Firm performance	1 if earnings per share increased over the prior year for firm *i* at the end of time period *t*, and 0 otherwise.
$INITIALYEARS_{it}$	Auditor switch effects	1 if the current year is the auditor's first engagement year for firm *i* at the end of time period *t*, and 0 otherwise.
$LOSS_{it}$	Insolvency risk	1 if firm *i* reports a negative operating profit at the end of time period *t*, and 0 otherwise.
ACE_{it}	Corporate governance	Effectiveness of audit committee for firm *i* at the end of time period *t*, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise.
$INDUSTRY_{it}$	Industry risk	Industry indicator variable to control for industry effects.
$YEAR_{it}$	Fixed-year change effect	Indicator variables controlling for temporal differences of reporting periods for firm-year observations.

4.6 Justification for Inclusion of Control Variables

The literature on audit quality indicates that discretionary accruals, the issuance of GCOs, and audit fee models have included a number of variables related to firm factors to control cross-sectional variations (Boo & Sharma, 2008; DeFond & Jiambalvo, 1994; Gopalan & Jayaraman, 2012; P. Huang et al., 2008; J. Krishnan et al., 2011; H. Lee & Mande, 2005; Maher et al., 1992). Sections 4.6.1 to 4.6.13 below provide a brief explanation for the inclusion of each control variable.

4.6.1 Firm Size

Lobo and Zhou (2006) consider that the operational nature of large firms allows managers to engage in aggressive practices of earnings management. Several scholars have noticed that large corporations have more motivation to manipulate earnings because of increased pressure to report more stable profits and declining future political threats (Das et al., 1998; Manzon, 1992; Pincus & Rajgopal, 2002; Watts & Zimmerman, 1978, 1990). In contrast, some researchers have shown that smaller firms are more likely to be involved in aggressive earnings management practices because policymakers have theoretically overlooked them (Bathke et al., 1989; Holland & Jackson, 2004; P.-S. Koh, 2003; Sánchez-Ballesta & García-Meca, 2007; Simpson 2013; Sloan, 1996). Lee and Mande (2003) indicate that larger firms are associated with more stable accruals.

M. Hossain et al. (2020) argue that the likelihood of issuing GCOs is not driven by firm size as they partitioned their sample based on firm size and found that Type II and Type I errors were associated with both the small-client and large-client samples. However, several scholars have found that auditors are more likely to issue GCOs for smaller firms (Berglund et al., 2018; H. Chung et al., 2019; Dopuch et al., 1987; Geiger & Raghunandan, 2003; McKeown et al., 1991; Mutchler et al., 1997). In addition, larger firms require more time and effort due to the required reviewing of additional data and information. Thus, larger firms are expected to incur higher audit fees (Francis, 1984; Johnstone et al., 2014; Simon, 1995; Simunic, 1980).

This study controls for firm size by using the natural logarithm transformation of total assets ($LNASSETS_{it}$), which is consistent with Becker et al. (1998), Cho et al. (2017), H. Chung et al. (2019), M. Hossain et al. (2020), Lennox and Li (2012), Michas (2011), and Svanström (2013). Although this study estimates that firm size is linked to the audit quality proxies used in this study, the correlation direction for $LNASSETS_{it}$ is uncertain in the earnings management model. However, this study estimates a negative correlation direction for $LNASSETS_{it}$ in the opinion model, while a positive association between audit fees and $LNASSETS_{it}$ is expected.

4.6.2 Firm Growth

Carcello and Nagy (2004) report that pressure to cover a decline in the targeted growth rate may lead managers to become involved in aggressive earnings management. Earlier literature shows that a firm's development pace is influenced by earnings quality control because when there is rapid growth within an environment, a firm is subjected to pressure to achieve or exceed the potential growth rate (Abbott et al., 2000; Abbott et al., 2004; Abdul Rahman & Mohamed Ali, 2006; Beasley, 1996; Dimitropoulos & Asteriou, 2010; P. Huang et al., 2008; Matsumoto, 2002; Skinner & Sloan, 2002). Additionally, according to Choi and Wong (2007), audit services are more in demand for high-growth firms. Thus, it is essential to control for growth effects in the audit fees model.

This study controls for firm growth using the ratio of market to book value of equity ($MKTBK_{it}$), which is consistent with Balsam et al. (2003), Beardsley et al. (2021), Carcello and Nagy (2004), Chi et al. (2011), Collins and Kothari (1989), Hackenbrack and Hogan (2002), Jaggi et al. (2012), Jenkins et al. (2006), Knechel and Sharma (2012), and Kwon and Yi (2018). This study expects a positive sign on the growth ratio variable since the existing literature indicates that the growth rate of a firm is positively correlated with earnings management (Dechow et al., 1998; McNichols, 2000; Pincus & Rajgopal, 2002; Sawicki & Shrestha, 2008; Young, 1999) and with audit fees (Choi & Wong, 2007; Choi, Kim, & Zang, 2010).

Moreover, prior earnings management studies controlled for firm growth by using the obtained capital through either equity or debt markets (Ashbaugh et al., 2003; H. Huang et al., 2007; J. Krishnan et al., 2011). Thus, this study includes a dichotomous variable that scores 1 if the merger is not equal to 1 and the number of shares outstanding increased by at least 10% or long-term debt increased by at least 20% ($FINANCING_{it}$). Since prior studies have reported a positive correlation between financing and discretionary accruals (Frankel et al., 2002; H. Huang et al., 2007; J. Krishnan et al., 2011), this study predicts $FINANCING_{it}$ to be positively correlated with the absolute value of discretionary accruals.

4.6.3 Firm Performance

Low-profit-making firms would be correlated with greater aggressive earnings management behaviour, based on the argument that these firms require outside funding to alleviate the pressure of cash flow (Ashari et al., 1994; White, 1970). However, some prior studies indicate that firms with higher profits show greater earnings manipulation practices as these firms are subject to more external competition to reach or exceed income expectations compared to loss-making firms (Degeorge et al., 1999; Hayn, 1995). In addition, prior studies report an association between the issuance of GCOs and low-profit-making firms (Altman & McGough, 1974; Berglund et al., 2018; Dopuch et al., 1987; Kida, 1980; Mutchler, 1984; Raghunandan & Rama, 1995; Robinson, 2008).

The return on assets (ROA_{it}) is used in this study to control for firm performance, which is consistent with Beardsley et al. (2021), Dao et al. (2012), Eshleman and Guo (2014), and Kwon and Yi (2018). The predicted sign for the return on assets in this study is unclear for the earnings management and audit fee models, but it is expected to be negative in the opinion model. This study also controls for performance in the audit fees model by using a dichotomous variable that scores 1 if earnings per share increased over the prior year (EPS_UP_{it}), which is consistent with Knechel and Sharma (2012). The predicted sign for EPS_UP_{it} is negative since better-performing firms generally have fewer instances of financial misreporting, hence are charged lower fees.

4.6.4 Firm Risks

Jiang et al. (2008) indicate that an increase in firm risk has fluctuating effects on earnings management practices. Several researchers have shown that highly leveraged firms avoid breaches of the debt covenant by manipulating the earnings upwards (Dechow & Skinner, 2000; DeFond & Jiambalvo, 1994; Efendi et al., 2007; Elayan et al., 2008; Erickson et al., 2004; Press & Weintrop, 1990; Watts & Zimmerman, 1978). In addition, if a client's risks are high, it is a sign that financial issues may be present. Therefore, it may also be possible that to enhance the image of the firm, the financial information would be manipulated. Also, several studies document that auditors are more likely to issue GCOs for risky clients (Berglund et al., 2018; H. Chung et al., 2019; DeFond et al., 2002; Koh & Killough, 1990; Lennox, 1999; Raghunandan & Rama, 1995; Robinson, 2008). Earlier research studies indicate that organisations with

high leverage need to pay a premium on their audit fees (Bryan & Mason, 2016; Francis et al., 2005). Additional time may be needed by the auditor to exert efforts to reduce the audit risks related to unfortunate financial conditions of the client, or, to compensate for the risks, an audit fee premium may be asked (G. Krishnan & Yu, 2011; Shan et al., 2015; Taylor & Simon, 1999).

Audit quality models continually control for insolvency and liquidity risks by using variables such as firm leverage, cash from operations, firm investment, and reported losses (Ashbaugh et al., 2003; Cho et al., 2017; Frankel et al., 2002; H. Huang et al., 2007; Knechel & Sharma, 2012; Svanström, 2013). The cash from operations provides a clearer description of a company's ability to generate operating cash flow for debt, equity, and the purchase of assets (Hastuti et al., 2018). Thus, operating cash flow offers important information for one cycle on sales and expenses in a firm. This study controls for insolvency risk by using the ratio of total debt to total assets at year-end (LEV_{it}) and change in leverage from the previous period ($CHANG\_LEV_{it}$), while the liquidity risks are controlled by using cash from operations scaled by beginning-of-year total assets (CFO_{it-1}), short-term and long-term investment securities ($INVESTMENT_{it}$), and inventory plus accounts receivable divided by total assets at fiscal year-end ($INVREC_{it}$). Following essential studies (Ashbaugh et al., 2003; Cho et al., 2017; Frankel et al., 2002; S. Hossain, 2013; H. Huang et al., 2007; Knechel & Sharma, 2012), this study expects that LEV_{it} and $CHANG\_LEV_{it}$ will be positively correlated with earnings management, GCOs, and audit fees, while the liquidity proxies will have negative coefficients in the earnings management and GCO models.[53] In addition, consistent with prior studies (DeFond et al., 2002; Hay & Knechel, 2010; Kwon & Yi, 2018; Lin & Liu, 2013; Miah et al., 2020), this study expects that $INVREC_{it}$ will be positively correlated with audit fees.

This study also measures firm risk by using firm age ($LNAGE_{it}$)[54] and a dichotomous variable that scores 1 when firms report a negative operating income ($LOSS_{it}$). Consistent with prior studies (Ashbaugh et al., 2003; H. Chung et al., 2019; S. Hossain, 2013; Knechel & Sharma, 2012; Lennox & Li, 2012; Michas, 2011;

[53] $CHANG\_LEV_{it}$ is only included in the opinion model since the change in leverage could impact auditor judgement.
[54] According to Carey and Simnett (2006), auditors consider firm age when they report their opinions because financial difficulties are linked to how long firms have been listed in the market.

Robinson, 2008), this study expects that $LOSS_{it}$ and $LNAGE_{it}$ will be positively correlated with earnings management and GCOs.

4.6.5 Total Accruals

The literature indicates that a higher level of accruals will reduce the ability of managers to manipulate earnings since accrual accounts predict future economic gains and ultimately have to be reversed (Ashbaugh et al., 2003; Dechow, 1994; Dechow, Sloan, & Sweeney, 1995; J. Krishnan et al., 2011; Sloan, 1996; Teoh et al., 1998). This study controls for total accruals by including the last year's total current accruals ($L1ACCRUAL_{it-1}$) to capture the reversal of accruals over time, which is consistent with Ashbaugh et al. (2003) and H. Huang et al. (2007). This study predicts a negative coefficient between total accruals and the absolute value of discretionary accruals.

4.6.6 Client Complexity

This study controls for client complexity by using the natural logarithm of the number of geographic segments ($LSEG_{it}$), which is consistent with Eshleman and Guo (2014). This study includes the client complexity variable since an increase in firm complexity leads to more complex tasks, which in effect increases audit efforts needed. Thus, higher client complexity contributes to higher audit fees. Consistent with prior studies that report a positive correlation between the reported number of segments and audit fees (H.-W. Huang et al., 2009; Lin & Liu, 2013; Wang & Zhou, 2012), this study predicts that the natural logarithm of audit fees will be positively correlated with the number of geographic segments.

4.6.7 Auditor Size

Prior studies indicate that larger audit firms are more motivated to produce better audit quality due to litigation exposure and brand name reputation (Becker et al., 1998; Francis & Schipper, 1999; Gul et al., 2002; P.-S. Koh, 2003; G. Krishnan, 2003). This study controls for audit firm size by using the $BIG4_{it}$ dichotomous variable, which scores 1 when a client firm is audited by one of the Big4 audit firms. In accordance with prior studies (Beardsley et al., 2021; Becker et al., 1998; Dao et al., 2012; Frankel et al., 2002; H. Huang et al., 2007), this study predicts a negative correlation between

$BIG4_{it}$ and earnings management, while it predicts $BIG4_{it}$ to have a positive coefficient in the opinion and audit fee models.

4.6.8 Auditor Tenure

While practitioners claim that poor audit quality could be present during the early years of audit engagement because of the auditor's lack of specific knowledge of their client, regulators are concerned about the impact of long tenure on auditor independence (Carcello & Nagy, 2004). Following DeFond et al. (2002), Frankel et al. (2002), Knechel and Sharma (2012), and Svanström (2013), this study controls comprehensively for auditor tenure by using the natural logarithm of the length of time that the auditor has been the principal auditor ($LNTENURE_{it}$) and a dichotomous variable where the audit engagement is auditor's first engagement year ($INITIALYEARS_{it}$). Although this study uses auditor tenure as a control variable, the predicted sign for the correlation is unclear.[55]

4.6.9 Audit Report Lag

Knechel and Sharma (2012) indicate that audit report lag could be used as a proxy for the quantity or efficiency variable that represents the concept of knowledge spillover. This study measures audit report lag by using the natural logarithm of the number of days between the fiscal year-end date and the initial audit report date ($LNLAG_{it}$). Consistent with Ezzamel et al. (1996), O'Sullivan (2000), and Hay et al. (2006), this study estimates that $LNLAG_{it}$ is correlated positively with audit fees.

4.6.10 Audit Committee Effectiveness

Ali et al. (2018) investigated the impact of audit committee characteristics (namely, audit committee independence, diligence, size, financial expertise, and accounting expertise by the chair) on audit quality when NAS are provided. Their findings indicate that audit committee effectiveness has a significant impact on audit quality as an effective audit committee can keep auditors responsible. The literature indicates that audit committees play a significant role in enhancing audit independence (Abbott et al., 2004; Carcello et al., 2002; S. Hossain et al., 2016; Zaman et al., 2011).

[55] The predicted sign for the correlation is unclear because the literature provides mixed evidence about the impact of auditor tenure, which was discussed previously in Chapter 2.

Klein (2002) investigated the impact of audit committee independence on earnings management by using outside directors as proxy for the audit committee and found that an independent audit committee was negatively associated with abnormal accruals.

Following the prior research (Ali et al., 2018; Zaman et al., 2011), this study controls for several audit committee characteristics (namely, audit committee independence, diligence, size, and financial expertise). The audit committee characteristics are controlled by using a dichotomous variable (ACE_{it}) that equals 1 if the audit committee meets all of the following criteria: (a) has a majority of independent directors, (b) has a member with financial expertise, (c) meets at least four times during the financial year, and (d) consists of at least three members. If one or more of these criteria are not met, the ACE_{it} variable equals 0. Consistent with the literature, this study predicts the ACE_{it} to have a negative coefficient in the earnings management model (Baxter & Cotter, 2009; Hutchinson et al., 2008) and the opinion model (Alderman & Jollineau, 2020; Carcello & Neal, 2003; Wu et al., 2016), and a positive coefficient in the audit fees model (Ali et al., 2018).

4.6.11 Probability of Bankruptcy and Previous Opinion

Prior studies indicate that the issuance of GCOs is affected by previous auditors' opinions, and several studies suggest that there is a persistence in the issuing of GCOs (H. Chung et al., 2019; Lennox, 2000; Mutchler, 1984). Thus, this study controls for the previous judgement impact by using a dichotomous variable ($PQUAL_{it}$) that equals 1 if the auditor issued an opinion in the prior year other than an unqualified one. In addition, prior studies find that firms with a higher probability of bankruptcy are more likely to receive GCOs (Berglund et al., 2018; Blay et al., 2011; Callaghan et al., 2009; Ratzinger-Sakel, 2013; Read, 2015). Thus, this study includes the probability of bankruptcy as measured by the adjusted Zmijewski score[56] ($PBANK_{it}$) in the opinion model. Consistent with the literature, this study predicts that GCOs will be positively correlated with $PQUAL_{it}$ (Carson et al., 2019; H. Chung et al., 2019; Foster & Shastri, 2016) and negatively with $PBANK_{it}$ (Callaghan et al., 2009; Carson et al., 2019; Geiger & Rama, 2003).

[56] Zmijewski score = −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities).

4.6.12 Industry Effects

Industry effects ($INDUSTRY_{it}$) are controlled in this study because the analysis could be affected by a concentration of observations on small industries. The $\Sigma INDUSTRY_{it}$ is a dichotomous variable given a value of 1 if the firm *i* in the time period *t* is from a particular industry classification; otherwise, the variable $INDUSTRY_{it}$ is given a value of 0. The industry classifications in this study comprise the following 10 sectors: energy, materials, industrials, consumer discretionary, consumer staples, health care, information technology, telecommunication services, real estate, and utilities. This study follows the Australia and New Zealand Standard Industrial Classification (ANZSIC) code for industry classification. The ANZSIC system classifies entities based on their main business activity.

4.6.13 Year Effects

This study controls for fixed year effects by using a year dummy variable ($YEAR_{it}$) that monitors temporal reporting period differences for the firm-year observations. This study uses a 5-year observation window comprising calendar years 2014, 2015, 2016, 2017, and 2018.

4.7 Regression Models

To test this study's hypotheses, pooled OLS multiple regression was applied to analyse the association between NAS and audit quality. The benefit of using this multivariate technique is that it makes predicting variations in the sample behaviour more robust (Greene, 2007). Pooled analysis also provides a basic technique for determining how sensitive the findings are to various components (Beaver, 1998).[57]

This study uses the following three proxies as dependent variables for measuring audit quality: the absolute value of discretionary accruals ($KOTHA\text{-}ABDAC_{it}$), the issuance of a GCO ($GC\_OPINION_{it}$), and the natural logarithm of audit fees ($LNAF_{it}$). The regressions for each of these are identified in the following equations:

[57] To confirm the OLS regression results for the auditor's opinion model, we also ran logistic regression with a binary outcome variable since the dependent variable is a dummy variable, which is consistent with prior GCO studies (DeFond et al., 2002; Hay & Knechel, 2010; Kwon & Yi, 2018; Lin & Liu, 2013; Miah et al., 2020).

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1FEES_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBKit + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11}FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon_{it} \quad [3]$$

$$GC\_OPINION_{it} = B_0 + B_1FEES_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9PBANK + B_{10}BIG4_{it} + B_{11}LOSS_{it} B_{12}PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon_{it} \quad [4]$$

$$LNAF_{it} = B_0 + B_1FEES_{it} + B_2LNASSETS_{it} + B_3MKTBK_{it} + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon_{it} \quad [5]$$

Where:

$KOTHA\text{-}ABDAC_{it}$	=	Absolute value of discretionary accruals for firm *i* at the end of time period *t* calculated using the performance-adjusted Kothari et al. (2005) model.
$GC\_OPINION_{it}$	=	1 if an auditor issued a GCO for firm *i* at the end of time period *t*, and 0 otherwise.
$LNAF_{it}$	=	Natural logarithm of audit fees paid by firm *i* at the end of time period *t*.
$FEES_{it}$	=	Non-audit services proxies.
$LNASSETS_{it}$	=	Natural logarithm of total assets of firm *i* at the end of time period *t*.
$L1ACCRUAL_{it-1}$	=	Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows of firm *i* at the end of time period *t* scaled by beginning-of-year total assets.
$MKTBK_{it}$	=	Market-to-book ratio for firm *i* at the end of time period *t* (market value of equity divided by book value).
LEV_{it}	=	Ratio of total debt of firm *i* at the end of time period *t* to the total assets of firm *i* at the end of time period *t*.
$LNTENURE_{it}$	=	Natural logarithm of audit firm tenure in years of firm *i* at the end of time period *t*.
$LNAGE_{it}$	=	Natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period *t*.
CFO_{it-1}	=	Operating cash flow scaled by beginning-of-year total assets.
ROA_{it}	=	Return on total assets for firm *i* at the end of time period *t* (net income/total assets).
$BIG4_{it}$	=	1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise.
$FINANCING_{it}$	=	1 if merger is not equal to 1 and number of shares outstanding increased by at least 10% or long-term debt increased by at least 20% for firm *i* at the end of time period *t*, and 0 otherwise.
$LOSS_{it}$	=	1 if firm *i* reports a negative operating profit at the end of time period *t*, and 0 otherwise.
ACE_{it}	=	Effectiveness of audit committee for firm *i* at the end of time period *t*, which equals 1 if the audit committee has a majority of independent

		directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise.
$CHANG\_LEV_{it}$	=	Change in leverage for firm *i* at the end of time period *t*.
$INVESTMENT_{it}$	=	Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period *t*.
$PBANK_{it}$	=	Probability of bankruptcy for firm *i* at the end of time period *t*, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities).
$PQUAL_{it}$	=	1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period *t-1*, and 0 otherwise.
$INVREC_{it}$	=	Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period *t*.
$LSEG_{it}$	=	Natural logarithm of the number of geographic segments for firm *i* at the end of time period *t*.
$LNLAG_{it}$	=	Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period *t*.
EPS_UP_{it}	=	1 if earnings per share increased over the prior year for firm *i* at the end of time period *t*, and 0 otherwise.
$INITIALYEARS_{it}$	=	1 if it is the initial 2 years of the auditor's engagement for firm *i* at the end of time period *t*, and 0 otherwise.
$\Sigma INDUSTRY_{it}$	=	Industry indicator variable to control for industry effects.
$\Sigma YEAR_{it}$	=	Indicator variables controlling for temporal differences of reporting periods for firm-year observations.

The regression indicated in Equation 3 tests this study's hypothesis by regressing the independent and control variables against the earnings management measured by the absolute value of discretionary accruals calculated using the performance-adjusted model (dependent variable). The regression indicated in Equation 4 tests this study's hypothesis by regressing the NAS proxies and control variables against auditor opinion measured by the issuance of a GCO. Finally, the regression indicated in Equation 5 tests this study's hypothesis by regressing the NAS proxies and control variables against the natural logarithm of audit fees (dependent variable). For testing the impact of NAS proxies and providing comparable findings using different fee metrics, the variable $FEES_{it}$ in each equation is measured by the different NAS proxies that were discussed in Section 4.4.

4.8 Sensitivity Analysis

This study performs several sensitivity tests to ensure the robustness of the results. Thus, the study considers a number of robustness checks to address the econometric issues in which the dependent variables are being measured by different measurements. An alternative measure of discretionary accruals is estimated using the cross-sectional version of Dechow, Sloan, and Sweeney's (1995) modified Jones

model. Also, as an alternative measure for auditor opinion, firms that received GCOs for the first time are excluded. Moreover, as an alternative measure for audit fees, this study scaled the audit fees by total assets to control for cross-sectional differences associated with firm size. Finally, this study measures NAS using an additional measurement, which is the abnormal value of NAS ($ABNONAUDIT_{it}$) and the natural logarithm of total fees paid to the auditor ($LNTOTFEES_{it}$). The study uses $ABNONAUDIT_{it}$ since the use of actual fees as a measurement for NAS could lead to non-trivial measurement errors in the regression. This study uses the $LNTOTFEES_{it}$ since NAS and audit fees can jointly be determined (Choi, Kim, & Zang, 2010). These alternative measures are discussed in sections 7.2 and 7.3.

In addition, the study analysis is reperformed after partitioning the sample in several alternative ways. The study is first partitioned based on firm-related factors such as firm size and growth as these factors have a major impact on audit quality (Caramanis & Spathis, 2006; Carcello & Nagy, 2004; Collins et al., 2016). The pooled sample is partitioned based on total assets with respect to size (Whisenant et al., 2003), while it is partitioned for growth based on the ratio of market-to-book value (Beekes et al., 2004; Lara et al. 2005). Such partitions are carried out to evaluate whether NAS proxies and audit quality proxies differ with the size and growth prospects of a firm. Moreover, this study partitions the sample based on auditor size ($BIG4_{it}$) since the literature indicates a tight link between big audit firms and audit quality. The study's sample is split into firms that are audited by big audit firms ($BIG4_{it}$) and firms that are audited by audit firms other than $BIG4_{it}$, then the regressions are re-performed. The sample is further partitioned by the length of auditor tenure since prior studies of audit quality indicate that the length of auditor tenure can potentially impact the audit quality (Bell et al., 2015; Read & Yezegel, 2016; Singh et al., 2019). Furthermore, the sample of this study is partitioned based on audit committee characteristics since audit quality and auditor independence could be enhanced by an effective audit committee. Finally, to ensure that this study's sample is not driven by a certain industry, the sample is partitioned based on the biggest industry, which is the material industry. The results from these partitioning tests are presented and discussed in Chapter 7, sections 7.4 to 7.7.

4.9 Chapter Summary

Chapter 4 has outlined the procedure for testing the hypotheses of this study. First, the sample, source documents, and time period selected for this study were justified. Importantly, the chapter discussed the measures used for the dependent variables (audit quality proxies) and independent variables (NAS proxies), as well as the major analytical tests used in the study, including the study tests and the additional tests.

The descriptive statistics and specific univariate analyses of the sample will be presented and discussed in Chapter 5. First, information about data cleaning will be given and descriptive statistics provided for the sample using measures of mean, standard deviation, and 25th percentiles, median, and 75th percentiles. Then, a correlation matrix with Pearson-specified coefficients will be shown for the continuous as well as the dichotomous variables.

Chapter 5: Descriptive Statistics and Univariate Analysis

5.1 Chapter Overview

The data collection and selection process were detailed in Chapter 4. Measures were also addressed for the dependent variables of earnings management, audit opinion, and audit fees, and justifications were also provided for the inclusion of the control variables. Finally, Chapter 4 comprehensively explained the statistical tests and models used in this study.

Chapter 5 presents and analyses the descriptive statistics for the variables included in this study. The chapter provides an explanation of the sample collection process and industry breakdowns in the initial sample. Then, the descriptive information for all models used in this study is reviewed in depth. Finally, a correlation analysis is given before a summary of the chapter is provided.

5.2 Cleaning of the Data

The data for this study were collected from annual reports and three databases, namely, the SIRCA database, Morningstar DatAnalysis Premium, and Connect 4 Pty Ltd. NAS values and audit fees were obtained manually from the annual reports. Specifically, the annual reports for all sample firms were reviewed, and the amounts of the fees paid to auditors (i.e., the auditors' remuneration) were collected from the notes to the financial statements.[58] The rest of the audit and governing variables, such as audit report lag or audit committee information, were obtained from SIRCA and Connect 4 Pty Ltd, and the finance-based variables, such as return on assets or financing, were obtained from Morningstar DatAnalysis Premium.[59]

Data validation was conducted for each of the variables used in this study before undertaking the correlation analysis. These checks included data entry accuracy and missing values. In addition, all variables used in this study were checked for normality by assessing the variables' skewness and kurtosis. In accordance with prior studies (J. Krishnan et al., 2011; Stubben, 2010), all variables were winsorised at the 1% and

[58] The auditors' remuneration includes the disaggregated values for NAS.
[59] To avoid data collection errors when merging data between SIRCA and Morningstar, the sample firms were coded carefully.

99% level to eliminate the influence of outliers, except the dummy variables, the absolute value of discretionary accruals ($ABSDAC_{it}$) and abnormal NAS ($ABNAS_{it}$). The reason for this winsorisation is that outliers may have a significant effect on statistical outcomes, which can contribute to inaccurate interpretations (Stevens, 1984).

5.3 Basic Sample Descriptive Statistics

5.3.1 Sample Selection Process and Industry Breakdown

This study's sample includes firm-year observations for all ASX-listed firms from the years 2014 to 2018, excluding some firms and observations as identified in Table 5.1. Table 5.1 presents the sample selection for all three models in this study. Following prior studies, financial institutions, trust and investment companies were excluded as unique accounting regulations govern the financial statements of these companies (Givoly & Hayn, 2000; Givoly et al., 2007; Ruddock et al., 2006). Also, foreign-incorporated firms were excluded from the final usable sample since they may not maintain similar accounting standards to Australian firms (Clifford & Evans, 1997). A further 166 firm-year observations were excluded due to missing values for essential variables like total assets and market capitalisation. Moreover, non-distressed firms were excluded from the opinion model sample (DeFond et al., 2002; Reynolds & Francis, 2000). This study defines distressed firms as firms reporting a loss or negative cash flow at year-end. Altogether, as indicated in Table 5.1, the total sample of firm-year observations from 2014 to 2018 was 7,779 for the earnings management and audit fees models and 5,476 for the opinion model.

Table 5.1

Sample Selection of Firm-Year Observations for the Study's Models

Firm type	Opinion model	Earnings management and audit fees models
Firm listed on the ASX from 2014 to 2018	9713	9713
Exclusions:		
Financial institutions	1029	1029
Trust and investment	525	525
Foreign-incorporated firms	214	214
Firms with missing values	166	166
Non-distressed firms	2303	
Final usable sample	5476	7779

Note. ASX = Australian Securities Exchange.

Table 5.2 shows the industry breakdown of the sample firms across the observation period according to the 10 industry sectors identified in Section 4.6.12. Panel A displays the breakdown for the earnings management and audit fees models, while Panel B displays the breakdown for the opinion model. Panel A shows that there are 1,417 firms for year 2014, 1,476 firms for year 2015, 1,561 firms for year 2016, 1,656 firms for year 2017, and 1,669 firms for year 2018. The biggest sector observed in the Panel A study sample is materials (39%), representing more than a third of the sample. Firms classified in the energy and information technology sectors make up 21% of the sample observations. Thus, 60% of the sample is derived from these three sectors. Of the remaining 40% of the sample, the health care sector represents 9% and the industrial and consumer discretionary sectors each represent 8%. Communication services and real estate represent 5% each, while consumer staples represents 4%. Finally, the sector least represented is utilities, with only 2% of the sample being from this sector.

Panel B of Table 5.2 displays the industry breakdown for the sample of distressed firms used for the opinion model in this study. Compared with Panel A, Panel B shows a notable increase by 9% in the materials sector, with 48% of the distressed firms sampled in the materials sector. Also, the percentage of total firm-year observations for the energy sector is higher than the one reported in Panel A at 14% of the total distressed firms sample compared with 11% of the sample for the other two models. Overall, this study sample reflects the Australian market as a whole since every industry that requires adequate insights in its corresponding multivariate analysis to monitor its industrial impact is proportionately representative.

Table 5.2

Breakdown of Sample Firm-Year Observations by Industry and Year

Panel A: Industry breakdown by year for earnings management and audit fees models

	2014		2015		2016		2017		2018		Total	
ASX industry	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Materials	582	41	585	40	603	39	637	38	638	38	3045	39
Energy	165	12	166	11	167	11	168	10	167	10	833	11
Information technology	131	9	145	10	167	11	185	11	185	11	813	10
Health care	122	9	133	9	144	9	152	9	159	10	710	9
Industrials	117	8	123	8	130	8	140	8	141	8	651	8
Consumer discretionary	105	7	116	8	122	8	128	8	130	8	601	8
Communication services	65	5	70	5	75	5	79	5	78	5	367	5
Real estate	67	5	70	5	73	5	78	5	80	5	368	5
Consumer staples	43	3	48	3	55	4	63	4	65	4	274	4
Utilities	20	1	20	1	25	2	26	2	26	2	117	2
Total	1417		1476		1561		1656		1669		7779	

Panel B: Industry breakdown by year for opinion model

	2014		2015		2016		2017		2018		Total	
ASX industry	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Materials	513	51	518	49	521	48	546	47	554	47	2652	48
Energy	145	14	150	14	158	15	151	13	145	12	749	14
Information technology	95	9	106	10	113	10	128	11	134	11	576	11
Health care	81	8	87	8	99	9	111	10	112	9	490	9
Industrials	60	6	56	5	64	6	69	6	73	6	322	6
Consumer discretionary	33	3	36	3	41	4	45	4	46	4	201	4
Communication services	32	3	37	4	38	3	41	4	45	4	193	4
Real estate	22	2	27	3	25	2	25	2	28	2	127	2
Consumer staples	20	2	22	2	18	2	24	2	33	3	117	2
Utilities	8	1	9	1	10	1	10	1	12	1	49	1
Total	1009		1048		1087		1150		1182		5476	

Note. ASX = Australian Securities Exchange.

5.3.2 Descriptive Statistics: Dependent Variables

Table 5.3 reports the descriptive statistics for the dependent variables in this study. The table shows that the natural logarithm of audit fees ($LNAF_{it}$) has a mean (median) of 4.92 (4.77) with a standard deviation of 0.54, which is comparable with relevant prior studies (Castillo-Merino et al., 2020; Lim & Tan, 2008). Panel A also reports the first and third quartiles of $LNAF_{it}$ to be 4.52 and 5.23, respectively. In addition, the figures indicate that the provision of NAS is barely less profitable than audit services for Australian auditors since the mean of $LNAF_{it}$ (4.92) is narrowly higher than the mean of the natural logarithm of NAS, $LNONAUD_{it}$ (4.63). Also, Table 5.3 indicates the absolute value of discretionary accruals calculated using the performance-adjusted Kothari model ($KOTHARI\text{-}ABDAC_{it}$) has a mean of 0.18 with a standard deviation of 0.47, while the absolute value of discretionary accruals calculated using the modified Jones model ($MJ\text{-}ABDAC_{it}$) has a mean of 0.19 with a standard deviation of 0.48. These results reflect the average magnitude of earnings management to be about 18% of total assets in Australian listed companies, which is fairly substantial (Hall et al., 2013) and is comparable with prior Australian studies (Abu et al., 2020; Singh et al., 2019). This also indicates that Australian firms exercise slightly higher earnings management than US firms. For example, Reynolds et al. (2004) investigated whether NAS impaired auditor objectivity using US data and reported a mean of 0.1094 for the absolute value of discretionary accruals. However, in an Australian study, Davidson et al. (2005) reported a mean of 0.156 for the absolute value of discretionary accruals. Table 5.3 also reports the first and third quartiles of $KOTHARI\text{-}ABDAC_{it}$ to be 0.03 and 0.15, which is comparable with an Australian study that reported the first and third quartiles of $KOTHARI\text{-}ABDAC_{it}$ to be 0.034 and 0.168, respectively (Singh et al., 2019). Finally, Table 5.3 reports the descriptive statistics for GCOs ($GC\_OPINION_{it}$) for distressed firms. The table indicates $GC\_OPINION_{it}$ to have a mean of 0.32, suggesting that 32% of the total distressed firms sample (5,547) received a GCO. This finding is comparable to the mean of GCOs reported in prior Australian studies. For instance, Carson et al. (2019) reported a mean of 0.30 for GCOs in the sample period from 2005 to 2014. However, S. Hossain (2013) reported a mean of 0.19 for GCOs in a sample period from 2006 to 2007. That is lower than the mean reported in this study and in Carson et al. (2019), which implies there has been an increase in the number of GCOs in the Australian market.

Table 5.3

Descriptive Statistics – Dependent Variables

Variable	Mean	SD	25th percentile	Median	75th percentile
AF_{it}	$260,249	$688,526	$33,000	$58,807	$170,000
$LNAF_{it}$	4.92	0.54	4.52	4.77	5.23
$KOTHA\text{-}ABDAC_{it}$	0.18	0.47	0.03	0.07	0.15
$MJ\text{-}ABDAC_{it}$	0.19	0.48	0.04	0.08	0.16
$GC\_OPINION_{it}$	0.32	0.47	0	0	1

Note. AF_{it} = audit fees for firm *i* at the end of time period *t*; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period *t*; $KOTHA\text{-}ABDAC_{it}$ = absolute value of discretionary accruals for firm *i* at the end of time period *t* calculated using the performance-adjusted Kothari et al. (2005) model; $MJ\text{-}ABDAC_{it}$ = absolute value of discretionary accruals for firm *i* at the end of time period *t* calculated using the modified Jones (1995) model; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period *t*, and 0 otherwise.

5.3.3 Descriptive Statistics: Independent Variables

Table 5.4 Panel A and Panel B report the descriptive statistics for the independent variables in this study's full sample, which are used in the earnings management and audit fees models. Panel A shows that the total NAS fees ($NONAUDIT_{it}$) has a mean of $289,410, which is higher than the mean of audit fees (AF_{it}) of $260,249 shown in Table 5.3. Further, Panel A of Table 5.4 shows the ratio of NAS fees to total fees ($RNONAUDIT_{it}$) has a mean of 0.28 and a range from 0.12 at the 25th percentile to 0.39 at the 75th percentile. Prior Australian studies demonstrate that the ratio of NAS fees to total fees in Australia is lower than in the US. For example, H. Huang et al. (2007) used US data and reported $RNONAUDIT_{it}$ to have a mean of 0.26 with a standard deviation of 0.19. On the other hand, Fargher and Liwei (2008) used Australian data and reported $RNONAUDIT_{it}$ to have a mean of 0.06 with a standard deviation of 0.16. However, the findings indicate that $RNONAUDIT_{it}$, with a mean of 0.28, is significantly higher in comparison with prior Australian studies.[60] The natural logarithm of NAS ($LNONAUDIT_{it}$) has a mean of 4.63, which indicates the magnitude of NAS is comparable with prior essential studies (S. Hossain 2013; Singh et al., 2019). The abnormal value of NAS ($ABNONAUDIT_{it}$) has a mean (standard deviation) of 0.21 (3.93), and ranges in the study sample from -3.08 at the 25th percentile to 3.95 at the 75th percentile. These descriptive statistics for

[60] This is expected since this study's core objective is to investigate the recent increase in NAS.

ABNONAUDIT$_{it}$ are comparable with prior studies. For example, S. Hossain (2013) reported descriptive statistics for *ABNONAUDIT*$_{it}$ with a mean of 0.225 and a standard deviation of 0.418. Furthermore, Table 5.4 Panel A reports the descriptive values for the eight types of NAS, while Panel B reports the descriptive statistics for the dichotomous variables for these services as well as the high values of NAS (*HIGHNONAUDIT*$_{it}$) and the low values of NAS (*LOWNONAUDIT*$_{it}$). The highest mean value reported in Panel A is for *ADVISORY*$_{it}$ fees (*M* = $735,790). Panel B shows that the highest demand for NAS was for *TAXATION*$_{it}$ services, since 34.7% of the study sample purchased tax services. The *IT*$_{it}$ and *INTERNALAUDIT*$_{it}$ were the least NAS services provided since they were purchased by less than 1% of this study's sample. Panel B indicates that 42.8% of the sample-firms pay higher than the median of *RNONAUDIT*$_{it}$ to purchase NAS, while 57.8% pay lower than this median.

Table 5.5 reports the descriptive statistics for the independent variables used in the opinion model. Panel A shows that *NONAUDIT*$_{it}$ in distressed firms has a mean of $70,288, which is much lower than the mean reported for the full sample. This finding suggests that the demand for purchasing NAS decreases in distressed firms. Also, Table 5.5 Panel A reports a mean of 0.11 for *ABNONAUDIT*$_{it}$, which is much lower than the mean reported in Table **5.4**.

Moreover, the values for the type of NAS are notably lower for distressed firms. For instance, Table 5.5 Panel A reports a mean of $43,397 for *TAXATION*$_{it}$, which is much lower than the one reported for the full sample (*M* = $135,363).[61] Also, Table 5.5 Panel A reports a mean of $32,707 for *IT*$_{it}$, which is much lower than the one reported for the full sample (*M* = $139,306). These findings could imply that distressed firms require fewer NAS or that they are unable to purchase high-value NAS.

[61] It is expected that distressed firms purchase fewer tax services since these firms report losses or negative cash flows.

Table 5.4

Descriptive Statistics – Independent Variables for Full Sample

Panel A: Continuous variables					
Variable	Mean	SD	25th percentile	Median	75th percentile
$NONAUDIT_{it}$	$289,410	$1,092,016	$11,036	$34,840	$148,500
$RNONAUDIT_{it}$	0.28	0.19	0.12	0.23	0.39
$LNONAUDIT_{it}$	4.63	0.80	4.04	4.54	5.17
$ABNONAUDIT_{it}$	0.21	0.39	-3.08	-1.05	3.95
$TAXATION_{it}$	$135,363	$422,510	$9,590	$27,915	$95,095
$ACCOUNTING_{it}$	$109,729	$231,536	$10,000	$27,280	$98,931
$ADVISORY_{it}$	$735,790	$4,954,674	$7,353	$32,354	$138,584
IT_{it}	$139,306	$276,858	$14,935	$22,678	$128,000
$DUEDILIGENCE_{it}$	$393,056	$1,479,251	$18,103	$75,022	$215,750
$INTERNALAUDIT_{it}$	$45,472	$84,883	$11,559	$14,584	$21,272
$LEGAL_{it}$	$454,037	$1,134,288	$15,820	$39,147	$226,627
$OTHERNAS_{it}$	$99,855	$219,096	$7,357	$23,500	$87,355

Panel B: Dichotomous variables				
Variable	Frequency of 1's	Frequency of 0's	Percentage of 1's	Percentage of 0's
$HIGHNONAUDIT_{it}$	2333	5446	42.8%	57.2%
$LOWNONAUDIT_{it}$	5446	2333	57.2%	42.8%
$TAXATION_{it}$	2699	5080	34.7%	65.3%
$ACCOUNTING_{it}$	212	7567	2.7%	97.3%
$ADVISORY_{it}$	607	7172	7.8%	92.2%
IT_{it}	29	7750	0.4%	99.6%
$DUEDILIGENCE_{it}$	258	7521	3.3%	96.7%
$INTERNALAUDIT_{it}$	36	7743	0.5%	99.5%
$LEGAL_{it}$	61	7718	0.8%	99.2%
$OTHERNAS_{it}$	288	7491	3.7%	96.3%

Note. $NONAUDIT_{it}$ = fees paid for non-audit services for firm *i* at the end of time period *t*; $RNONAUDIT_{it}$ = ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period *t*; $LNONAUDIT_{it}$ = natural logarithm of fees paid for non-audit services for firm *i* at the end of time period *t*; $ABNONAUDIT_{it}$ = abnormal value of non-audit services for firm *i* at the end of time period *t* calculated based on S. Hossain (2013) model; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $TAXATION_{it}$ = natural logarithm of fees paid for tax services for firm *i* at the end of time period *t*; $ACCOUNTING_{it}$ = natural logarithm of fees paid for accounting services for firm *i* at the end of time period *t*; $ADVISORY_{it}$ = natural logarithm of fees paid for consulting and advisory services for firm *i* at the end of time period *t*; IT_{it} = natural logarithm of fees paid for information technology services for firm *i* at the end of time period *t*; $DUEDILIGENCE_{it}$ = natural logarithm of fees paid for due diligence services for firm *i* at the end of time period *t;* $INTERNALAUDIT_{it}$ = natural logarithm of fees paid for internal audit services for firm *i* at the end of time period *t*; $LEGAL_{it}$ = natural logarithm of fees paid for legal services for firm *i* at the end of time period *t*; $OTHERNAS_{it}$ =

natural logarithm of fees paid for non-audit services that are not separately disclosed for firm *i* at the end of time period *t*.

Table 5.5

Descriptive Statistics – Independent Variables for Distressed Firms

Panel A: Continuous variables					
Variable	Mean	SD	25th percentile	Median	75th percentile
$NONAUDIT_{it}$	$70,288	$212,219	$7,234	$17,587	$47,600
$RNONAUDIT_{it}$	0.22	0.16	0.10	0.17	0.29
$LNONAUDIT_{it}$	4.29	0.65	3.86	4.25	4.68
$ABNONAUDIT_{it}$	0.11	3.90	-3.07	-1.31	3.99
$TAXATION_{it}$	$43,397	$96,496	$6,813	$15,500	$39,335
$ACCOUNTING_{it}$	$45,340	$77,857	$9,259	$16,107	$46,289
$ADVISORY_{it}$	$61,099	$155,144	$4,147	$13,681	$37,176
IT_{it}	$32,707	$41,706	$12,000	$21,375	$29,665
$DUEDILIGENCE_{it}$	$97,497	$196,803	$11,803	$27,977	$74,675
$INTERNALAUDIT_{it}$	$24,072	$32,937	$9,528	$13,650	$20,295
$LEGAL_{it}$	$41,656	$70,923	$11,330	$13,000	$34,947
$OTHERNAS_{it}$	$41,190	$86,684	$4,400	$11,000	$35,063
Panel B: Dichotomous variables					
Variable	Frequency of 1's	Frequency of 0's		Percentage of 1's	Percentage of 0's
$HIGHNONAUDIT_{it}$	2059	3417		37.6%	62.4%
$LOWNONAUDIT_{it}$	3471	2059		62.4%	37.6%
$TAXATION_{it}$	1574	3896		28.8%	71.2%
$ACCOUNTING_{it}$	119	5351		2.2%	97.8%
$ADVISORY_{it}$	286	5184		5.2%	94.8%
IT_{it}	12	5458		0.2%	99.8%
$DUEDILIGENCE_{it}$	100	5370		1.8%	98.2%
$INTERNALAUDIT_{it}$	9	5461		0.2%	99.8%
$LEGAL_{it}$	11	5459		0.2%	99.8%
$OTHERNAS_{it}$	141	5329		2.6%	97.4%

Note. $NONAUDIT_{it}$ = fees paid for non-audit services for firm *i* at the end of time period *t*; $RNONAUDIT_{it}$ = ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period *t*; $LNONAUDIT_{it}$ = natural logarithm of fees paid for non-audit services for firm *i* at the end of time period *t*; $ABNONAUDIT_{it}$ = abnormal value of non-audit services for firm *i* at the end of time period *t* calculated based on S. Hossain (2013) model; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $TAXATION_{it}$ = natural logarithm of fees paid for tax services for firm *i* at the end of time period *t*; $ACCOUNTING_{it}$ = natural logarithm of fees paid for accounting services for firm *i* at the end of time period *t*; $ADVISORY_{it}$ = natural logarithm of fees paid for consulting and advisory services for firm *i* at the end of time period *t*; IT_{it} = natural logarithm of fees paid for information technology services for firm *i* at the end of time period *t*;

$DUEDILIGENCE_{it}$ = natural logarithm of fees paid for due diligence services for firm *i* at the end of time period *t;* $INTERNALAUDIT_{it}$ = natural logarithm of fees paid for internal audit services for firm *i* at the end of time period *t*; $LEGAL_{it}$ = natural logarithm of fees paid for legal services for firm *i* at the end of time period *t*; $OTHERNAS_{it}$ = natural logarithm of fees paid for non-audit services that are not separately disclosed for firm *i* at the end of time period *t*.

5.3.4 Descriptive Statistics: Control Variables

Table 5.6 reports the descriptive statistics for all control variables used in this study for the full sample of firm-year observations. The table shows that the lagged measure of last year's total current accruals ($L1ACCRUAL_{it-1}$) has a mean (median) and standard deviation of -0.22 (-0.09) and 0.54, respectively. $L1ACCRUAL_{it-1}$ ranges from -0.23 at the 25th percentile to -0.02 at the 75th percentile. The natural logarithm of total assets ($LNASSETS_{it}$) has a mean (median) and standard deviation of 7.4 (7.25) and 1.09, respectively. The $LNASSETS_{it}$ variable ranges from 6.72 at the 25th percentile to 8.04 at the 75th percentile. Table 5.6 shows that the market-to-book ratio ($MKTBK_{it}$) has a mean (median) and standard deviation of 2.89 (1.49) and 6.51, respectively, and it ranges from 0.71 at the 25th percentile to 3.38 at the 75th percentile. The leverage variable (LEV_{it}) for the sample firms has a mean (median) and standard deviation of 0.65 (0.28) and 1.98, respectively. Leverage among the sample firms ranges from 0.08 at the 25th percentile to 0.51 at the 75th percentile. The natural logarithm of audit firm tenure in years ($LNTENURE_{it}$) has a mean (median) and standard deviation of 0.74 (0.78) and 0.27, respectively, with a range from 0.48 at the 25th percentile to 0.95 at the 75th percentile. The cash from operations scaled by beginning-of-year total assets (CFO_{it-1}) has a mean (median) and standard deviation of -0.32 (-0.06) and 0.98, respectively, with a range from -0.26 at the 25th percentile to 0.05 at the 75th percentile.

Table 5.6 further indicates that the return on assets (ROA_{it}) has a mean (median) and standard deviation of -0.63 (-0.10) and 1.94, respectively. The ROA_{it} of the sample firms indicates a poor profitability ratio for shareholders since it ranges from -0.44 at the 25th percentile to 0.03 at the 75th percentile. The inventory plus accounts receivable divided by total assets at fiscal year-end ($INVREC_{it}$) has a mean (median) and standard deviation of 0.13 (0.05) and 0.18, respectively, and ranges from 0.01 at the 25th percentile to 0.19 at the 75th percentile. The natural logarithm of the number of geographic segments ($LNSEG_{it}$) for the sample firms has a mean (median) and

standard deviation of 0.75 (0.48) and 0.38, respectively, and ranges from 0.48 at the 25th percentile to 0.90 at the 75th percentile. The audit report lag, measured by the natural logarithm of the number of days between the fiscal year-end date and the initial audit report date ($LNLAG_{it}$), has a mean (median) and standard deviation of 1.86 (1.91) and 0.12, respectively. The $LNLAG_{it}$ variable ranges from 1.76 at the 25th percentile to 1.95 at the 75th percentile.

Furthermore, the results in Table 5.6 indicate that 46% of the firms in the full sample were audited by Big4 firms ($BIG4_{it}$), namely, PricewaterhouseCoopers, KPMG, Ernst & Young, and Deloitte, across the time period of the study. Table 5.6 shows that 55% of the sample firms scored 1 in $FINANCING_{it}$ (firms that were not involved in mergers but their shares outstanding increased by at least 10% or their long-term debt increased by at least 20%). Table 5.6 indicates that 66% of the sample firms had negative operating profits ($LOSS_{it}$), whereas 36% of the sample firms reported an increase in earnings per share over the prior year (EPS_UP_{it}). Firms in the initial year of auditor engagement ($INITIALYEARS_{it}$) comprised 30% of the sample firms.

Finally, the last five variables reported in Table 5.6 refer to the audit committee characteristics. The average audit committee size (AC_SIZE_{it}) was three members since the mean of AC_SIZE_{it} is 2.6. The results also indicate that 40% of the sample firms had a majority of independent members on their audit committee, while 15% of the sample firms had an audit committee member with financial or accounting expertise. Also, the average number of meetings of the audit committees for the sample firms was four times per year, since $AC\_MEETING_{it}$ has a mean of 3.55. Finally, 8% of the firms sampled met all the criteria required to have an effective audit committee.

Table 5.6

Descriptive Statistics – Control Variables (Continuous and Dichotomous) for Full Sample

Variable	Mean	SD	25th percentile	Median	75th percentile
$L1ACCRUAL_{it-1}$	-0.22	0.54	-0.23	-0.09	-0.02
$ASSETS_{it}$	$614,370,007	$2,447,346,903	$5,212,869	$17,710,489	$109,244,000
$LNASSETS_{it}$	7.40	1.09	6.72	7.25	8.04
$MKTBK_{it}$	2.89	6.51	0.71	1.49	3.38
LEV_{it}	0.65	1.98	0.08	0.28	0.51
$TENURE_{it}$	5.56	4.13	2.00	5.00	8.00
$LNTENURE_{it}$	0.74	0.27	0.48	0.78	0.95
CFO_{it-1}	-0.32	0.98	-0.26	-0.06	0.05
ROA_{it}	-0.63	1.94	-0.44	-0.10	0.03
$INVREC_{it}$	0.13	0.18	0.01	0.05	0.19
SEG_{it}	9.33	12.01	3.00	3.00	8.00
$LNSEG_{it}$	0.75	0.38	0.48	0.48	0.90
LAG_{it}	74.76	18.73	58.00	82.00	90.00
$LNLAG_{it}$	1.86	0.12	1.76	1.91	1.95
$BIG4_{it}$	0.46	0.50	0.00	0.00	1.00
$FINANCING_{it}$	0.55	0.50	0.00	1.00	1.00
$LOSS_{it}$	0.66	0.47	0.00	1.00	1.00
EPS_UP_{it}	0.36	0.48	0.00	0.00	1.00
$INITIALYEARS_{it}$	0.30	0.46	0.00	0.00	1.00
AC_SIZE_{it}	2.60	1.02	2.00	3.00	3.00
AC_INDP_{it}	0.40	0.49	0.00	0.00	1.00
AC_EXPERT_{it}	0.15	0.36	0.00	0.00	0.00
$AC\_MEETING_{it}$	3.55	1.80	2.00	3.00	4.00
ACE_{it}	0.08	0.28	0.00	0.00	0.00

Note. $L1ACCRUAL_{it-1}$ = last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period *t*; $ASSETS_{it}$ = total assets for firm *i* at the end of time period *t*; $LNASSETS_{it}$ = natural logarithm of total assets for firm *i* at the end of time period *t*; $MKTBK_{it}$ = market-to-book ratio for firm *i* at the end of time period *t* (market value of equity divided by book value); LEV_{it} = total liabilities divided by total assets for firm *i* at the end of time period *t*; $TENURE_{it}$ = audit firm tenure in years for firm *i* at the end of time period *t*; $LNTENURE_{it}$ = natural logarithm of audit firm tenure in years for firm *i* at the end of time period *t*; CFO_{it} = operating cash flow deflated by total assets for firm *i* at the end of time period *t*; ROA_{it} = return on total assets for firm *i* at the end of time period *t* (net income/total assets); $INVREC_{it}$ = inventory plus accounts receivable divided by total assets for firm *i* at the end of time period *t*; SEG_{it} = number of geographic segments for firm *i* at the end of time period *t*; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period *t*; LAG_{it} = number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period *t*; $LNLAG_{it}$ = natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period *t*; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased by at least 10% or long-term debt increased by at least 20% for firm *i* at the end of time period *t*, and 0 otherwise; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period *t*, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period *t*, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period *t*,

and 0 otherwise; AC_SIZE_{it} = the audit committee consists of at least three members; AC_INDP_{it} = the number of independent directors in audit committee; AC_EXPERT_{it} = the number of financial expertise in the audit committee; $AC\_MEETING_{it}$ = the number of meetings held by the audit committee during the financial year; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period *t*, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise.

Table 5.7 reports the descriptive statistics for the control variables of the distressed sample, which represents the opinion model sample. In general, the results show lower descriptive values than the full sample descriptive values since the non-distressed firms were excluded. The $CHANG\_LEV_{it}$ variable has a mean (median) and standard deviation of 0.05 (0.00) and 2.69, respectively, and ranges from -0.03 at the 25th percentile to 0.14 at the 75th percentile. Table 5.7 further shows a mean of 0.05 for $INVESTMENT_{it}$, a mean of 0.95 for $LNAGE_{it}$, and a mean of 13.61 for $PBANK_{it}$. In addition, the table shows that 36% of the distressed firms were audited by larger audit firms as the mean is 0.36 for $BIG4_{it}$. The $PQUAL_{it}$ variable has a mean of 0.39, implying that 39% of the distressed firms received a qualified opinion for the prior year.

Overall, Table 5.6 and Table 5.7 report consistent descriptive statistics in terms of the sign direction for the variables that are used in both the full sample and the distressed firms sample, such as $LNASSETS_{it}$, ROA_{it}, and so on. However, Table 5.7 shows a significant increase in reported losses, with 94% of the firm-year observations used for the opinion model having losses as shown by a mean of 0.94 for $LOSS_{it}$.[62]

[62] This is expected since this study defines distressed firms as firms that report losses or negative cash flow.

Table 5.7

Descriptive Statistics – Control Variables for Distressed Firms' Sample

Variable	Mean	SD	25th percentile	Median	75th percentile
$LNASSETS_{it}$	6.97	0.83	6.53	6.97	7.45
ROA_{it}	-0.91	2.19	-0.72	-0.25	-0.08
LEV_{it}	0.74	2.30	0.06	0.19	0.49
$CHANG\_LEV_{it}$	0.05	2.69	-0.03	0.00	0.14
$INVESTMENT_{it}$	0.05	0.41	-0.15	0.08	0.29
$LNAGE_{it}$	0.95	0.46	0.81	1.02	1.24
CFO_{it-1}	-0.48	1.10	-0.41	-0.14	-0.04
$PBANK_{it}$	13.61	88.05	-3.20	-1.80	1.23
$BIG4_{it}$	0.36	0.48	0.00	0.00	1.00
$LOSS_{it}$	0.94	0.23	1.00	1.00	1.00
$PQUAL_{it}$	0.39	0.48	0.00	0.00	1.00
ACE_{it}	0.02	0.15	0.00	0.00	0.00

Note. $LNASSETS_{it}$ = natural logarithm of total assets for firm *i* at the end of time period *t*; ROA_{it} = return on total assets for firm *i* at the end of time period *t* (net income/total assets); LEV_{it} = total liabilities divided by total assets for firm *i* at the end of time period *t*; $CHANG\_LEV_{it}$ = change in leverage for firm *i* at the end of time period *t*; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period *t*; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period *t*; CFO_{it} = operating cash flow deflated by total assets for firm *i* at the end of time period *t*; $PBANK_{it}$ = probability of bankruptcy for firm *i* at the end of time period *t*, as measured by adjusted Zmijewski score: $-4.3 - 4.5 \times$ (net income/total assets) $+ 5.7 \times$ (total debt/total assets) $-0.004 \times$ (current assets/current liabilities); $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period *t*, and 0 otherwise; $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period *t*-1, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period *t*, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise.

5.4 Correlation Analysis

Table 5.8 and Table 5.9 present correlation matrices reporting Pearson listwise correlation coefficients for all variables used in the full sample and distressed firms sample, respectively.[63] Table 5.8 shows that $KOTHA\text{-}ABDAC_{it}$ and $MJ\text{-}ABDAC_{it}$ have a negative and significant correlation with $LNONAUDIT_{it}$, suggesting that auditors are less likely to be involved in aggressive earnings management practices when they provide NAS. Table 5.8 shows a negative and significant correlation between *KOTHA*-

[63] To test the potential for collinearity, we performed a variance inflation factor (VIF) test to measure the amount of multicollinearity, and the VIF values do not suggest multicollinearity problems.

$ABDAC_{it}$ and variables that measure firm size ($LNMVE_{it}$ correlation value of -0.152, and $LNASSETS_{it}$ correlation value of -0.236). Also, $KOTHA\text{-}ABDAC_{it}$ has a negative and significant correlation with firm performance (ROE_{it} correlation value of -0.134 and CFO_{it-1} correlation value of -0.521), suggesting firms with poor performance are more likely to manage earnings. Table 5.8 indicates a significant correlation between $KOTHA\text{-}ABDAC_{it}$ and audit firm size ($BIG4_{it}$) with a correlation value of -0.135 and $LNTENURE_{it}$ with a correlation value of -0.052. It is expected that big audit firms maintain better auditor independence since they have a greater reputation to lose (DeAngelo, 1981b), while high audit tenure is associated with higher earnings management (J. Myers et al., 2003). The correlation figures in Table 5.8 show a significant correlation between $KOTHA\text{-}ABDAC_{it}$ and the growth proxy ($MKTBK_{it}$, correlation value of 0.105), as well as the ratio of total liabilities to total assets (LEV_{it}, correlation value of 0.178). High growth and leverage could be associated with high discretionary accruals (DeFond & Jiambalvo, 1994; Reynolds et al., 2004). Table 5.8 also shows a significant and positive correlation between $KOTHA\text{-}ABDAC_{it}$ and firms that report negative operating profits ($LOSS_{it}$), suggesting that firms are more likely to manage earnings when reporting losses.

In addition, Table 5.8 shows that $LNAF_{it}$ is positively and significantly correlated with all independent variable proxies, which is consistent with Zaman et al. (2011) and Ali et al. (2018). The table indicates that $LNAF_{it}$ is significantly correlated with the firm size and performance proxies, which are the $LNASSETS_{it}$ (correlation value of 0.815) and the ROA_{it} (correlation value of 0.224), respectively. This suggests that larger and higher performance firms are associated with higher audit fees. Table 5.8 reports that $LNAF_{it}$ has a significant and positive correlation with audit firm size ($BIG4_{it}$, correlation value of 0.507) but a significant and negative correlation with the first year of audit engagement ($INITIALYEARS_{it}$F, correlation value of -0.095). Also, the table indicates that $LNAF_{it}$ is correlated significantly with the risk factor proxies, which are LEV_{it} (correlation value of -0.077) and EPS_UP_{it} (correlation value of 0.021). Table 5.8 also shows a significant correlation between $LNAF_{it}$ and the client complexity proxies, which are $LNSEG_{it}$ (correlation value of 0.419) and $LNLAG_{it}$ (correlation value of -0.449). Table 5.8 reports that $LNAF_{it}$ has a significant but negative correlation with the $MKTBK_{it}$ variable (correlation value of -0.010). Table 5.8 indicates that $LNAF_{it}$ has a significant and positive correlation with $INVREC_{it}$

(correlation value of 0.268). Table 5.8 shows that the effective audit committee variable (ACE_{it}) is associated with higher audit fees (correlation value of 0.458), which implies the audit committee could play a significant role in controlling audit quality.

Moreover, Table 5.8 shows significant correlations between some control variables and the NAS proxies. For example, CFO_{it-1} is correlated positively with the NAS proxies, supporting the argument that firms with high cash flow are more likely to target baseline earnings and purchase more NAS (Frankel et al., 2002). Also, prior studies used $FINANCING_{it}$ as a proxy to measure the demand for additional NAS that is associated with firms' business combination activities (Ashbaugh et al., 2003), and Table 5.8 reports a negative and significant correlation between $LNONAUDIT_{it}$ and $FINANCING_{it}$ (correlation value of -0.091), suggesting that firms involved in merger and acquisition activities have lower demand for NAS. Finally, similar to Becker et al. (1998), Table 5.8 shows a positive correlation between $LNTENURE_{it}$ and $BIG4_{it}$, implying that the client is more likely to retain larger auditors for longer periods in support of a more stable relationship between them.

Table 5.9 reports negative correlations between the issuance of GCOs ($GC\_OPINION_{it}$), the ratio of NAS to total fees ($RNONAUDIT_{it}$), and the natural logarithm of NAS ($LNONAUDIT_{it}$), and a negative but insignificant correlation between $GC\_OPINION_{it}$ and $ABNONAUDIT_{it}$, which suggests auditors are less likely to issue GCOs when they provide NAS to their clients. Also, Table 5.9 reports significant correlations between $GC\_OPINION_{it}$ and several control variables. $GC\_OPINION_{it}$ is correlated negatively and significantly with $LNASSETS_{it}$ (correlation = -0.143), ROA_{it} (correlation = -0.073), $INVESTMENT_{it}$ (correlation = -0.218), CFO_{it}, (correlation = -0.034), $BIG4_{it}$ (correlation = -0.058), $PQUAL_{it}$ (correlation = -0.208), and ACE_{it} (correlation = -0.060). However, $GC\_OPINION_{it}$ is correlated positively and significantly with $LNAGE_{it}$ (correlation = 0.068), and $LOSS_{it}$, (correlation = 0.095).

Table 5.8

Pearson Correlation Coefficients for Earnings Management and Audit Fees Models

No.	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	$KOTHA\text{-}ABDAC_{it}$	1																							
2	$MJ\text{-}ABDAC_{it}$	.977**	1																						
3	$LNAF_{it}$	-.201**	-.222**	1																					
4	$RNONAUDIT_{it}$	0.003	-0.014	.046**	1																				
5	$LNONAUDIT_{it}$	-.146**	-.171**	.772**	.634**	1																			
6	$ABNONAUDIT_{it}$	0.086	0.072	.176**	.531**	.182**	1																		
7	$L1ACCRUAL_{it-1}$	-.656**	-.627**	.140**	0.027	.123**	0.020	1																	
8	$LNMVE_{it}$	-.152**	-.167**	.778**	.168**	.678**	.086*	.141**	1																
9	$LNASSETS_{it}$	-.236**	-.260**	.815**	.120**	.679**	.103**	.250**	.865**	1															
10	$MKTBK_{it}$	.105**	.106**	-0.010**	.054**	0.016	-0.021	-.077**	.136**	-.045**	1														
11	LEV_{it}	.178**	.178**	-.077**	0.004	-0.009	-0.012	-.262**	-.171**	-.310**	-.152**	1													
12	$LNTENURE_{it}$	-.052**	-.062**	.214**	-.043*	.171**	0.046	.054**	.202**	.195**	-.028*	-0.019	1												
13	CFO_{it-1}	-.521**	-.503**	.264**	0.012	.216**	0.043	.476**	.221**	.371**	-.093**	-.229**	.078**	1											
14	ROE_{it}	-.134**	-.131**	.113**	.039*	.135**	0.025	.161**	.118**	.131**	-.561**	.142**	.032*	.079**	1										
15	ROA_{it}	-.332**	-.334**	.224**	.057**	.219**	0.021	.390**	.289**	.471**	.065**	-.609**	.054**	.280**	.073**	1									
16	$INVREC_{it}$	-0.018	-0.023	.268**	-0.020	.145**	.088*	.081**	.108**	.097**	0.010	.185**	-0.004	.041**	.096**	-.052**	1								
17	$LNSEG_{it}$	-.117**	-.130**	.419**	-0.007	.312**	.111*	.080**	.312**	.308**	.048**	-.058**	.102**	.143**	.031*	.117**	.238**	1							
18	$LNLAG_{it}$	.147**	.156**	-.449**	-.101**	-.394**	-.120**	-.131**	-.492**	-.480**	-.040**	.139**	-.105**	-.161**	-.072**	-.212**	-.167**	-.137**	1						
19	$BIG4_{it}$	-.135**	-.139**	.507**	.113**	.447**	-0.026	.104**	.468**	.491**	-0.002	-.041**	.146**	.171**	.063**	.143**	.123**	.195**	-.317**	1					
20	$FINANCING_{it}$	.062**	.074**	-.153**	.084**	-.091**	-0.027	-.075**	-.104**	-.135**	.060**	-.045**	-.135**	-.111**	-.088**	-.048**	-.095**	-.073**	.134**	-.106**	1				
21	$LOSS_{it}$	.147**	.172**	-.586**	-.116**	-.483**	-0.069	-.195**	-.602**	-.590**	.025*	.072**	-.151**	-.263**	-.184**	-.241**	-.272**	-.223**	.453**	-.312**	.220**	1			
22	EPS_UP_{it}	-.087**	-.084**	0.021	0.009	.053**	0.022	.038**	.078**	.037**	.039**	-.028*	0.009	.028*	-.027*	0.018	-0.001	0.016	-.024*	0.014	.045**	-0.022	1		
23	$INITIALYEARS_{it}$	.089**	.105**	-.095**	.134**	-.042**	-.092*	-.037**	-.072**	-.078**	.046**	0.002	-.670**	-.068**	-0.007	0.007	.029*	-.077**	.046**	-.051**	.122**	-0.005	0.004	1	
24	ACE_{it}	-.090**	-.101**	.458**	.048**	.338**	0.070	.078**	.426**	.410**	-0.003	-.034**	.127**	.126**	.075**	.103**	.103**	.175**	-.314**	.265**	-.108**	-.313**	0.010	-.096**	1

Note. $KOTHA\text{-}ABDAC_{it}$ = absolute value of discretionary accruals for firm *i* at the end of time period *t* calculated using the performance-adjusted Kothari et al. (2005) model; $MJ\text{-}ABDAC_{it}$ = absolute value of discretionary accruals for firm *i* at the end of time period *t* calculated using the modified Jones (1995) model; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period *t*; $RNONAUDIT_{it}$ = ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period *t*; $LNONAUDIT_{it}$ = natural logarithm of fees paid for non-audit services for firm *i* at the end of time period *t*; $ABNONAUDIT_{it}$ = abnormal value of non-audit services for firm *i* at the end of time period *t* calculated based on S. Hossain (2013) model; $L1ACCRUAL_{it-1}$ = last year's total current accruals equal to net income before extraordinary

items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period *t*; $LNMVE_{it}$ = natural logarithm of market capitalisation for firm *i* at the end of time period *t*; $LNASSETS_{it}$ = natural logarithm of total assets for firm *i* at the end of time period *t*; $MKTBK_{it}$ = market-to-book ratio for firm *i* at the end of time period *t* (market value of equity divided by book value); LEV_{it} = total liabilities divided by total assets for firm *i* at the end of time period *t*; $LNTENURE_{it}$ = natural logarithm of audit firm tenure in years for firm *i* at the end of time period *t*; CFO_{it-1}= operating cash flow deflated by total assets for firm *i* at the end of time period *t*; ROA_{it} = return on total assets for firm *i* at the end of time period *t* (net income/total assets); $INVREC_{it}$ = inventory plus accounts receivable divided by total assets for firm *i* at the end of time period *t*; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period *t*; $LNLAG_{it}$ = natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period *t*; $BIG4_{it}$ = 1 if firm *i* was audited by a $BIG4_{it}$ audit firm at the end of time period *t*, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased by at least 10% or long-term debt increased by at least 20% for firm *i* at the end of time period *t*, and 0 otherwise; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period *t*, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period *t*, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period *t*, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period *t*, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise.

* $p < 0.05$, two-tailed. ** $p < 0.01$, two-tailed.

Table 5.9

Pearson Correlation Coefficients for Opinion Model

No.	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	$GC\_OPINION_{it}$	1															
2	$RNONAUDIT_{it}$	-.140**	1														
3	$LNONAUDIT_{it}$	-.162**	.716**	1													
4	$ABNONAUDIT_{it}$	-0.054	.638**	.365**	1												
5	$LNASSETS_{it}$	-.143**	.103**	.528**	.101*	1											
6	ROA_{it}	-.073**	0.035	.150**	0.011	.526**	1										
7	LEV_{it}	.068**	-0.005	-0.033	-0.008	-.423**	-.641**	1									
8	$CHANG\_LEV_{it}$	0.000	-0.016	-0.005	0.025	.040**	.059**	-.051**	1								
9	$INVESTMENT_{it}$	-.218**	0.017	-.132**	0.013	-.101**	.086**	-.449**	-0.002	1							
10	$LNAGE_{it}$	.068**	-.210**	-.066*	0.017	.039*	-0.022	.068**	-0.026	-.167**	1						
11	CFO_{it-1}	-.034*	-0.039	.100**	0.025	.326**	.230**	-.221**	-.056**	-.086*	-0.034	1					
12	$PBANK_{it}$	-0.003	0.011	-.063*	0.037	-.384**	-.626**	.616**	-.080**	-.368**	0.046	-.122**	1				
13	$BIG4_{it}$	-.058**	.093**	.319**	-0.032	.324**	.084**	-.027*	-0.010	-0.056	.215**	.094**	-.076**	1			
14	$LOSS_{it}$	.095**	-.047*	-.122**	-0.040	-.147**	-.106**	0.009	-0.010	-.128**	-0.035	-0.024	0.025	-.053**	1		
15	$PQUAL_{it}$	-.208**	.079**	.079**	.143**	.141**	.178**	.103**	-.093**	-0.011	.117**	-0.011	.090**	-.041*	.075**	-.08**	
16	ACE_{it}	-.060**	0.018	.218**	.089*	.262**	.059**	-0.025	-0.012	-0.005	.086**	.051**	-0.016	.162**	-.078**	-.009	1

Note. $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period *t* and 0 otherwise; $RNONAUDIT_{it}$ = ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period *t*; $LNONAUDIT_{it}$ = natural logarithm of fees paid for non-audit services for firm *i* at the end of time period *t*; $ABNONAUDIT_{it}$ = abnormal value of non-audit services for firm *i* at the end of time period *t* calculated based on S. Hossain (2013) model; $LNASSETS_{it}$ = natural logarithm of total assets for firm *i* at the end of time period *t*; ROA_{it} = return on total assets for firm *i* at the end of time period *t* (net income/total assets); LEV_{it} = total liabilities divided by total assets for firm *i* at the end of time period *t*; $CHANG\_LEV_{it}$ = change in leverage for firm *i* at the end of time period *t*; $INVESTMENT_{it}$ = short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period *t*; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period *t*; CFO_{it} = operating cash flow deflated by total assets for firm *i* at the end of time period *t*; $PBANK_{it}$ = probability of bankruptcy for firm *i* at the end of time period *t*, as measured by adjusted Zmijewski score: $-4.3 - 4.5 \times$ (net income/total assets) $+ 5.7 \times$ (total debt/total assets) $-0.004 \times$ (current assets/current liabilities); $BIG4_{it}$ = 1 if firm *i* was audited by a $BIG4_{it}$ audit firm at the end of time period *t*, and 0 otherwise; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period *t*, and 0 otherwise; $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period *t*-1, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period *t*, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise.

* $p < 0.05$, two-tailed. ** $p < 0.01$, two-tailed.

5.5 Chapter Summary

In this chapter, the processes employed to collect and clean the data were presented, as well as the selection process for the study sample, which was clarified by providing the industry breakdown for the final usable sample. Then, the descriptive statistics of this study's variables were presented and comprehensively discussed. Finally, the correlation results for this study were identified and discussed.

Overall, the correlations between the dependent and NAS variables suggest that NAS may not impair auditor independence. However, the Pearson correlation analysis did not report the association between the dependent and NAS variables with consideration of the impact of the control variables. Thus, this study applies pooled OLS multiple regression tests that will be presented and discussed in the next chapter.

Chapter 6: Multivariate Analysis – Multiple Regressions

6.1 Chapter Overview

The descriptive statistics and univariate findings of this study were recorded and discussed in Chapter 5. Also, to use the data confidently in multiple regressions, Chapter 5 outlined steps that ensure the normality and correctness of the sample's data. Finally, Pearson's correlation analysis was subsequently provided in Chapter 5.

Chapter 6 documents and discusses the results of this study. The impact of NAS (the independent variable) on earnings management, audit opinion, and audit fees (the dependent variables) are identified in this chapter by reporting the OLS regression results. Also, the impact of the type of NAS on audit quality is presented in this chapter. Finally, comparisons and contrasts between the results are addressed before the summary of Chapter 6 is provided.

6.2 Regression Results

A multiple regression analysis is found to be sufficient in this study since the emphasis of this study is on the impact of multiple variables on dependent variables. OLS regression is viewed as an effective method because the three models used in this study include both dichotomous and continuous variables (Hutcheson & Sofroniou, 1999). The outcomes of the OLS regressions that test the impact of NAS on audit quality are discussed in the following subsections.

6.2.1 Impact of NAS on Earnings Management

Table 6.1 records the outcomes of OLS regressions in which the NAS proxies are regressed against the absolute value of discretionary accruals using the Kothari (2005) model ($KOTHA\text{-}ABDAC_{it}$). This study has four regressions for the discretionary accruals model. Each Column in Table 6.1 reports the results of OLS regression for a different proxy for NAS (the independent variable).

Table 6.1 Column 1 shows that the coefficient on $RNONAUDIT_{it}$ is found to be positive and insignificant (coefficient = 0.015, p-value = 0.558), which is consistent

with the prior Australian studies (S. Hossain et al., 2016; Singh et al., 2019). Similarly, Table 6.1 Column 2 reports a positive and insignificant result for $LNONAUDIT_{it}$ (coefficient = 0.002, p-value = 0.753), which supports the finding reported in Column 1. Table 6.1 Column 3 reports a positive and significant result for $HIGHNONAUDIT_{it}$ (coefficient = 0.020, p-value = 0.010), implying that auditors are more likely to be involved in managing earnings when they receive a higher value of NAS. Table 6.1 Column 4 reports the regressions for $LOWNONAUDIT_{it}$ that documents the association between the low level of NAS and earnings management to be negative but significant (coefficient =-0.020, p-value = 0.010), which supports the finding reported in Column 3. These findings suggest that the higher level of NAS is associated with a higher level of earnings management, which supports the acceptance of hypothesis *H1*.

In addition, the results in Table 6.1 show that there is a significant relationship between the absolute value of discretionary accruals and several control variables, such as client size ($LNASSETS_{it}$), last year's total current accrual ($L1ACCRUAL_{it-1}$), firms' age ($LNAGE_{it}$) cash from operations (CFO_{it}), return on assets (ROA_{it}), auditors' brand ($Big4_{it}$), firms' debt ($FINANCING_{it}$) and firms that report losses ($Loss_{it}$). All columns in Table 6.1 indicate that the coefficients on $LNASSETS_{it}$ are negative but significant (p-value < 0.05), which implies that smaller firms have greater motivations to manage earnings. That can be caused by the deficiencies in internal control in those smaller firms (Skaife, Collins & Kinney, 2007). Also, all columns in Table 6.1 indicate that the coefficients on $L1ACCRUAL_{it-1}$ are negative but significant (p-value < 0.05), which is consistent with (Huang, Mishra, & Raghunandan, 2007). All columns in Table 6.1 indicate that the coefficients on LEV_{it} are negative but significant (p-value < 0.05), suggesting that higher leverage firms are less likely to be involved in earnings management practices. This is consistent with Eilifsen and Knivsflå (2016) and Abu et al. (2020). All columns in Table 6.1 further indicate that the coefficients on $LNTENURE_{it}$ are negative but significant (p-value < 0.05), suggesting that the aggressive practices of earrings management are more likely to occur during a short audit tenure which is consistent with Blandon et al. (2017). All columns in Table 6.1 report the CFO_{it} to have negative but significant coefficients (p-value < 0.05), implying that firms with higher economic stability and efficiency (higher performance) have less incentive to manage earnings. Table 6.1 reports the coefficients

on ROA_{it} to be negative but significant in all columns, suggesting that lower profit-making firms have greater incentives to manage earnings since these firms could need external funding to resolve the cash flow squeeze (White, 1970). All columns in Table 6.1 indicate that the coefficients on $BIG4_{it}$ are negative but significant (p-value < 0.05), implying that big audit firms are concerned about their reputation and prevent the aggressive practice of earnings management. Also, all columns in Table 6.1 indicate that the coefficients on $LOSS_{it}$ are negative and significant (p-value < 0.05), suggesting that financially distressed firms have a limited capacity to engage in earnings management. Other control variables are found to be statistically insignificant that are $MKTBK_{it}$, $LNAGE_{it}$, $FINANCING_{it}$ and ACE_{it}.

Finally, all regressions reported in Table 6.1 include $INDUSTRY_{it}$ dichotomous variables to control for industrial impacts and $YEAR_{it}$ dichotomous variables to control for temporal variance in reporting dates. This is for five year observations from 2014 to 2018. According to the goodness-of-fit (adjusted R^2), the control variables in the regression model explain 47.3% of the variance in the absolute value of discretionary accruals. The F-statistic is 0.00, which is at the 1% significant level.

Table 6.1

OLS Regression Results – the Impact of NAS on the Absolute Value of Discretionary Accruals (KOTHA-ABDACit)

Variables	Expected Sign.	Column 1		Column2		Column 3		Column 4	
		coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept		0.587	0.000	0.585	0.000	0.566	0.000	0.587	0.000
$RNONAUDIT_{it}$	?	0.015	0.558						
$LNONAUDIT_{it}$	?			0.002	0.753				
$HIGHNONAUDIT_{it}$	?					0.020	0.010		
$LOWNONAUDIT_{it}$	?							-0.020	0.010
$LNASSETS_{it}$	?	-0.044	0.000	-0.045	0.000	-0.043	0.000	-0.043	0.000
$L1ACCRUAL_{it-1}$	-	-0.165	0.000	-0.165	0.000	-0.165	0.000	-0.165	0.000
$MKTBK_{it}$	+	0.000	0.920	0.000	0.920	0.000	0.915	0.000	0.915
LEV_{it}	+	-0.006	0.006	-0.006	0.006	-0.006	0.005	-0.006	0.005
$LNTENURE_{it}$	?	-0.067	0.000	-0.067	0.000	-0.065	0.000	-0.065	0.000
$LNAGE_{it}$	+	0.006	0.494	0.006	0.521	0.007	0.439	0.007	0.439
CFO_{it-1}	-	-0.206	0.000	-0.206	0.000	-0.206	0.000	-0.206	0.000
ROA_{it}	?	-0.028	0.000	-0.028	0.000	-0.028	0.000	-0.028	0.000
$Big4_{it}$	-	-0.018	0.016	-0.018	0.017	-0.018	0.017	-0.018	0.017
$FINANCING_{it}$	+	-0.008	0.244	-0.008	0.253	-0.008	0.236	-0.008	0.236
$LOSS_{it}$	+	-0.117	0.000	-0.117	0.000	-0.117	0.000	-0.117	0.000
ACE_{it}	-	-0.008	0.527	-0.008	0.514	-0.007	0.561	-0.007	0.561
$INDUSTRY_{it}$	?	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	?	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2		0.473		0.473		0.473		0.473	
Sig. F change		0.00		0.00		0.00		0.00	
Observations		7779		7779		7779		7779	

Regressions' Equations: Column 1 based on *Equation [6]*, Column 2 based on *Equation [7]*, Column 3 based on *Equation [8]* and Column 4 based on *Equation [9]*.

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1RNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBKit + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11} FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [6]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1LNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBKit + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11} FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [7]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1HIGHNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBKit + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11} FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [8]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1LOWNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBKit + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11} FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [9]

Where:

KOTHA-ABDAC$_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; *RNONAUDIT$_{it}$* = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; *LNONAUDIT$_{it}$* = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; *HIGHNONAUDIT$_{it}$* = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; *LOWNONAUDIT$_{it}$* = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; *L1ACCRUAL $_{it-1}$*= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; *LNASSETS$_{it}$* = Natural logarithm of total assets for firm *i* at the end of time period t; *MKTBK$_{it}$* = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); *LEV$_{it}$* = Total liabilities divided by total assets for firm *i* at the end of time period t; *LNTENURE$_{it}$* = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; *LNAGE$_{it}$* = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; *CFO$_{it-1}$*= Operating cash flow deflated by beginning of total assets for firm *i* at the end of time period t; *ROA$_{it}$* = Return on total assets for firm *i* at the end of time period t (net income/total assets); *BIG4$_{it}$* = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; *FINANCING$_{it}$* = 1 if merger is not equal to 1 and number of shares outstanding increased; *LOSS$_{it}$* = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; *ACE$_{it}$* = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; *INDUSTRY$_{it}$* = Industry indicator variable to control for industry effects; *YEAR$_{it}$* = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

6.2.2 Impact of NAS on the Issuance of GCOs

Table 6.2 records the outcomes of OLS regressions in which the NAS proxies are regressed against the issuance of GCOs ($GC\_OPINION_{it}$).[64] A review of Table 6.2 Columns 1, 2 and 3 indicates that the coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$ and $HIGHNONAUDIT_{it}$ are negative but significant (p-value < 0.05), implying that auditors are less likely to issue GCOs when they provide NAS to their clients. These negative coefficients indicate that the independence of auditors is impaired when NAS increases, which is consistent with prior Australian findings (Callaghan, Parkash, & Singhal, 2009; Sharma, 2001; Sharma & Sidhu, 2001; S. Hossain, Monroe, Wilson, & Jubb, 2016) but not with (Craswell, 1999; S. Hossain, 2013). Also, Table 6.2 Column 4 indicates that the low level of NAS ($LOWNONAUDIT_{it}$) has a positive and significant coefficient (p-value < 0.05), suggesting that an auditor may act more independently when NAS is at its lower level. Thus, there is a potential for the auditor's independence to be stronger where auditors are not hired by their clients for the provision of NAS. These findings support the economic band argument and the acceptance of hypothesis H_2.

A further review of Table 6.2 indicates that $GC\_OPINION_{it}$ is significantly associated with several control variables. Consistent with (Read, 2015), all Columns in Table 6.2 indicate that the coefficients on $LNASSETS_{it}$ are negative but significant (p-value < 0.05), suggesting that smaller firms are more likely to receive GCO. Consistent with (Callaghan et al., 2009; S. Hossain, 2013), all Columns in Table 6.2 indicate that the coefficients on LEV_{it} are positive and significant (p-value < 0.05), while the change in leverage ($CHANG\_LEV_{it}$) is statistically insignificant. Moreover, consistent with (DeFond et al., 2002), all Columns in Table 6.2 indicate that the coefficients on $INVESTMENT_{it}$ are negative but significant (p-value < 0.05), implying that firms with a liquidity issue are more likely to receive a GCO. All Columns in Table 6.2 indicate that the coefficients on $LNAGE_{it}$ are positive and significant (p-value < 0.05), suggesting that the new listed firms on ASX are less likely to receive GCOs. Consistent with Callaghan et al. (2009) $PBANK_{it}$ has a negative and significant coefficient in all Columns in Table 6.2, suggesting that firms with a lower probability

[64] We have run logistic regressions with binary outcome variables for all GCOs tests and found similar results to OLS regressions.

of bankruptcy are less likely to receive GCOs. All Columns in Table 6.2 indicate that the coefficients on $LOSS_{it}$ and $PQUAL_{it}$ are positive and significant (p-value < 0.05), which is consistent with S. Hossain (2013). The rest of the control variables (namely: ROA_{it}, CFO_{it-1}, $BIG4_{it}$ and ACE_{it}) are statistically insignificant in the opinion model.

Finally, Table 6.2 includes $INDUSTRY_{it}$ dummies variables to control for industrial impacts and $YEAR_{it}$ dummy variables to control for time gaps in reporting periods. These are for five year observations from 2014 to 2018. According to the goodness-of-fit (adjusted R^2), the control variables in the regression model explain, on average, 6.2% to 6.5% of the variance in $GC\_OPINION_{it}$. The F-statistic is 0.00 that is at the 1% significant level.

Table 6.2

OLS Regression Results – Impact NAS on Audit Opinion (GC_OPINIONit)

Variables	Expected Sign.	Column 1		Column2		Column 3		Column 4	
		coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept		0.758	0.00	0.847	0.00	0.683	0.00	0.710	0.00
$RNONAUDIT_{it}$	?	-0.273	0.00						
$LNONAUDIT_{it}$	?			-0.049	0.00				
$HIGHNONAUDIT_{it}$	?					-0.046	0.01		
$LOWNONAUDIT_{it}$	?							0.060	0.00
$LNASSETS_{it}$	-	-0.067	0.00	-0.061	0.00	-0.066	0.00	-0.072	0.00
ROA_{it}	-	-0.001	0.72	-0.002	0.62	-0.002	0.69	-0.001	0.78
LEV_{it}	+	0.010	0.01	0.010	0.01	0.010	0.01	0.010	0.01
$CHANG\_LEV_{it}$	+	0.001	0.66	0.001	0.64	0.001	0.62	0.001	0.66
$INVESTMENT_{it}$	-	-0.184	0.00	-0.188	0.00	-0.185	0.00	-0.188	0.00
$LNAGE_{it}$	+	0.048	0.02	0.054	0.01	0.052	0.01	0.055	0.01
CFO_{it-1}	-	-0.002	0.71	-0.002	0.78	-0.002	0.77	-0.002	0.76
$PBANK_{it}$	-	-0.001	0.00	-0.001	0.00	-0.001	0.00	-0.001	0.00
$BIG4_{it}$	+	-0.012	0.40	-0.011	0.43	-0.013	0.34	-0.014	0.30
$LOSS_{it}$	+	0.116	0.00	0.117	0.00	0.118	0.00	0.117	0.00
$PQUAL_{it}$	+	0.282	0.00	0.282	0.00	0.282	0.00	0.283	0.00
ACE_{it}	-	-0.061	0.14	-0.046	0.26	-0.054	0.19	-0.063	0.13
$INDUSTRY_{it}$	?	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	?	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R Square		0.065		0.063		0.062		0.064	
Sig. F change		0.00		0.00		0.00		0.00	
Observations		5476		5476		5476		5476	

Regressions' Equations: Column 1 based on *Equation [10]*, Column 2 based on *Equation [11]*, Column 3 based on *Equation [12]* and Column 4 based on *Equation [13]*.

$GC\_OPINION_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [10]

$GC\_OPINION_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [11]

$GC\_OPINION_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [12]

$GC\_OPINION_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ *[13]*

Where:

$GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time

period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; CFO_{it}= Operating cash flow deflated by beginning of total assets for firm *i* at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

6.2.3 Impact of NAS on Audit Fees

Table 6.3 records the outcomes of OLS regressions in which the NAS proxies are regressed against the natural logarithm of Audit fees ($LNAF_{it}$). In the audit fees model, the ratio of NAS is measured by dividing the total of NAS by the total assets instead of total fees. This is due to a linearity issue which potentially affects the analysis when NAS is scaled by total fees, as the audit fees would be a dependent variable and a significant factor on the independent variable.[65] Table 6.3 Columns 1, 2, 3 and 4 show positive and significant coefficients (p-value < 0.05) for $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$. These findings conform to the prior Australian studies (Barkess & Simnett, 1994; Butterworth & Houghton, 1995; Craswell, Francis, & Taylor, 1995; Miah, Jiang, Rahman, & Stent, 2020). The positive coefficients between audit fees and NAS proxies imply that the provisions of NAS contribute to additional audit work. However, auditor's independence could be compromised since the increase in both service fees suggest no audit production efficiencies. Indeed, the auditors could estimate the future flows of quasi-rents and charge higher audit fees (Palmrose, 1986b; Barkess & Simnett, 1994; Hay, Knechel, & Wong, 2006). These findings support the economic bond argument and the acceptance of hypothesis H_3 since the provision of NAS does not contribute to audit production efficiencies.

In addition, Table 6.3 identifies several control variables that are associated with $LNAF_{it}$. Consistent with (Bradbury, 2017; Miah, Jiang, Rahman & Stent, 2020), all Columns in Table 6.3 indicate that the coefficients on $LNASSETS_{it}$ are positive and significant (p-value < 0.05), suggesting that the higher audit fee is associated with larger firms. Also, all Columns in Table 6.3 indicate that the coefficients on $MKTBK_{it}$, LEV_{it}, $LNTENURE_{it}$, ROA_{it}, $INVREC_{it}$, $LNSEG_{it}$, $LNLAG_{it}$, $BIG4_{it}$, and ACE_{it} are positive and significant (p-value < 0.05), while on ROA_{it} is negative but significant. The results of these control variables are comparable with the prior studies (Zhang & Myrteza, 1996; Ezzamel, Gwilliam & Holland, 2002; Huang, Raghunandan & Rama, 2009; Choi, Kim, & Zang, 2010; Bradbury, 2017; Miah et al., 2020). EPS_UP_{it} and $INITIALYEARS_{it}$ are found to be statistically insignificant. The goodness-of-fit

[65] According to OLS Assumption (OLS Assumption 1), when a model has dependent and independent variables that are non-linearly related, the model is not correct and therefore not reliable (James and Singh 1978).

(adjusted R2) varied between 67% and 69%, which is consistent with the prior studies (Craswell, Francis, & Taylor, 1995; Zhang & Myrteza, 1996; Firth, 2002; Antle, Gordon, Narayanamoorthy, & Zhou, 2006; Miah, Jiang, Rahman, & Stent, 2020). The F-statistic is 0.00, which is at the 1% significant level.

Table 6.3

OLS Regression Results – Impact NAS on Audit Fees

Variables	Expected Sign.	Column 1 coefficient	p-value	Column2 coefficient	p-value	Column 3 coefficient	p-value	Column 4 coefficient	p-value
Intercept		2.178	0.000	1.787	0.000	2.240	0.000	2.241	0.000
$RNONAUDIT_{it}$	?	1.327	0.000						
$LNONAUDIT_{it}$	?			0.163	0.000				
$HIGHNONAUDIT_{it}$	?					0.059	0.000		
$LOWNONAUDIT_{it}$	?							0.101	0.000
$LNASSETS_{it}$	+	0.323	0.000	0.280	0.000	0.314	0.000	0.315	0.000
$MKTBK_{it}$	+	0.002	0.000	0.001	0.006	0.002	0.000	0.002	0.000
LEV_{it}	+	0.020	0.000	0.015	0.000	0.019	0.000	0.020	0.000
$LNTENURE_{it}$	?	0.084	0.000	0.075	0.000	0.089	0.000	0.086	0.000
ROA_{it}	?	-0.027	0.000	-0.025	0.000	-0.028	0.000	-0.028	0.000
$INVREC_{it}$	+	0.212	0.000	0.213	0.000	0.214	0.000	0.200	0.000
$LNSEG_{it}$	+	0.173	0.000	0.153	0.000	0.173	0.000	0.168	0.000
$LNLAG_{it}$	+	0.026	0.005	0.037	0.000	0.029	0.002	0.016	0.092
$BIG4_{it}$	+	0.071	0.000	0.062	0.000	0.072	0.000	0.075	0.000
EPS_UP_{it}	-	-0.009	0.178	-0.006	0.363	-0.009	0.207	-0.011	0.123
$INITIALYEARS_{it}$	?	-0.004	0.611	-0.005	0.516	-0.002	0.822	0.002	0.793
ACE_{it}	?	0.184	0.000	0.158	0.000	0.183	0.000	0.187	0.000
$INDUSTRY_{it}$		Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$		Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2		.672		.694		.673		.677	
Sig. F change		0.00		0.00		0.00		0.00	
Observations		7779		7779		7779		7779	

Regressions' Equations: Column 1 based on *Equation [10]*, Column 2 based on *Equation [11]*, Column 3 based on *Equation [12]* and Column 4 based on *Equation [13]*.

$$LNAF_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [14]$$

$$LNAF_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [15]$$

$$LNAF_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [16]$$

$$LNAF_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [17]$$

Where:

$LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total assets for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees

are less than the median for firm *i* at the end of time period t, and 0 otherwise; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

6.2.4 Impact of Types of NAS on Audit Quality

To investigate which type of NAS most threatens audit independence, we ran regressions for each service independently (namely, $TAXATION_{it}$, $ACCOUNTING_{it}$, $ADVISORY_{it}$, IT_{it}, $DUEDILIGENCE_{it}$, $INTERNALAUDIT_{it}$, $LEGAL_{it}$ and $OTHERNAS_{it}$). Table 6.4 Panels A, B and C record the outcomes of OLS regressions in which the natural logarithm of the types of NAS (the independent variables) are regressed against this study's dependent variables, which are the absolute value of discretionary accruals ($KOTHA\text{-}ABDAC_{it}$), the issuance of GCOs ($GC\_OPINION_{it}$) and the natural logarithm of audit fees ($LNAF_{it}$).

Table 6.4 Panel A indicates that there is no association between the type of NAS and earnings management ($KOTHA\text{-}ABDAC_{it}$) since all Columns in Table 6.4 Panel A report insignificant results (p-value > 0.1). For instance, Table 6.4 Panel A Column 1 reports a positive but insignificant coefficient for $TAXATION_{it}$, implying that the provisions of tax services do not contribute to knowledge spillovers. These findings are consistent with Omer et al. (2006) but not with Christensen et al. (2015).

In addition, Table 6.4 Panel B Column 1 indicates a negative and marginally significant coefficient for $TAXATION_{it}$ (coefficient = -0.040, p-value = 0.054), while the other Columns in Panel B report insignificant results. The finding for $TAXATION_{it}$ supports the economic bond argument since the provisions of tax services are associated negatively with the issuance of GCOs, which is inconsistent with (Robinson, 2008).

Moreover, Table 6.4 Panel C Column 1 reports a positive and significant coefficient on $TAXATION_{it}$ (coefficient = 0.134, p-value = 0.00), indicating that tax services are associated with higher audit fees. This finding is consistent with (Davis et al., 1993; Halperin & Lai, 2014). In addition to $TAXATION_{it}$, Table 6.4 Panel C indicates that the other services, except for IT_{it}, are significantly and positively associated with $LNAF_{it}$ (p-value < 0.05).

Overall, the results reported in Table 6.4 suggest that there is no specific type of NAS that contributes to knowledge spillovers, and even if knowledge obtained from NAS exists, it is not transferred to the audit engagements. In addition, the results reported in Table 6.4 indicate that the compromise of audit independence is driven by the importance of revenue obtained from NAS, regardless of the specific type of NAS.

Table 6.4

OLS Regression Results – Impact of Types of NAS on Audit Quality

PANEL A : the Impact of Types of NAS on Earnings Management (*KOTHA-ABDAC*$_{it}$)																
Variables	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept																
TAXATION$_{it}$	0.009	0.288														
ACCOUNTING$_{it}$			-0.009	0.748												
ADVISORY$_{it}$					-0.005	0.701										
IT$_{it}$							-0.018	0.827								
DUEDILIGENCE$_{it}$									-0.000	0.998						
INTERNALAUDIT$_{it}$											-0.035	0.706				
LEGAL$_{it}$													0.032	0.477		
OTHERNAS$_{it}$															-0.023	0.280
CONTROL VARIABLES	Included		Included		Included		Included		Included		Included		Included		Included	
INDUSTRY$_{it}$	Included		Included		Included		Included		Included		Included		Included		Included	
YEAR$_{it}$	Included		Included		Included		Included		Included		Included		Included		Included	
Adjust R^2	0.473		0.473		0.473		0.473		0.473		0.473		0.473		0.473	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	7779		7779		7779		7779		7779		7779		7779		7779	
PANEL B : the Impact of Types of NAS on Audit opinion (*GC_OPINION*$_{it}$)																
Variables	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept																
TAXATION$_{it}$	-0.040	0.054														
ACCOUNTING$_{it}$			0.008	0.920												
ADVISORY$_{it}$					0.130	0.703										
IT$_{it}$							-0.125	0.748								
DUEDILIGENCE$_{it}$									0.002	0.981						
INTERNALAUDIT$_{it}$											0.093	0.836				
LEGAL$_{it}$													0.062	0.823		
OTHERNAS$_{it}$															-0.088	0.112
CONTROL VARIABLES	Included		Included		Included		Included		Included		Included		Included		Included	
INDUSTRY$_{it}$	Included		Included		Included		Included		Included		Included		Included		Included	

YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
Sig. F change	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	5476	5476	5476	5476	5476	5476	5476	5476

PANEL C : the Impact of Types of NAS on Audit Fees (*LNAF*$_{it}$)

Variables	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept																
TAXATION$_{it}$	0.143	0.00														
ACCOUNTING$_{it}$			0.119	0.00												
ADVISORY$_{it}$					0.176	0.00										
IT$_{it}$							0.125	0.14								
DUEDILIGENCE$_{it}$									0.070	0.00						
INTERNALAUDIT$_{it}$											0.308	0.00				
LEGAL$_{it}$													0.168	0.00		
OTHERNAS$_{it}$															0.126	0.00
CONTROL VARIABLES	Included		Included		Included		Included		Included		Included		Included		Included	
INDUSTRY$_{it}$	Included		Included		Included		Included		Included		Included		Included		Included	
YEAR $_{it}$	Included		Included		Included		Included		Included		Included		Included		Included	
Adjust R^2	0.682		0.671		0.687		0.671		0.671		0.671		0.671		0.672	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	7779		7779		7779		7779		7779		7779		7779		7779	

Panel A Equations: Column 1 based on *Equation [18]*, Column 2 based on *Equation [19]*, Column 3 based on *Equation [20]*, Column 4 based on *Equation [21]*, Column 5 based on *Equation [22]* , Column 6 based on *Equation [23]* Column 7 based on *Equation [24]* and Column 8 based on *Equation [25]*.

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 TAXATION_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [18]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 ACCOUNTING_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [19]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 ADVISORY_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [20]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 IT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [21]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 DUEDILIGENCE_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [22]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 INTERNALAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [23]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LEGAL_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [24]

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 OTHERNAS_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [25]

Panel B Equations: Column 1 based on *Equation [26]*, Column 2 based on *Equation [27]*, Column 3 based on *Equation [28]*, Column 4 based on *Equation [29]*, Column 5 based on *Equation [30]*, Column 6 based on *Equation [31]* Column 7 based on *Equation [32]* and Column 8 based on *Equation [33]*.

$$GC\_OPINION_{it} = B_0 + B_1TAXATION_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [26]$$

$$GC\_OPINION_{it} = B_0 + B_1ACCOUNTING_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [27]$$

$$GC\_OPINION_{it} = B_0 + B_1ADVISORY_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [28]$$

$$GC\_OPINION_{it} = B_0 + B_1IT_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [29]$$

$$GC\_OPINION_{it} = B_0 + B_1DUEDILIGENCE_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [30]$$

$$GC\_OPINION_{it} = B_0 + B_1INTERNALAUDIT_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [31]$$

$$GC\_OPINION_{it} = B_0 + B_1LEGAL_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [32]$$

$$GC\_OPINION_{it} = B_0 + B_1OTHERNAS_{it} + B_2LNASSETS_{it} + B_3ROA_{it} + B_4LEV_{it} + B_5CHANG\_LEV_{it} + B_6INVESTMENT_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9\ PBANK + B_{10}BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [33]$$

Panel C Equations: Column 1 based on *Equation [34]*, Column 2 based on *Equation [35]*, Column 3 based on *Equation [36]*, Column 4 based on *Equation [37]*, Column 5 based on *Equation [38]*, Column 6 based on *Equation [39]* Column 7 based on *Equation [40]* and Column 8 based on *Equation [41]*.

$$LNAF_{it} = B_0 + B_1TAXATION_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [34]$$

$$LNAF_{it} = B_0 + B_1ACCOUNTING_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [35]$$

$$LNAF_{it} = B_0 + B_1ADVISORY_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [36]$$

$$LNAF_{it} = B_0 + B_1IT_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [37]$$

$$LNAF_{it} = B_0 + B_1DUEDILIGENCE_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [38]$$

$$LNAF_{it} = B_0 + B_1INTERNALAUDIT_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [39]$$

$$LNAF_{it} = B_0 + B_1LEGAL_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [40]$$

$$LNAF_{it} = B_0 + B_1OTHERNAS_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it \quad [41]$$

Where:

KOTHA-ABDACit = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; MJ-ABDACit = The absolute value of discretionary accruals calculated using the modified Jones (1995) model for firm *i* at the end of time period t; GC_OPINIONit = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; LNAFit = natural logarithm of audit fees for firm *i* at the end of time period t; NONAUDITit = The total value of non-audit services for firm *i* at the end of time period t; RNONAUDITit = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; LNONAUDITit = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; HIGHNONAUDITit = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; LOWNONAUDITit = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; ABNONAUDITit = The abnormal value of NAS calculated based on S. Hossain (2013) model; TAXATIONit = Natural logarithm of fees paid for tax services for firm *i* at the end of time period t; ACCOUNTINGit = Natural logarithm of fees paid for accounting services for firm *i* at the end of time period t; ADVISORYit = Natural logarithm of fees paid for consulting and advisory services for firm *i* at the end of time period t; ITit = Natural logarithm of fees paid for IT services for firm *i* at the end of time period t; DUEDILIGENCEit = Natural logarithm of fees paid for due diligence services for firm *i* at the end of time period t*;* INTERNALAUDITit = Natural logarithm of fees paid for internal audit services for firm *i* at the end of time period t; LEGALit = Natural logarithm of fees paid for legal services for firm *i* at the end of time period t; OTHERNASit = Natural logarithm of fees paid for NAS that are not separately disclosed for firm *i* at the end of time period t; L1ACCRUAL it-1= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; LNASSETSit = Natural logarithm of total assets for firm *i* at the end of time period t; MKTBKit = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEVit = Total liabilities divided by total assets for firm *i* at the end of time period t; TENUREit = The number of audit firm tenure in years for firm *i* at the end of time period t; LNTENUREit = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFOit= Operating cash flow deflated by total assets for firm *i* at the end of time period t; ROAit = Return on total assets for firm *i* at the end of time period t (net income/total assets); INVRECit = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; SEGit = The number of geographic segments for firm *i* at the end of time period t; LNSEGit = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; LAGit = The number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period

t; LNLAGit = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; BIG4it = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; FINANCINGit = 1 if merger is not equal to 1 and number of shares outstanding increased; LOSSit = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UPit = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; INITIALYEARSit = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACEit = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; CHANG_LEVit = Change in leverage for firm *i* at the end of time period t; INVESTMENTit = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; LNAGEit = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; PBANKit = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: $-4.3 - 4.5 \times$ (net income/total assets) $+ 5.7 \times$ (total debt/total assets) $-0.004 \times$ (current assets/current liabilities); PQUALit = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

6.3 Comparison of Results

The results of regressions that examine the association between the provision of NAS and audit quality are reported in section 6.2, and the outcomes of the regressions on earnings management, audit opinion and audit fees consistently indicate that NAS is linked to poor audit quality. Also, the results of regressions that examine the association between the different types of NAS and audit quality are consistent in terms of the direction of the coefficient.

First, the three models used in this study and reported in Tables 6.1, 6.2, and 6.3 suggest that the provision of NAS lowers audit quality since the study results indicate that NAS compromises audit independence and does not contribute to knowledge spillover. For instance, $HIGHNONAUDIT_{it}$ has a positive coefficient in the earnings management model and a negative coefficient in the opinion model. Thus, both models indicate that NAS increases the economic bond and lowers the independence of auditors. In addition, Table 6.4 shows that the provision of tax services lowers audit quality since it has a negative and significant coefficient in the opinion model and a positive and significant coefficient in the audit fees model.

Second, the outcomes of the four proxies used to measure NAS are in the same direction for each model. For instance, the ratio of NAS ($RNONAUDIT_{it}$), the natural logarithm of NAS ($LNONAUDIT_{it}$), and the high values of NAS ($HIGHNONAUDIT_{it}$) have positive coefficients in the earnings management model, negative coefficients in the opinion model, and positive coefficients in the audit fees model, suggesting that the finding of this study is not driven by the use of one proxy for NAS.

Finally, the F-statistic continues to be significant at the 1% level in all regressions. The reported results for the models used in this study are relatively consistent with prior studies. The adjusted R^2 of the estimated earnings management model is 47% for all regressions and varies between 6.2% and 6.5% for the audit opinion model regressions. Also, the adjusted R^2 in the audit fee model varies between 67% and 69%.

Overall, the regression results reported in this chapter are largely consistent. Thus, the findings of this study can be confidently reported since a variety of proxies are used to measure audit quality and NAS, and these proxies report consistent results.

6.4 Chapter Summary

Chapter 6 reported the empirical results of this study. Initially, regression results examined the relationship between NAS and audit quality using three models that were examined for a pooled sample of all firm-year observations from 2014 to 2018. Consequently, the impact of the types of NAS on audit quality was examined. Finally, a comparison of the results was provided.

Chapter 7 will discuss robustness and sensitivity checks. The robustness of the findings of this study will be tested precisely using alternate measures of earnings management, government opinion, audit fees and NAS. Also, the regressions that were reported in Chapter 6 are re-performed after partitioning the sample by client characteristics, auditor attributes, audit committee characteristics, and industry. Chapter 7 also discusses the issue of endogeneity as an additional test to check the robustness of the results reported in chapter 6.

Chapter 7: Additional Analysis

7.1 Chapter Overview

Chapter 6 reported the results of OLS regressions that examined the relationship between NAS and audit quality. Chapter 6 further reported the impact of NAS on audit quality with the consideration of several categories of NAS. Finally, Chapter 6 provided a comparison of the results that were reported in the chapter.

Chapter 7 discusses the robustness and sensitivity tests of the study results. The chapter initially provides additional analysis by using alternative measures for both dependent and independent variables to ensure the reliability of the study findings. The chapter further provides several partitioning tests for this study's sample to examine factors in which NAS mostly impacts audit quality. Finally, a summary of Chapter 7 is provided.

7.2 Alternative Measures of the Dependent Variables

This chapter considers a number of sensitivity tests to ensure the robustness of the dependent variables used in the study findings. Alternative measures of the dependent variables are discussed in the following subsections.

7.2.1 Discretionary Accruals Calculated Using Modified Jones (1995) Model

To ensure the robustness of the absolute value of discretionary accruals regressions that are reported in Table 6.1 in Chapter 6, the regressions are re-performed using the absolute value of discretionary accruals calculated using the cross-sectional version of Dechow, Sloan, and Sweeney's (1995) modified Jones model. The alternative measure of discretionary accruals is estimated in the following equation:

$$DAC_{it} = \alpha 0 + \alpha 1\ (1/TA_{it-1}) + \alpha 2\ ((\Delta SALES_{it}/TA_{it-1}) - (\Delta AR_{it}/TA_{it-1})) + \alpha 3\ (PPEit/TA_{it-1}) + \varepsilon_{it} \quad [42]$$

Where:

DAC_{it} = Total accruals of firm *i* for time period *t* scaled by Total assets of firm *i* at the end of time period *t*-1.
TA_{it-1} = Total assets of firm *i* at the end of time period *t*-1.
$\Delta SALES_{it}$ = Change in net sales of firm *i* between time period *t*-1 and time period *t*.

ΔAR_{it}	=	Change in accounts receivables of firm *i* from the beginning of time period *t* until the end of time period *t*.
PPE_{it}	=	Gross book value of the property plant and equipment of firm *i* at the end of time period *t*.
$\alpha 0$	=	Constant
$\alpha 1, \alpha 2, \alpha 3$	=	Estimated coefficients.
ε_{it}	=	The error term representing discretionary accruals of firm *i* for time period *t*.

Table 7.1 reports the regression results in which the NAS proxies are regressed against the absolute value of discretionary accruals calculated using the modified Jones (1995) model ($MJ\text{-}ABDAC_{it}$). Table 7.1 Column 1 shows that the coefficients on $RNONAUDIT_{it}$ remain to be positive and insignificant (coefficient = 0.076 and p-value = 0.238), which ensures the robustness of the study results. Also, Table 7.1 Column 2 shows that the coefficients on $LNONAUDIT_{it}$ remain positive and insignificant (coefficient = 0.021 and p-value = 0.218), which ensures the robustness of the study result. Table 7.1 Columns 3 and 4 further report marginally significant results for $HIGHNONAUDIT_{it}$ (coefficient = 0.037 and p-value = 0.059) and $LOWNONAUDIT_{it}$ (coefficient = -0.037 and p-value = 0.059), which can be comparable to the ones reported in Table 6.1.

Moreover, Table 7.1 reports several control variables that are significantly associated with the alternative measure of earnings management (namely, $LNASSETS_{it}$, $L1ACCRUAL_{it-1}$, $MKTBK_{it}$, LEV_{it}, $LNTENURE_{it}$, CFO_{it-1}, ROA_{it}, $FINANCING_{it}$, and $LOSS_{it}$). Thus, these control variables are significant predictors of the absolute value of discretionary accruals, which ensures the robustness of the model used in the study findings.

Finally, the *F*-statistic also remains significant at the 1% level in each of the four regressions. The adjusted R^2 is 46%, which is comparable to the one reported in Table 6.1. Overall, the results reported in Table 7.1 are consistent with the study findings reported in Table 6.1.

Table 7.1

OLS Regression Results – the Impact of NAS on the Absolute Value of Discretionary Accruals Calculated Using the Cross-Sectional Version of Dechow, Sloan, and Sweeney's (1995) Modified Jones Model

	Column 1		Column2		Column 3		Column 4	
Variables	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.520	0.000	0.480	0.000	0.493	0.000	0.530	0.000
$RNONAUDIT_{it}$	0.076	0.238						
$LNONAUDIT_{it}$			0.021	0.218				
$HIGHNONAUDIT_{it}$					0.037	0.059		
$LOWNONAUDIT_{it}$							-0.037	0.059
$LNASSETS_{it}$	-0.027	0.022	-0.031	0.012	-0.025	0.037	-0.025	0.037
$L1ACCRUAL_{it-1}$	0.310	0.000	0.309	0.000	0.309	0.000	0.309	0.000
$MKTBK_{it}$	-0.002	0.067	-0.002	0.063	-0.002	0.070	-0.002	0.070
LEV_{it}	0.020	0.000	0.019	0.000	0.019	0.000	0.019	0.000
$LNTENURE_{it}$	-0.081	0.000	-0.083	0.000	-0.080	0.001	-0.080	0.001
$LnAGE_{it}$	0.023	0.336	0.021	0.364	0.022	0.341	0.022	0.341
CFO_{it-1}	-0.683	0.000	-0.683	0.000	-0.683	0.000	-0.683	0.000
ROA_{it}	-0.088	0.000	-0.087	0.000	-0.088	0.000	-0.088	0.000
$Big4_{it}$	-0.009	0.630	-0.009	0.612	-0.008	0.667	-0.008	0.667
$FINANCING_{it}$	-0.074	0.000	-0.074	0.000	-0.074	0.000	-0.074	0.000
$LOSS_{it}$	-0.265	0.000	-0.264	0.000	-0.266	0.000	-0.266	0.000
ACE_{it}	-0.016	0.627	-0.019	0.556	-0.014	0.661	-0.014	0.661
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R Square	0.468		0.468		0.469		0.469	
Sig. F change	0.00		0.00		0.00		0.00	
Observations	7779		7779		7779		7779	

Regressions' Equations: Column 1 based on *Equation [43]*, Column 2 based on *Equation [44]*, Column 3 based on *Equation [45]* and Column 4 based on *Equation [46]*.

$$MJ\text{-}ABDAC_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [43]$$

$$MJ\text{-}ABDAC_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [44]$$

$$MJ\text{-}ABDAC_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [45]$$

$$MJ\text{-}ABDAC_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [46]$$

Where:

$MJ\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the modified Jones (1995) model for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before

extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of total assets for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.2.2 The Exclusion of First-Time GCOs

Previous studies indicate that the issuance of a GCO for the first time can be more challenging for an auditor as it may require a distinct approach to modelling[66] the auditor's opinion (Mutchler, 1984; Carcello & Neal, 2003; Geiger & Rama, 2003; Robinson, 2008; Wu, Hsu, & Haslam, 2016). Indeed, the opinion model should consider two types of GCO misclassifications (errors): (a) firms that receive a GCO but continue to be viable (a Type I error); and (b) bankrupt firms that did not receive a GCO prior to failure (a Type II error) (Geiger et al., 1998).[67] Several studies conclude that the likelihood of misclassifications is higher for first-time GCOs, and firms with first-time GCOs are less likely to fail in the subsequent year[68] (Citron & Taffler, 1992; Lennox, 1999; Knechel & Vanstraelen, 2007; Carey et al., 2008). Carson et al. (2013) claim that the lack of auditors' expertise could result in misclassification errors. Therefore, the regressions in the opinion model that are reported in Table 6.2 are re-performed after re-calculate GCOs and deleting observations with first-time GCOs

[66] According to Hussin, Bamahros, and Shukeri (2018), new engagement partners require additional time to obtain client information and become familiar with client-specific information.

[67] Geiger and Raghunandan (2002) note that auditors frequently make errors during the initial years of an audit engagement by failing to provide a going concern opinion to companies that have been determined to be bankrupt (a Type 2 error).

[68] In the UK, 76–80% of firms survive a year after a first-time going-concern opinion (Citron and Taffler 1992; Lennox 1999), while according to Carey et al (2008) the percentage is 88% in Australia.

(506 observations in the sample received first-time GCOs). The number of issuing GCOs went down from 1756 to 1250 observations.

Table 7.2 reports the results of the OLS regressions where the GCOs is the dependent variable. The coefficients of NAS proxies continue to be negative and statistically significant, which supports the results of the study tests. For instance, Table 7.1 Columns 1, 2 and 3 report negative but significant results for $RNONAUDIT_{it}$ (coefficient = -0.239 and p-value = 0.000), $LNONAUDIT_{it}$ (coefficient = -0.043 and p-value = 0.007) and $HIGHNONAUDIT_{it}$ (coefficient = -0.049 and p-value = 0.004). Table 7.1 Column 4 further reports a positive and significant result for $LOWNONAUDIT_{it}$ (coefficient = 0.055 and p-value = 0.000), which is consistent with the result reported in Table 6.2 in Chapter 6.

Moreover, Table 7.1 reports several control variables that are significantly associated with the alternative measure of auditors' opinion (namely, $LNASSETS_{it}$, LEV_{it}, $INVESTMENT_{it}$, $LNAGE_{it}$, $PBANK_{it}$, $LOSS_{it}$ and $PQUAL_{it}$). Thus, these control variables are significant predictors of auditors' opinion, which ensures the robustness of the model used in the study findings. Table 7.2 also reports the adjusted R^2 which varies between 7.7% and 7.9% and can be comparable to the adjusted R^2 reported in Table 6.2. Finally, the F-statistic change remains at 1% significant level. Overall, the findings in this section are consistent with the study results shown in Table 6.2 and confirm the robustness of the measurement used in the opinion model.

Table 7.2

OLS Regression Results – Impact of NAS on Auditor Opinion (Excluding First-Time Going-Concern Opinions)

Variable	Column 1 coefficient	p-value	Column2 coefficient	p-value	Column 3 coefficient	p-value	Column 4 coefficient	p-value
Intercept	0.712	0.000	0.789	0.000	0.644	0.000	0.670	0.000
$RNONAUDIT_{it}$	-0.239	0.000						
$LNONAUDIT_{it}$			-0.043	0.007				
$HIGHNONAUDIT_{it}$					-0.049	0.004		
$LOWNONAUDIT_{it}$							0.055	0.000
$LNASSETS_{it}$	-0.067	0.000	-0.061	0.000	-0.065	0.000	-0.072	0.000
ROA_{it}	0.006	0.111	0.006	0.143	0.006	0.118	0.006	0.094
LEV_{it}	0.011	0.001	0.012	0.001	0.011	0.002	0.011	0.001
$CHANG\_LEV_{it}$	0.000	0.838	0.001	0.816	0.000	0.825	0.000	0.825
$INVESTMENT_{it}$	-0.187	0.000	-0.190	0.000	-0.187	0.000	-0.190	0.000
$LNAGE_{it}$	0.036	0.055	0.041	0.029	0.039	0.040	0.042	0.026
CFO_{it-1}	0.008	0.228	0.009	0.199	0.009	0.204	0.009	0.200
$PBANK_{it}$	-0.000	0.014	-0.000	0.014	-0.000	0.014	-0.000	0.015
$BIG4_{it}$	-0.014	0.289	-0.014	0.309	-0.015	0.254	-0.017	0.213
$LOSS_{it}$	0.070	0.007	0.070	0.007	0.071	0.006	0.071	0.006
$PQUAL_{it}$	0.334	0.000	0.334	0.000	0.334	0.000	0.335	0.000
ACE_{it}	-0.040	0.310	-0.027	0.489	-0.032	0.410	-0.041	0.293
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R Square	0.079		0.077		0.077		0.078	
Sig. F change	0.00		0.00		0.00		0.00	
Observations	4970		4970		4970		4970	

Regressions' Equations: Column 1 based on *Equation [47]*, Column 2 based on *Equation [48]*, Column 3 based on *Equation [49]* and Column 4 based on *Equation [50]*.

$$GC\_OPINION_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [47]$$

$$GC\_OPINION_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [48]$$

$$GC\_OPINION_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [49]$$

$$GC\_OPINION_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [50]$$

Where:

$GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise (excluding the first-time going-concern opinion); $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm

i at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees less than the median for firm *i* at the end of time period t, and 0 otherwise; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning-of-year total assets for firm *i* at the end of time period t-1; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.
Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.2.3 Audit Fees Ratio

The results of the audit fees model, which are reported in Table 6.3 in Chapter 6, control for linearity issues by applying the natural log of audit fees. To ensure the robustness of the audit fees data used in this study, the audit fees are scaled by total assets to control for cross-sectional differences associated with firms' size, as larger firms charge higher fees due to their size.

Table 7.3 reports the regression results in which the NAS proxies are regressed against audit fees scaled by total assets. The coefficients reported in Table 7.3 Columns 1 2, 3 and 4 remain positive and significant for $RNONAUDIT_{it}$ (coefficient = 0.101 and p-value = 0.000), $LNONAUDIT_{it}$ (coefficient = 0.007 and p-value = 0.000), $HIGHNONAUDIT_{it}$ (coefficient = 0.002 and p-value = 0.089) and $LOWNONAUDIT_{it}$ (coefficient = 0.004 and p-value = 0.005), which ensures the robustness of the study result.

Table 7.3 reports several control variables that are significantly associated with the alternative measure of audit fees (namely, $LNASSETS_{it}$, $MKTBK_{it}$, LEV_{it}, $LNTENURE_{it}$, ROA_{it}, $LNSEG_{it}$, $BIG4_{it}$, EPS_UP_{it} and ACE_{it}). Thus, these control

variables are significant predictors of audit fees, which ensures the robustness of the model used in the study findings.

The adjusted R^2 reported in Table 7.2 varies between 50.1% and 50.4% and the F-statistic change remains at 1% significant level. Overall, the findings in this section are consistent with the study results shown in Table 6.3 and confirm the robustness of the measurement used in the audit fee model.

Table 7.3

OLS Regression Results – the Impact of NAS on Audit Fees Scaled by Firms' Size

Variables	Column 1 coefficient	p-value	Column 2 coefficient	p-value	Column 3 coefficient	p-value	Column 4 coefficient	p-value
Intercept	0.066	0.000	0.051	0.000	-0.011	0.000	0.004	0.005
$RNONAUDIT_{it}$	0.101	0.000						
$LNONAUDIT_{it}$			0.007	0.000				
$HIGHNONAUDIT_{it}$					0.002	0.089		
$LOWNONAUDIT_{it}$							0.004	0.005
$LNASSETS_{it}$	-0.011	0.000	-0.013	0.000	-0.011	0.000	-0.011	0.000
$MKTBK_{it}$	0.000	0.012	0.000	0.005	0.000	0.010	0.000	0.014
LEV_{it}	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000
$LNTENURE_{it}$	0.007	0.005	0.007	0.007	0.007	0.004	0.007	0.004
ROA_{it}	-0.010	0.000	-0.010	0.000	-0.010	0.000	-0.010	0.000
$INVREC_{it}$	-0.005	0.153	-0.005	0.153	-0.005	0.155	-0.005	0.117
$LNSEG_{it}$	0.003	0.081	0.003	0.192	0.003	0.080	0.003	0.100
$LNLAG_{it}$	0.000	0.857	0.001	0.679	0.000	0.855	0.000	0.890
$BIG4_{it}$	0.004	0.005	0.003	0.009	0.004	0.004	0.004	0.003
EPS_UP_{it}	-0.003	0.029	-0.002	0.041	-0.002	0.033	-0.003	0.028
$INITIALYEARS_{it}$	-0.002	0.269	-0.001	0.281	-0.001	0.329	-0.001	0.388
ACE_{it}	0.008	0.000	0.008	0.000	0.009	0.000	0.009	0.000
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R Square	0.504		0.504		0.500		0.501	
Sig. F change	0.00		0.00		0.00		0.00	
Observations	7779		7779		7779		7779	

Regressions' Equations: Column 1 based on *Equation [52]*, Column 2 based on *Equation [53]*, Column 3 based on *Equation [54]* and Column 4 based on *Equation [55]*.

$$AFR_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [52]$$

$$AFR_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [53]$$

$$AFR_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [54]$$

$AFR_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11}\, EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [55]

Where:

AFR_{it} = The ratio of audit fees to total assets for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$)

7.3 Alternative Measures of Independent Variable

7.3.1 Abnormal Non-Audit Fees

While the study results reported in Chapter 6 measure NAS by four different proxies, this study measures NAS using an additional measurement that is the abnormal non-audit services fees ($ABNONAUDIT_{it}$). This study uses $ABNONAUDIT_{it}$ as an independent variable since the actual fees are restricted to capturing the economic bond in the absence of adequate controls on cross-sectional variations in effort costs and litigation risks (Eshleman & Guo, 2014). Although the variations in actual fees could justify the variations in effort costs and client risks, the use of actual fees as a measurement for economic bond could lead to nontrivial measurement errors in the regression. (Choi, Kim, & Zang, 2010).

It is important to specify an expectation model correlating actual NAS fees to their determinants that identified in prior studies, such as client size, client complexity, and client-specific risk (DeFond et al., 2002; Frankel, Johnson & Nelson, 2002; Huang, Raghunandan & Rama, 2009). The residuals of this model, which represents the abnormal NAS fees, can be used as a proxy for NAS that can best describe the association between NAS and audit quality. Thus, following S. Hossain (2013) model, this study adopts an ordinary least squares (OLS) model to calculate the abnormal NAS fees for each year separately by regressing the natural logarithm of NAS against several control variables. The model is identified in the following equation:

$$LNNAS_{it} = b0 + b1\ LNASSETS_{it} + b2BIG4_{it} + b3EQUITY_{it} + b4GROWTH_{it} + b5\ MKTBK_{it} + b6LEV_{it} + b7NEGROA_{it} + b8\ ROA_{it} + b9\ MERGACQS_{it} + b10LNSUBS_{it} + b11FOROPS_{it} + b12USLIST_{it} + b13INDUSTRY_{it} + \varepsilon_{it} \quad [51]$$

Where

$LNNAS_{it}$	=	Natural log of non-audit services fees.
$LNASSETS_{it}$	=	Natural log of total assets.
$Big4_{it}$	=	1 if the audit firm is a Big4 firm, and 0 otherwise.
$EQUITY_{it}$	=	1 if firm *i* issued new shares in the current year, and 0 otherwise.
$GROWTH_{it}$	=	Change of assets from prior year.
$MKTBK_{it}$	=	Market-to-book value.
LEV_{it}	=	Total liabilities divided by total assets.
$NEGROA_{it}$	=	1 if firm *i* reports a negative return on assets in the current year *t*.
ROA_{it}	=	Earnings before interest and taxes divided by total assets.
$MERGACQS_{it}$	=	1 if firm *i* has merger or acquisition activities during year *t*.
$LNSUBS_{it}$	=	Natural log of number of subsidiaries.
$FOROPS_{it}$	=	1 if firm *i* has any foreign subsidiaries in year *t*, and 0 otherwise.
$USLIST_{it}$	=	1 if firm *i* is cross-listed in the US, and 0 otherwise.
$INDUSTRY_{it}$	=	1 if firm *i* in time period *t* is from GICS industry.

The abnormal of NAS ($ABNONAUDIT_{it}$) model identified in equation 2 includes the log of total assets ($LNASSETS_{it}$) as a control variable since NAS fees are more likely to increase with firm size (Palmrose, 1986b). Thus, the correlation between NAS fees and $LNASSETS_{it}$ is expected to be positive. The model also includes $BIG4_{it}$ to control for the capacity of an auditor to provide non-audit services, and NAS is expected to have a positive correlation with $BIG4_{it}$ (Francis & Yu, 2009). *EQUITYit*, $GROWTH_{it}$, and $MKTBK_{it}$ are included in the model to control for the impact of client's growth on NAS, and it is expected that NAS will be correlated positively with $EQUITY_{it}$ and $GROWTH_{it}$, and negatively with $MKTBK_{it}$ because NAS is more likely to increase with high growth firms (Choi & Wong, 2007). ROA_{it}, LEV_{it} and $NEGROA_{it}$ are included in the abnormal NAS fees model to control for the clients' risk, and they are expected to be correlated with NAS positively since NAS is more likely to increase

with risky clients (Simunic & Stein, 1996*). $MERGACQS_{it}$, $LnSUBS_{it}$* and $FOROPS_{it}$ are used to control for client complexity, and they are expected to have a positive correlation with NAS fees since firms with more complex operations are expected to be charged higher NAS fees (Whisenant, Sankaraguruswamy, & Raghunandan, 2003). $USLIST_{it}$ is included in the model to control firms that are US cross-listing since these firms are subject to an additional criterion in US regulations (S. Hossain, 2013). $INDUSTRY_{it}$ variable is used to control for cross-industry differences in NAS fees (Ashbaugh et al., 2003; Ruddock, S. J Taylor, & S. L Taylor, 2006). Following S. Hossain (2013), for the calculation of $ABNONAUDIT_{it}$, observations without NAS fees are replaced with 1 for logarithmic transformation purposes.

Table 7.4 reports the regression results in which $ABNONAUDIT_{it}$ is regressed against the $KOTHA\text{-}ABDAC_{it}$ (Column 1), $GC\_OPINION_{it}$ (Column 2), and $LNAF_{it}$ (Column 3). Table 7.4 Column 1 indicates that $ABNONAUDIT_{it}$ is not associated with earnings management since it has insignificant results (p-value = 0.314), which is consistent with (S. Hossain, 2013; Singh, Singh, Sultana & Evans, 2019). On the other hand, Table 7.4 Column 2 shows that the $ABNONAUDIT_{it}$ is significantly but negatively associated with $GC\_OPINION_{it}$ (coefficient = -0.050 and p-value = 0.008), which conforms to what S. Hossain (2013) finds pre- CLERP 9. This result suggests that auditors are less likely to issue GCOs when the $ABNONAUDIT_{it}$ is increased. Also, Table 7.4 Column 3 indicates the $ABNONAUDIT_{it}$ to have a positive and significant coefficient (coefficient = 0.007 and p-value = 0.013), suggesting that the positive abnormal value of NAS is associated with higher audit fees. The adjusted R square values are comparable to the ones reported in Chapter 6, and the F-statistic change remains at 1% significant level.

Table 7.4

Regression Results – the Alternative measures of NAS; and

OLS Regression Results – the Impact of Abnormal NAS on Audit Quality

Variables	Column 1: *KOTHA-ABDACit*		Column 2: $GC\_OPINION_{it}$		Column 3: $LNAF_{it}$	
	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.268	0.000	0.701	0.000	2.263	0.000
$ABNONAUDIT_{it}$	0.003	0.314	-0.050	0.008	0.007	0.013
Control Variables	Included	Included	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included
Adjust R Square	0.550		0.060		0.671	
Sig. F change	0.00		0.00		0.00	
Observations	7779		5476		7779	

Regressions' Equations: Column 1 based on *Equation [56]*, Column 2 based on *Equation [57]*, and Column 3 based on *Equation [58]*.

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 ABNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [56]

$GC\_OPINION_{it} = B_0 + B_1 ABNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [57]

$LNAF_{it} = B_0 + B_1 ABNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [58]

Where

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $ABNONAUDIT_{it}$ = The abnormal value of NAS calculated based on S. Hossain (2013) model; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm I at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning-of-year total assets for firm *i* at the end of time period t; ROA_{it} = Return on total assets for firm *i* at the end of time period t-1 (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t,

which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.
Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.3.2 Total Fees

An auditor can rely financially on a client by both audit fees and NAS (Geiger & Rama, 2003). DeFond et al. (2002) claim that due to the potential impact on audit independence, regulators are concerned about the fees paid to auditors, including NAS, audit and total fees. Markelevich and Rosner (2013) report a positive association between total fees paid to an auditor and economic dependence. Thus, the total fees paid to the auditor can be used as an alternative measure to capture the economic bond between auditors and their clients (Gul, Jaggi & Krishnan, 2007; H. Huang et al., 2007: Callaghan, Parkash, & Singhal, 2009; Foster & Shastri, 2016).

Table 7.5 reports the regression results in which the natural logarithm of total fees paid to the auditor ($LNTOTFEES_{it}$) is regressed against the $KOTHA\text{-}ABDAC_{it}$ (Column 1), and $GC\_OPINION_{it}$ (Column 2). Table 7.5 Column 1 indicates that $LNTOTFEES_{it}$ is not associated with earnings management since it has insignificant results (coefficient = 0.007 and p-value = 0.455), which is consistent with (Gul, Jaggi & Krishnan, 2007; Huang, Mishra & Raghunandan, 2007).

On the other hand, Table 7.5 Column 2 shows that the $LNTOTFEES_{it}$ has a negative coefficient and a marginally significant result (coefficient = -0.046 and p-value = 0.091), implying that the increase of the total fees paid to the auditor is associated with the decrease in the issuance of GCOs. This finding is consistent with (Willenborg, 1999; Goodwin & Wu, 2014). The adjusted R^2 values reported in Table 7.5 Columns 1 and 2 are 47.3% and 5.9% respectively. The F-statistic change is at a 1% significant level in Columns 1 and 2. Overall, the regression results reported in Table 7.5 ensure the reliability of the study findings reported in Table 6.1 and 6.2.

Table 7.5

Regression Results – The Alternative Measures of NAS; and

OLS Regression Results – the Impact of Total Fees on Audit Quality

Variables	Column 1: *KOTHA-ABDACit*		Column 2: $GC\_OPINION_{it}$	
	coefficient	p-value	coefficient	p-value
Intercept	0.563	0.000	0.874	0.000
$LNTOTFEES_{it}$	0.007	0.455	-0.046	0.091
CONTROL VARIABLES	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included
Adjust R Square	0.473		0.059	
Sig. F change	0.00		0.00	
Observations	7779		5476	

Regressions' Equations: Column 1 based on *Equation [59]* and Column 2 based on *Equation [60]*

$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LNTOTFEES_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [59]

$GC\_OPINION_{it} = B_0 + B_1 LNTOTFEES_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [60]

Where

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of total fees paid for auditor for firm *i* at the end of time period t; $L1ACCRUAL_{it-1}$ = Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0

otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.
Significant level at 1% (p<0.01), at 5% (p<0.05), at 10% (p<0.1)

7.4 Partitioning of the Sample by Client Characteristics

The literature on audit quality indicates that the impairment of audit quality is even more sensitive for clients with certain characteristics (Craswell, Francis & Taylor 1995). Following Whisenant, Sankaraguruswamy and Raghunandan (2003), this study partitions the sample data based on firm size (where large firms have total assets equal or higher than the median of total assets). Also, following Collins, Pungaliya and Vijh (2016), this study partitions the sample data based on firm growth (where higher growth firms have values equal or higher than the median of the ratio of total market capitalisation to the total book value of assets).

7.4.1 Partitioning by Client Firms' Size

In order to ensure that the findings of the study on the association between NAS and audit quality are not driven by variations in the size of the client firm, the sample is divided into large and small client firms on the basis of total assets and the multivariate tests in Chapter 6 are re-performed. Results from the additional tests of regression performed (using large and small firms)[69] are reported in Table 7.6. Panel A reports regression outcomes related to Table 6.1 findings (that is, absolute value of discretionary accruals, calculated by the Kothari (2005) model), Panel B reports regression outcomes related to Table 6.2 findings (that is, the issuance of GCOs model), and Panel C reports regression outcomes related to Table 6.3 (that is, the audit fees model).

Table 7.6 shows that all coefficients on variables listed in Table 7.6 Panel A, B and C are in the same direction as those found in Table 6.1, Table 6.2 and Table 6.3. Consistent with the study findings reported in Table 6.1, Table 7.6 Panel A Columns 1, 2, 5 and 6 show that the coefficients on $RNONAUDIT_{it}$ and $LNONAUDIT_{it}$ are consistently positive and insignificant for both large and small client firms. However, Table 7.6 Panel A Column 3 and 4 show that the coefficients on $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are statistically insignificant for large client firms, while

[69] The split point is the median.

Columns 7 and 8 report marginally significant results for small client firms (*HIGHNONAUDIT*$_{it}$, coefficient = 0.029 and p-value = 0.056; *LOWNONAUDIT*$_{it}$, coefficient = -0.029 and p-value = 0.056). Thus, the significant results reported in Table 6.1 Columns 3 and 4, which document the association between the higher (lower) values of NAS and the absolute value of discretionary accruals, are driven by small client firms, implying that smaller firms are more likely to manage earnings when they purchase higher values of NAS.

Moreover, consistent with the study findings reported in Table 6.2, Table 7.6 Panel B Columns 1, 2, 3, 5, 6 and 7 show that the coefficients on *RNONAUDIT*$_{it}$, *LNONAUDIT*$_{it}$ and *HIGHNONAUDIT*$_{it}$ are consistently negative but significant for both large and small client firms. Also, Table 7.6 Panel B Columns 4 and 8 show that the coefficients on *LOWNONAUDIT*$_{it}$ are consistently positive and significant for both large and small client firms. Thus, the additional tests reported in Table 7.6 Panel B evidently confirm the study results identified in Chapter 6, that is, the provision of NAS is associated negatively with the issuance of GCOs.

Furthermore, consistent with the study findings reported in Table 6.3, the additional tests reported in Table 7.6 Panel C show that all coefficients on *RNONAUDIT*$_{it}$, *LNONAUDIT*$_{it}$, *HIGHNONAUDIT*$_{it}$ and *LOWNONAUDIT*$_{it}$ are consistently positive and significant for both large and small client firms. Thus, the additional tests reported in Table 7.6 Panel C evidently confirm the study results identified in Chapter 6, that is, the provision of NAS is associated positively with additional audit work.

Finally, Table 7.6 Panel A Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for the subsample of large firms, which ranges from 43.9% to 44.9% (that is lower than the ones reported in Table 6.1, which is equal to 47.3%), while Table 7.6 Panel A Column 5, 6, 7 and 8 the values of adjusted-R^2 for the subsample of small firms which equals to 48% (that is barely higher than the ones reported in Table 6.1, which is equal to 47.3%). Also, Table 7.6 Panel B Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for the subsample of large firms which ranges from 10.2% to 10.4% (that is higher than the ones reported in Table 6.2 which ranges from 6.2% to 6.5%), while Table 7.6 Panel B Columns 5, 6, 7 and 8 report the values of adjusted-R^2 for subsample of small firms which ranges from 3.8% to 4.7% (that is lower than the ones reported in Table 6.2 which ranges from 6.2% to 6.5%). Moreover, Table 7.6 Panel C Columns 1, 2, 3

and 4 report the values of adjusted-R^2 for the subsample of large firms which ranges from 64% to 67% (that is lower than the ones reported in Table 6.3 which ranges from 67.2% to 69.4%) while Table 7.6 Panel C Columns 5, 6, 7 and 8 report the values of adjusted-R^2 for subsample of small firms which ranges from 25.8% to 27.2% (that is much lower than the ones reported in Table 6.2 which ranges from 67.2% to 69.4%).

Overall, the additional tests reported in Table 7.6 clearly support the study results reported in Table 6.1, Table 6.2, and Table 6.3, thereby suggesting that the study's results are not driven by client firm size.

Table 7.6

Regression Results Partitioning Sample Based on Client Firm Size (the Median of Total Assets)

PANEL A: OLS Regression Results – the Impact of NAS on the Absolute Value of Discretionary Accruals (*KOTHA-ABDAC$_{it}$*)

Variables	Large Firms								Small Firms							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.274	0.000	0.263	0.000	0.269	0.000	0.267	0.000	0.140	0.132	0.150	0.190	0.170	0.068	0.158	0.090
RNONAUDIT$_{it}$	0.021	0.198							0.055	0.346						
LNONAUDIT$_{it}$			0.002	0.653							0.004	0.837				
HIGHNONAUDIT$_{it}$					0.007	0.250							0.029	0.056		
LOWNONAUDIT$_{it}$							-0.007	0.250							-0.029	0.056
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	.449		0.439		0.439		0.439		0.480		0.480		0.480		0.480	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3890		3890		3890		3890		3889		3889		3889		3889	

PANEL B: OLS Regression Results – the Impact of NAS on auditor opinion (*GC_OPINION$_{it}$*)

Variables	Large Firms								Small Firms							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	1.195	0.000	1.268	0.000	1.139	0.000	1.178	0.000	0.489	0.000	0.495	0.000	0.396	0.004	0.430	0.002
RNONAUDIT$_{it}$	-0.195	0.008							-0.346	0.000						
LNONAUDIT$_{it}$			-0.056	0.007							-0.023	0.003				
HIGHNONAUDIT$_{it}$					-0.059	0.011							-0.063	0.003		
LOWNONAUDIT$_{it}$							0.059	0.011							0.063	0.003
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.104		0.105		0.102		0.104		0.042		0.038		0.040		0.047	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	5476		5476		5476		5476		5476		5476		5476		5476	

PANEL C: OLS Regression Results – the Impact of NAS on Audit Fees (*LNAF$_{it}$*)

Variables	Large Firms								Small Firms							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value

Intercept	1.428	0.000	1.150	0.000	1.376	0.000	1.389	0.000	3.326	0.000	2.931	0.000	3.274	0.000	3.290	0.000
$RNONAUDIT_{it}$	1.595	0.000							0.134	0.000						
$LNONAUDIT_{it}$			0.165	0.000							0.095	0.000				
$HIGHNONAUDIT_{it}$					0.025	0.019							0.006	0.000		
$LOWNONAUDIT_{it}$							0.077	0.000							0.085	0.000
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.664		0.670		0.640		0.644		0.262		0.272		0.258		0.277	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3890		3890		3890		3890		3889		3889		3889		3889	

Panel A Equations: Column 1 and 5 based on *Equation [61]*, Column 2 and 6 based on *Equation [62]*, Column 3 and 7 based on *Equation [63]*, and Column 4 and 8 based on *Equation [64]*.

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [61]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [62]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [63]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [64]$$

Panel B Equations: Column 1 and 5 based on *Equation [65]*, Column 2 and 6 based on *Equation [66]*, Column 3 and 7 based on *Equation [67]*, and Column 4 and 8 based on *Equation [68]*.

$$GC\_OPINION_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [65]$$

$$GC\_OPINION_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [66]$$

$$GC\_OPINION_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [67]$$

$$GC\_OPINION_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [68]$$

Panel C Equations: Column 1 and 5 based on *Equation [69]*, Column 2 and 6 based on *Equation [70]*, Column 3 and 7 based on *Equation [71]*, and Column 4 and 8 based on *Equation [72]*.

$$LNAF_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [69]$$

$LNAF_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [70]

$LNAF_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [71]

$LNAF_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [72]

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$)

7.4.2 Partitioning by Client Firm Growth

Prior studies indicate that it is essential to consider the effects of firm growth in order to avoid Type I error rates in examining earnings management (Collins, Pungaliya, & Vijh, 2016). Also, firm growth is a significant factor in audit opinion decisions (Krishnan & Krishnan, 1996; Caramanis & Spathis, 2006). Thus, the sample is divided into high-growth and low-growth client firms on the basis of the ratio of total market capitalisation to the total book value of assets ($MKTBK_{it}$),[70] and the study multivariate tests in Chapter 6 are re-performed.

Table 7.7 Panel A Columns 1, 2, 5 and 6 show that the coefficients on $RNONAUDIT_{it}$ and $LNONAUDIT_{it}$ are consistently positive and insignificant for both high-growth and low-growth client firms. Table 7.7 Panel A Columns 3 and 4 show that the coefficients on $HIGHNONAUDIT_{it}$ (coefficient = 0.026 and p-value = 0.041) and $LOWNONAUDIT_{it}$ (coefficient = -0.026 and p-value = 0.041) are statistically significant for high-growth firms, while Columns 7 and 8 report insignificant results for low-growth firms. Thus, the significant results reported in Table 6.1 Columns 3 and 4, which document the association between the higher (lower) values of NAS and the absolute value of discretionary accruals, are affected by the high-growth firms, implying that high-growth firms are more likely to manage earnings when they purchase higher values of NAS.

Moreover, consistent with the study findings reported in Table 6.2, Table 7.7 Panel B Columns 1, 2, 3, 5, 6 and 7 show that the coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$ and $HIGHNONAUDIT_{it}$ are consistently negative but significant for both high-growth and low-growth client firms. Also, Table 7.7 Panel B Columns 4 and 8 show that the coefficients on $LOWNONAUDIT_{it}$ are consistently positive and significant for high-growth and low-growth client firms. Thus, the additional tests reported in Table 7.7 Panel B evidently confirm the study results identified in Chapter 6, that is, the provision of NAS is associated negatively with the issuance of GCOs.

Furthermore, consistent with the study findings reported in Table 6.3, the additional tests reported in Table 7.7 Panel C shows that all coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are

[70] The split point is the median.

consistently positive and significant for both high-growth and low-growth client firms. Thus, the additional tests reported in Table 7.7 Panel C evidently confirm the study results identified in Chapter 6, that is, the provision of NAS is associated positively with additional audit work.

Finally, Table 7.7 Panel A Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for the subsample of high-growth firms which equals 42.1% (that is lower than the ones reported in Table 6.1 which equals 47.3%) while Table 7.7 Panel A Columns 5, 6, 7 and 8 report the values of adjusted-R^2 for the subsample of low-growth firms which equals 60.3% (that is much higher than the ones reported in Table 6.1 which equals 47.3%). Also, Table 7.7 Panel B Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for the subsample of high-growth firms which range from 8.3% to 8.7% (that is higher than the ones reported in Table 6.2 which range from 6.2% to 6.5%) while Table 7.6 Panel B Columns 5, 6, 7 and 8 report the values of adjusted-R^2 for subsample of low-growth firms which ranges from 6.8% to 7% (that is higher than the ones reported in Table 6.2 which ranges from 6.2% to 6.5%). Moreover, Table 7.7 Panel C Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for the subsample of high-growth firms, which ranges from 72.1% to 73.5% (that is higher than the ones reported in Table 6.3 which ranges from 67.2% to 69.4%) while Table 7.6 Panel C Columns 5, 6, 7 and 8 report the values of adjusted-R^2 for subsample of low-growth firms which ranges from 63.3% to 64.2% (that is barely lower than the ones reported in Table 6.2 which ranges from 67.2% to 69.4%).

Overall, the additional tests reported in Table 7.7 clearly support the study results reported in Table 6.1, Table 6.2, and Table 6.3, thereby suggesting that the study's results are not driven by the growth of client firms.

Table 7.7

Regression Results Partitioning Sample Based on Client Firm Growth (MKTBKit)

PANEL A: OLS regression results – the impact of NAS on the absolute value of discretionary accruals (*KOTHA-ABDAC$_{it}$*)

Variables	High Growth								Low Growth							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.288	0.000	0.295	0.000	0.302	0.000	0.301	0.000	0.344	0.000	0.337	0.000	0.355	0.000	0.350	0.000
RNONAUDIT$_{it}$	0.050	0.154							0.018	0.555						
LNONAUDIT$_{it}$			0.002	0.796							0.004	0.607				
HIGHNONAUDIT$_{it}$					0.026	0.041							0.006	0.499		
LOWNONAUDIT$_{it}$							-0.026	0.041							-0.006	0.499
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.421		0.421		0.421		0.421		0.603		0.603		0.603		0.603	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3894		3894		3894		3894		3885		3885		3885		3885	

PANEL B: OLS regression results – the impact of NAS on auditor opinion (*GC_OPINION$_{it}$*)

Variables	High Growth								Low Growth							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	1.063	0.000	1.217	0.000	0.998	0.000	1.012	0.000	0.521	0.000	0.581	0.000	0.449	0.000	0.486	0.000
RNONAUDIT$_{it}$	-0.280	0.000							-0.234	0.005						
LNONAUDIT$_{it}$			-0.067	0.005							-0.037	0.095				
HIGHNONAUDIT$_{it}$					-0.066	0.003							-0.051	0.023		
LOWNONAUDIT$_{it}$							0.066	0.003							0.051	0.023
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.087		0.085		0.083		0.086		0.070		0.068		0.068		0.069	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	2738		2738		2738		2738		2738		2738		2738		2738	

PANEL C: OLS regression results – the impact of NAS on audit fees (*LNAF$_{it}$*)

Variables	High Growth								Low Growth							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value

Intercept	2.297	0.000	1.906	0.000	2.272	0.000	2.275	0.000	2.333	0.000	1.753	0.000	2.301	0.000	2.298	0.000
$RNONAUDIT_{it}$	1.545	0.000							1.097	0.000						
$LNONAUDIT_{it}$			0.137	0.000							0.174	0.000				
$HIGHNONAUDIT_{it}$					0.065	0.000							0.041	0.000		
$LOWNONAUDIT_{it}$							0.092	0.000							0.116	0.000
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.735		0.735		0.721		0.723		0.642		0.659		0.633		0.641	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3894		3894		3894		3894		3885		3885		3885		3885	

Panel A Equations: Column 1 and 5 based on *Equation [73]*, Column 2 and 6 based on *Equation [74]*, Column 3 and 7 based on *Equation [75]*, and Column 4 and 8 based on *Equation [76]*.

$$KOTHA\text{-}ABDAC_{it} = B0 + B1RNONAUDIT_{it} + B2LNASSETS_{it} + B3L1ACCRUAL_{it-1} + B4MKTBK_{it} + B5LEV_{it} + B6LNTENURE_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9ROA_{it} + B10BIG4_{it} + B11\ FINANCING_{it} + B12LOSS_{it} + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [73]

$$KOTHA\text{-}ABDAC_{it} = B0 + B1LNONAUDIT_{it} + B2LNASSETS_{it} + B3L1ACCRUAL_{it-1} + B4MKTBK_{it} + B5LEV_{it} + B6LNTENURE_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9ROA_{it} + B10BIG4_{it} + B11\ FINANCING_{it} + B12LOSS_{it} + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [74]

$$KOTHA\text{-}ABDAC_{it} = B0 + B1HIGHNONAUDIT_{it} + B2LNASSETS_{it} + B3L1ACCRUAL_{it-1} + B4MKTBK_{it} + B5LEV_{it} + B6LNTENURE_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9ROA_{it} + B10BIG4_{it} + B11\ FINANCING_{it} + B12LOSS_{it} + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [75]

$$KOTHA\text{-}ABDAC_{it} = B0 + B1LOWNONAUDIT_{it} + B2LNASSETS_{it} + B3L1ACCRUAL_{it-1} + B4MKTBK_{it} + B5LEV_{it} + B6LNTENURE_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9ROA_{it} + B10BIG4_{it} + B11\ FINANCING_{it} + B12LOSS_{it} + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [76]

Panel B Equations: Column 1 and 5 based on *Equation [77]*, Column 2 and 6 based on *Equation [78]*, Column 3 and 7 based on *Equation [79]*, and Column 4 and 8 based on *Equation [80]*.

$$GC\_OPINION_{it} = B0 + B1RNONAUDIT_{it} + B2LNASSETS_{it} + B3ROA_{it} + B4LEV_{it} + B5CHANG\_LEV_{it} + B6INVESTMENT_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9\ PBANK + B10BIG4_{it} + B11\ LOSS_{it}\ B12\ PQUAL + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [77]

$$GC\_OPINION_{it} = B0 + B1LNONAUDIT_{it} + B2LNASSETS_{it} + B3ROA_{it} + B4LEV_{it} + B5CHANG\_LEV_{it} + B6INVESTMENT_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9\ PBANK + B10BIG4_{it} + B11\ LOSS_{it}\ B12\ PQUAL + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [78]

$$GC\_OPINION_{it} = B0 + B1HIGHNONAUDIT_{it} + B2LNASSETS_{it} + B3ROA_{it} + B4LEV_{it} + B5CHANG\_LEV_{it} + B6INVESTMENT_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9\ PBANK + B10BIG4_{it} + B11\ LOSS_{it}\ B12\ PQUAL + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [79]

$$GC\_OPINION_{it} = B0 + B1LOWNONAUDIT_{it} + B2LNASSETS_{it} + B3ROA_{it} + B4LEV_{it} + B5CHANG\_LEV_{it} + B6INVESTMENT_{it} + B7LNAGE_{it} + B8CFO_{it-1} + B9\ PBANK + B10BIG4_{it} + B11\ LOSS_{it}\ B12\ PQUAL + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [80]

Panel C Equations: Column 1 and 5 based on *Equation [81]*, Column 2 and 6 based on *Equation [82]*, Column 3 and 7 based on *Equation [83]*, and Column 4 and 8 based on *Equation [84]*.

$$LNAF_{it} = B0 + B1RNONAUDIT_{it} + B2LNASSETS_{it} + B3MKTBK_{it} + B4LEV_{it} + B5LNTENURE_{it} + B6ROA_{it} + B7INVREC_{it} + B8LNSEG_{it} + B9LNLAG_{it} + B10BIG4_{it} + B11\ EPS\_UP_{it} + B12INITIALYEARS_{it} + B13ACE_{it} + B14\Sigma INDUSTRY_{it} + B15\Sigma YEAR_{it} + \varepsilon_{it}$$ [83]

$LNAFit = B0 + B1LNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_Upit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [84]

$LNAFit = B0 + B1HIGHNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_Upit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [85]

$LNAFit = B0 + B1LOWNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_Upit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [86]

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: $-4.3 - 4.5 \times$ (net income/total assets) $+ 5.7 \times$ (total debt/total assets) $-0.004 \times$ (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations. Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$)

7.5 Partitioning of Sample by Auditor Characteristics

7.5.1 Partitioning by Auditor Brand

The prior studies of audit quality consider the impact of auditor brand since these firms are credited with the distinction of having high levels of professionalism (Firth & Smith, 1992; Francis & Yu, 2009; Lawrence, Minutti-Meza, & Zhang, 2011). According to Francis and Yu (2009), Big4 offices are associated with higher audit quality since they find that Big4 offices are more likely to issue GCOs and less likely to engage in opportunistic earnings management. Thus, the study splits its data sample into Big4 and non-Big4 audit firms.

Table 7.8 Panel A Columns 1, 2, 5 and 6 show that the coefficients on $RNONAUDIT_{it}$ and $LNONAUDIT_{it}$ are consistently positive and insignificant for both Big4 and non-Big4 audit firms, which clearly supports the findings in Table 6.1. However, Table 7.8 Panel A Columns 3, 4, 7 and 8 show that the coefficients on $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are statistically insignificant for both Big4 and Non-Big4 audit firms, which is not consistent with the study findings.

Moreover, consistent with the study findings reported in Table 6.2, the additional tests reported in Table 7.8 Panel B Columns 1, 2, 3, 5, 6 and 7 show that the coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$ and $HIGHNONAUDIT_{it}$ are consistently negative but significant for both Big4 and non-Big4 firms. In addition, Table 7.8 Panel B Columns 4 and 8 show that the coefficients on $LOWNONAUDIT_{it}$ are consistently positive and significant for both Big4 and non-Big4 audit firms. Thus, the additional tests reported in Table 7.8 Panel B evidently confirm the study results identified in Chapter 6, that is, the provision of NAS is associated negatively with the issuance of GCOs.

Furthermore, consistent with the study findings reported in Table 6.3, the additional tests reported in Table 7.8 Panel C shows that all coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are consistently positive and significant for both Big4 and Non-Big4 audit firms. Thus, the additional tests reported in Table 7.8 Panel C evidently confirm the study results identified in Chapter 6, that is, the provision of NAS is associated positively with additional audit work.

Finally, Table 7.8 Panel A Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for the subsample of Big4 clients, which ranges from 45.1% to 45.2% (that is lower than the ones reported in Table 6.1 which equal to 47.3%) while Table 7.8 Panel A Columns 5, 6, 7 and 8 the values of adjusted-R^2 for the subsample of non-Big4 clients, which ranges from 42.9 to 43% (that is lower than the ones reported in Table 6.1 which equal to 47.3%). Also, Table 7.8 Panel B Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for subsample of Big4 clients which ranges from 10.2% to 11% (that is much higher than the ones reported in Table 6.2 which ranges from 6.2% to 6.5%) while Table 7.8 Panel B Columns 5, 6, 7 and 8 report the values of adjusted-R^2 for the subsample of non-Big4 clients, which ranges from 4.5% to 4.7% (that is lower than the ones reported in Table 6.2 which ranges from 6.2% to 6.5%). Moreover, Table 7.7 Panel C Columns 1, 2, 3 and 4 report the values of adjusted-R^2 for subsample of Big4 clients which ranges from 68% to 70.5% (that is quite similar to the ones reported in Table 6.3 which ranges from 67.2% to 69.4%), while Table 7.8 Panel C Columns 5, 6, 7 and 8 report the values of adjusted-R^2 for subsample of non-Big4 clients which ranges from 44.2% to 47.4% (that is much lower than the ones reported in Table 6.2 which ranges from 67.2% to 69.4%).

Overall, the additional tests reported in Table 7.8 clearly support the study results reported in Table 6.1, Table 6.2, and Table 6.3, thereby suggesting that the study's results are not driven by auditor brand.

Table 7.8

Regression Results Partitioning Sample Based on Auditor Brand (Big4it t)

PANEL A: OLS regression results – the impact of NAS on the absolute value of discretionary accruals (*KOTHA-ABDAC$_{it}$*)

Variables	Big4								Non-Big4							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.424	0.000	0.422	0.000	0.262	0.000	0.260	0.000	0.305	0.000	0.326	0.000	0.317	0.000	0.311	0.000
RNONAUDIT$_{it}$	0.012	0.593							0.033	0.491						
LNONAUDIT$_{it}$			0.002	0.754							0.004	0.779				
HIGHNONAUDIT$_{it}$					0.014	0.232							0.017	0.211		
LOWNONAUDIT$_{it}$							-0.014	0.232							-0.017	0.211
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.452		0.451		0.452		0.452		0.430		0.429		0.430		0.430	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3577		3577		3577		3577		4202		4202		4202		4202	

PANEL B: OLS regression results – the impact of NAS on auditor opinion (*GC_OPINION$_{it}$*)

Variables	Big4								Non-Big4							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	1.255	0.000	1.355	0.000	1.181	0.000	1.212	0.000	0.384	0.001	0.480	0.001	0.309	0.006	0.331	0.003
RNONAUDIT$_{it}$	-0.321	0.000							-0.238	0.004						
LNONAUDIT$_{it}$			-0.058	0.009							-0.046	0.065				
HIGHNONAUDIT$_{it}$					-0.021	0.000							-0.067	0.005		
LOWNONAUDIT$_{it}$							0.089	0.000							0.045	0.003
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.110		0.105		0.102		0.108		0.047		0.045		0.046		0.046	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	1944		1944		1944		1944		3482		3482		3482		3482	

PANEL C: OLS regression results – the impact of NAS on audit fees (*LNAF$_{it}$*)

Variables	Big4								Non-Big4							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value

Intercept	2.956	0.000	2.478	0.000	2.944	0.000	2.923	0.000	1.917	0.000	1.425	0.000	1.846	0.000	1.876	0.000
$RNONAUDIT_{it}$	1.232	0.000							1.557	0.000						
$LNONAUDIT_{it}$			0.138	0.000							0.163	0.000				
$HIGHNONAUDIT_{it}$					0.054	0.000							0.028	0.021		
$LOWNONAUDIT_{it}$							0.084	0.000							0.100	0.000
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.694		0.705		0.680		0.686		0.474		0.464		0.442		0.449	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3577		3577		3577		3577		4202		4202		4202		4202	

Panel A Equations: Column 1 and 5 based on *Equation [87]*, Column 2 and 6 based on *Equation [89]*, Column 3 and 7 based on *Equation [90]*, and Column 4 and 8 based on *Equation [91]*.

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [87]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [88]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [89]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [90]$$

Panel B Equations: Column 1 and 5 based on *Equation [91]*, Column 2 and 6 based on *Equation [92]*, Column 3 and 7 based on *Equation [93]*, and Column 4 and 8 based on *Equation [94]*.

$$GC\_OPINION_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [91]$$

$$GC\_OPINION_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [92]$$

$$GC\_OPINION_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [93]$$

$$GC\_OPINION_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [94]$$

Panel C Equations: Column 1 and 5 based on *Equation [95]*, Column 2 and 6 based on *Equation [96]*, Column 3 and 7 based on *Equation [97]*, and Column 4 and 8 based on *Equation [98]*.

$$LNAF_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [95]$$

$LNAF_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [96]

$LNAF_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [97]

$LNAF_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [98]

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.5.2 Partitioning by Length of Audit Tenure

Prior studies of audit quality indicate that audit quality may vary depending on the length of audit tenure (Bell, Causholli and Knechel 2015; Read and Yezegel 2016; Singh, Singh, Sultana and Evans 2019). Thus, the sample is partitioned into client firms with short audit tenure (where the audit tenure is less than or equal to two years) and client firms with medium audit tenure (where the audit tenure is from three to five years) (Gul, Jaggi, and Krishnan 2007). This partitioned test is performed to determine if the associations between NAS and audit quality vary between client firms with short-tenured and medium-tenured audits. The multivariate tests in Chapter 6 are re-performed after partitioning the sample by audit partner and audit firm tenure, which is discussed in the following subsections.

7.5.2.1 Partitioning by Length of Audit Partner Tenure

Table 7.9 Panel A Columns 1, 2, 5 and 6 show that the coefficients on $RNONAUDIT_{it}$ and $LNONAUDIT_{it}$ are consistently positive and insignificant for both short and medium partner tenure, which clearly supports the findings in Table 6.1. However, Table 7.9 Panel A Column 3 and 4 report marginally significant results on $HIGHNONAUDIT_{it}$ (coefficient = 0.015 and p-value = 0.087) and $LOWNONAUDIT_{it}$ (coefficient = -0.003 and p-value = 0.064) for short partner tenure, while Table 7.9 Panel A Column 7 and 8 report insignificant results for medium partner tenure on $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$, implying that the likelihood of compromising auditor independence by the provision of NAS is very high when the partner tenure is short. Moreover, Table 7.9 Panel B shows that all coefficients on short partner tenure, except in Column 4, are consistently negative but significant, while all coefficients, except on Column 8, on medium partner tenure are consistently negative but insignificant. Also, Table 7.9 Panel B Column 4 and 8 show that the coefficients on $LOWNONAUDIT_{it}$ are positive and significant for short partner tenure and is positive and insignificant for medium partner tenure. This finding suggests that partners are less likely to issue GCOs when they provide NAS and their tenure is less than three years.

Furthermore, consistent with the study findings reported in Table 6.3, the additional tests reported in Table 7.9 Panel C show that all coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are

consistently positive and significant for both short and medium partner tenure. Thus, the additional tests reported in Table 7.9 Panel C evidently confirm the study results identified in Chapter 6, that is, the provision of NAS is associated positively with additional audit work.

Table 7.9

Regression Results Partitioning Sample Based on Auditor Partner Tenure

PANEL A: OLS regression results – the impact of NAS on the absolute value of discretionary accruals (*KOTHA-ABDAC$_{it}$*)

Variables	Short partner tenure								Medium partner tenure							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.099	0.020	0.108	0.022	0.115	0.006	0.109	0.009	0.350	0.000	0.319	0.000	0.359	0.000	0.354	0.000
RNONAUDIT$_{it}$	0.038	0.167							0.031	0.508						
LNONAUDIT$_{it}$			0.001	0.931							0.015	0.214				
HIGHNONAUDIT$_{it}$					0.015	0.087							0.006	0.681		
LOWNONAUDIT$_{it}$							-0.003	0.064							-0.018	0.177
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.547		0.547		0.547		0.547		0.559		0.565		0.559		0.560	
Sig. F change	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
Observations	5339		5339		5339		5339		2440		2440		2440		2440	

PANEL B: OLS regression results – the impact of NAS on auditor opinion (*GC_OPINION$_{it}$*)

Variables	Short partner tenure								Medium partner tenure							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.795	0.000	0.888	0.000	0.707	0.000	0.745	0.000	0.686	0.000	0.758	0.000	0.646	0.000	0.654	0.000
RNONAUDIT$_{it}$	-0.312	0.000							-0.168	0.153						
LNONAUDIT$_{it}$			-0.053	0.005							-0.035	0.295				
HIGHNONAUDIT$_{it}$					-0.060	0.003							-0.016	0.640		
LOWNONAUDIT$_{it}$							0.071	0.000							0.654	0.284
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.067		0.063		0.063		0.065		0.047		0.047		0.046		0.047	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3700		3700		3700		3700		1776		1776		1776		1776	

PANEL C: OLS regression results – the impact of NAS on audit fees (*LNAF$_{it}$*)

	Short partner tenure	Medium partner tenure

Variables	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	2.462	0.000	1.900	0.000	2.427	0.000	2.437	0.000	2.144	0.000	1.746	0.000	2.129	0.000	2.123	0.000
$RNONAUDIT_{it}$	1.296	0.000							1.583	0.000						
$LNONAUDIT_{it}$			0.171	0.000							0.135	0.000				
$HIGHNONAUDIT_{it}$					0.062	0.000							0.045	0.004		
$LOWNONAUDIT_{it}$							0.103	0.000							0.094	0.000
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.671		0.681		0.657		0.661		o.720		0.727		0.713		o.717	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	5339		5339		5339		5339		2440		2440		2440		2440	

Panel A Equations: Column 1 and 5 based on *Equation [99]*, Column 2 and 6 based on *Equation [100]*, Column 3 and 7 based on *Equation [101]*, and Column 4 and 8 based on *Equation [102]*.

$KOTHA\text{-}ABDACit = B0 + B1RNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [99]

$KOTHA\text{-}ABDACit = B0 + B1LNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [100]

$KOTHA\text{-}ABDACit = B0 + B1HIGHNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [101]

$KOTHA\text{-}ABDACit = B0 + B1LOWNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [102]

Panel B Equations: Column 1 and 5 based on *Equation [103]*, Column 2 and 6 based on *Equation [104]*, Column 3 and 7 based on *Equation [105]*, and Column 4 and 8 based on *Equation [106]*.

$GC\_OPINIONit = B0 + B1RNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [103]

$GC\_OPINIONit = B0 + B1LNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [104]

$GC\_OPINIONit = B0 + B1HIGHNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [105]

$GC\_OPINIONit = B0 + B1LOWNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [106]

Panel C Equations: Column 1 and 5 based on *Equation [107]*, Column 2 and 6 based on *Equation [108]*, Column 3 and 7 based on *Equation [109]*, and Column 4 and 8 based on *Equation [110]*.

$$LNAFit = B0 + B1RNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [107]$$

$$LNAFit = B0 + B1LNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [108]$$

$$LNAFit = B0 + B1HIGHNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [109]$$

$$LNAFit = B0 + B1LOWNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [110]$$

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$)

7.5.2.2 Partitioning by Length of Audit Firms' Tenure

Table 7.9 Panel A Columns 1, 2, 3, 5, 6 and 7 show that the coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$ and $HIGHNONAUDIT_{it}$ are consistently positive and insignificant for both short and medium audit firms' tenure. Also, Table 7.9 Panel A Columns 4 and 8 show that the coefficients on $LOWNONAUDIT_{it}$ are statistically insignificant for short and medium audit firms' tenure, suggesting that the audit firms' tenure has no impact on the earnings management model.

Moreover, Table 7.9 Panel B shows that all coefficients on short audit firms' tenure are consistently significant, while all coefficients on medium audit firms' tenure are consistently insignificant. These findings suggest that NAS is more likely to lower audit quality when audit firms' tenure is short.

Furthermore, consistent with the study findings reported in Table 6.3, the additional tests reported in Table 7.9 Panel C show that all coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are consistently positive and significant for both short and medium audit firms' tenure. Thus, the additional tests reported in Table 7.9 Panel C evidently confirm the study results identified in Chapter 6, which is the provision of NAS is associated positively with additional audit work.

Table 7.10

Regression Results Partitioning Sample Based on Audi Firm's Tenure

PANEL A: OLS regression results – the impact of NAS on the absolute value of discretionary accruals (*KOTHA-ABDAC$_{it}$*)

Variables	Short firm tenure								Medium firm tenure							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.200	0.006	0.117	0.155	0.224	0.002	0.214	0.003	0.420	0.000	0.432	0.000	0.440	0.000	0.434	0.000
RNONAUDIT$_{it}$	0.067	0.140							0.067	0.170						
LNONAUDIT$_{it}$			0.033	0.111							0.001	0.920				
HIGHNONAUDIT$_{it}$					0.015	0.325							0.016	0.310		
LOWNONAUDIT$_{it}$							-0.018	0.282							-0.031	0.233
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.556		0.557		0.566		0.566		0.596		0.591		0.591		0.592	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	2351		2351		2351		2351		5428		5428		5428		5428	

PANEL B: OLS regression results – the impact of NAS on auditor opinion (*GC_OPINION$_{it}$*)

Variables	Short firm tenure								Medium firm tenure							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.663	0.000	0.727	0.000	0.504	0.000	0.581	0.000	0.506	0.002	0.518	0.008	0.496	0.002	0.502	0.002
RNONAUDIT$_{it}$	-0.400	0.000							-0.030	0.789						
LNONAUDIT$_{it}$			-0.054	0.057							-0.006	0.854				
HIGHNONAUDIT$_{it}$					-0.072	0.013							-0.006	0.859		
LOWNONAUDIT$_{it}$							0.064	0.032							0.014	0.664
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.072		0.072		0.072		0.075		0.060		0.060		0.060		0.060	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	1634		1634		1634		1634		3842		3842		3842		3842	

PANEL C: OLS regression results – the impact of NAS on audit fees (*LNAF$_{it}$*)

	Short firm tenure	Medium firm tenure

Variables	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	2.780	0.000	2.064	0.000	2.747	0.000	2.747	0.000	2.411	0.000	1.955	0.000	2.389	0.000	2.371	0.000
$RNONAUDIT_{it}$	1.606	0.000							1.421	0.000						
$LNONAUDIT_{it}$			0.199	0.000							0.142	0.000				
$HIGHNONAUDIT_{it}$					0.082	0.000							0.043	0.000		
$LOWNONAUDIT_{it}$							0.108	0.000							0.112	0.000
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.578		0.594		0.548		0.551		0.652		0.667		0.645		0.653	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	2351		2351		2351		2351		5428		5428		5428		5428	

Panel A Equations: Column 1 and 5 based on *Equation [111]*, Column 2 and 6 based on *Equation [112]*, Column 3 and 7 based on *Equation [113]*, and Column 4 and 8 based on *Equation [114]*.

$$KOTHA\text{-}ABDACit = B0 + B1RNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [111]$$

$$KOTHA\text{-}ABDACit = B0 + B1LNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [112]$$

$$KOTHA\text{-}ABDACit = B0 + B1HIGHNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [113]$$

$$KOTHA\text{-}ABDACit = B0 + B1LOWNONAUDITit + B2LNASSETSit + B3L1ACCRUALit\text{-}1 + B4MKTBKit + B5LEVit + B6LNTENUREit + B7LNAGEit + B8CFOit\text{-}1 + B9ROAit + B10BIG4it + B11\ FINANCINGit + B12LOSSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [114]$$

Panel B Equations: Column 1 and 5 based on *Equation [115]*, Column 2 and 6 based on *Equation [116]*, Column 3 and 7 based on *Equation [117]*, and Column 4 and 8 based on *Equation [118]*.

$$GC\_OPINIONit = B0 + B1RNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [115]$$

$$GC\_OPINIONit = B0 + B1LNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [116]$$

$$GC\_OPINIONit = B0 + B1HIGHNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [117]$$

$$GC\_OPINIONit = B0 + B1LOWNONAUDITit + B2LNASSETSit + B3ROAit + B4LEVit + B5CHANG\_LEVit + B6INVESTMENTit + B7LNAGEit + B8CFOit\text{-}1 + B9\ PBANK + B10BIG4it + B11\ LOSSit\ B12\ PQUAL + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it \quad [118]$$

Panel C Equations: Column 1 and 5 based on *Equation [119]*, Column 2 and 6 based on *Equation [120]*, Column 3 and 7 based on *Equation [121]*, and Column 4 and 8 based on *Equation [122]*.

$LNAFit = B0 + B1RNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [119]

$LNAFit = B0 + B1LNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [120]

$LNAFit = B0 + B1HIGHNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [121]

$LNAFit = B0 + B1LOWNONAUDITit + B2LNASSETSit + B3MKTBKit + B4LEVit + B5LNTENUREit + B6ROAit + B7INVRECit + B8LNSEGit + B9LNLAGit + B10BIG4it + B11\ EPS\_UPit + B12INITIALYEARSit + B13ACEit + B14\Sigma INDUSTRYit + B15\Sigma YEARit + \varepsilon it$ [122]

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.6 Partitioning of Sample by Audit Committee Characteristics

An audit committee is a critical factor in monitoring firms' internal control and corporate governance. The degree to which an audit committee exercises control over the auditors and managers probably exceeds the amount which the rest of the board serves in relation to the role of financial reporting and audit quality (Kent, Routledge, & Stewart, 2010). Thus, the sample of this study is partitioned based on audit committee characteristics as the association between NAS and audit quality might be subject to the effectiveness of the audit committee.

7.6.1 Partitioning Sample by Audit Committee Expertise

Prior studies indicate that an audit committee with more financial expertise is associated with better quality of an audit (Aldamen et al., 2012; Alderman & Jollineau, 2020; Sultana, 2015). Thus, the sample is partitioned based on the financial and non-financial members of the audit committee.

Table 7.10 Panel A Columns 1, 2, 4, 5, 6 and 8 show that the coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are consistently positive and insignificant for both financial and non-financial members. However, Table 7.10 Panel A Column 3 shows that the coefficient on $HIGHNONAUDIT_{it}$ is statistically insignificant on the audit committee with a financial expert, while Column 7 shows that the coefficient is statistically positive and significant on the audit committee with a non-financial expert. The positive association between $HIGHNONAUDIT_{it}$ and the absolute value of discretionary accruals suggests that, in the absence of a financial expert in the audit committee, auditors are more likely to not report the aggressive practice of earnings management when they are paid high values of NAS. Moreover, Table 7.10 Panel B Columns 5 to 8 report significant coefficients where the audit committee has no financial expert, while Columns 1 to 4 report insignificant coefficients where the audit committee has a financial expert. These findings suggest that, in the absence of a financial expert in the audit committee, NAS is more likely to lower audit quality since auditors are less likely to issue a GCOs when they provide NAS and the audit committee has no financial expert. Furthermore, the additional tests reported in Table 7.10 Panel C indicate that the study findings reported in Table 6.3 for audit fees model are not affected by the partitioning of the financial expert of the

audit committee. Table 7.10 Panel C shows that all coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are consistently positive and significant for both financial and non-financial expert on audit committee.

Table 7.11

Regression Results Partitioning Sample Based on Audit Committee (Financial Experts)

PANEL A: OLS regression results – the impact of NAS on the absolute value of discretionary accruals (*KOTHA-ABDAC$_{it}$*)

Variables	Financial Expert on Audit Committee								No Financial Expert on Audit Committee							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.222	0.000	0.221	0.000	0.232	0.000	0.231	0.000	0.321	0.000	0.312	0.000	0.339	0.000	0.329	0.000
RNONAUDIT$_{it}$	0.028	0.193							0.044	0.140						
LNONAUDIT$_{it}$			0.005	0.390							0.007	0.394				
HIGHNONAUDIT$_{it}$					0.002	0.752							0.018	0.052		
LOWNONAUDIT$_{it}$							-0.003	0.722							-0.008	0.371
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.272		0.271		0.271		0.271		0.551		0.551		0.551		0.551	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	1187		1187		1187		1187		6592		6592		6592		6592	

PANEL B: OLS regression results – the impact of NAS on auditor opinion (*GC_OPINION$_{it}$*)

Variables	Financial Expert on Audit Committee								No Financial Expert on Audit Committee							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	1.041	0.000	1.055	0.003	1.022	0.002	1.054	0.001	0.753	0.000	0.863	0.000	0.669	0.000	0.699	0.000
RNONAUDIT$_{it}$	-0.052	0.726							-0.309	0.000						
LNONAUDIT$_{it}$			-0.009	0.832							-0.057	0.001				
HIGHNONAUDIT$_{it}$					-0.026	0.591							-0.056	0.002		
LOWNONAUDIT$_{it}$							0.045	0.337							0.061	0.000
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.097		0.097		0.098		0.099		0.059		0.056		0.056		0.057	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	386		386		386		386		5090		5090		5090		5090	

PANEL C: OLS regression results – the impact of NAS on audit fees (*LNAF$_{it}$*)

	Financial Expert on Audit Committee	No Financial Expert on Audit Committee

Variables	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.751	0.022	0.509	0.023	0.694	0.005	0.693	0.005	2.601	0.000	2.062	0.000	2.586	0.000	2.588	0.000
$RNONAUDIT_{it}$	1.733	0.002							1.144	0.001						
$LNONAUDIT_{it}$			0.222	0.000							0.161	0.000				
$HIGHNONAUDIT_{it}$					0.121	0.000							0.101	0.000		
$LOWNONAUDIT_{it}$							0.034	0.094							0.114	0.000
CONTROL VARIABLES	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.668		0.699		0.649		0.640		0.587		0.599		0.584		0.584	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	1187		1187		1187		1187		6592		6592		6592		6592	

Panel A Equations: Column 1 and 5 based on *Equation [123]*, Column 2 and 6 based on *Equation [124]*, Column 3 and 7 based on *Equation [125]*, and Column 4 and 8 based on *Equation [126]*.

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [123]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [124]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [125]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [126]$$

Panel B Equations: Column 1 and 5 based on *Equation [127]*, Column 2 and 6 based on *Equation [128]*, Column 3 and 7 based on *Equation [129]*, and Column 4 and 8 based on *Equation [130]*.

$$GC\_OPINION_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [127]$$

$$GC\_OPINION_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [128]$$

$$GC\_OPINION_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [129]$$

$$GC\_OPINION_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [130]$$

Panel C Equations: Column 1 and 5 based on *Equation [131]*, Column 2 and 6 based on *Equation [132]*, Column 3 and 7 based on *Equation [133]*, and Column 4 and 8 based on *Equation [134]*.

$LNAF_{it} = B_0 + B_1RNONAUDIT_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\,EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [131]

$LNAF_{it} = B_0 + B_1LNONAUDIT_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\,EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [132]

$LNAF_{it} = B_0 + B_1HIGHNONAUDIT_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\,EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [133]

$LNAF_{it} = B_0 + B_1LOWNONAUDIT_{it} + B_2LNASSETS_{it} + B_3MKTBKit + B_4LEV_{it} + B_5LNTENURE_{it} + B_6ROA_{it} + B_7INVREC_{it} + B_8LNSEG_{it} + B_9LNLAG_{it} + B_{10}BIG4_{it} + B_{11}\,EPS\_UP_{it} + B_{12}INITIALYEARS_{it} + B_{13}ACE_{it} + B_{14}\Sigma INDUSTRY_{it} + B_{15}\Sigma YEAR_{it} + \varepsilon it$ [134]

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{\ it\text{-}1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; $CFO_{it\text{-}1}$= Operating cash flow deflated by total assets for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.6.2 Partitioning by Audit Committee Diligence

Some studies of audit quality conclude that the frequency of audit committee meetings is associated with audit quality (Stewart & Kent, 2006; Stewart & Munro, 2007). Thus, the sample is petitioned based on the number of audit committee meetings. Table 7.11 Panel A largely conforms to the positive and insignificant results reported in Table 6.1. However, Table 7.11 Panel A Column 7 reports a positive and marginally significant coefficient in $HIGHNONAUDIT_{it}$, while Column 3 reports a positive and insignificant coefficient in $HIGHNONAUDIT_{it}$. These findings suggest that the provision of NAS is less likely to compromise audit independence when an audit committee meets at least four times.

Moreover, Table 7.11 Panel B Columns 5 to 8 report negative but significant coefficients on NAS proxies when the audit committee meets less than four times, while Columns 1 to 4 report insignificant coefficients when the audit committee meets at least four times. These findings suggest that, in the absence of proper efforts by the audit committee, NAS is more likely to lower audit quality since auditors are less likely to issue a GCOs when they provide NAS and the audit committee meets less than four times.

Furthermore, the additional tests reported in Table 7.11 Panel C indicate that the study findings reported in Table 6.3 for the audit fees model are not affected by the partitioning of the diligence of the audit committee. Table 7.11 Panel C shows that all coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are consistently positive and significant for both financial and non-financial expert on the audit committee.

Table 7.12

Regression Results Partitioning Sample Based on Audit Committee (Meeting Held)

PANEL A: OLS regression results – the impact of NAS on the absolute value of discretionary accruals ($KOTHA\text{-}ABDAC_{it}$)

Variables	Audit Committee Meets at Least Four Times								Audit Committee Meets Less Than Four Times							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.252	0.000	0.255	0.000	0.261	0.000	0.260	0.000	0.285	0.000	0.288	0.000	0.298	0.000	0.289	0.000
$RNONAUDIT_{it}$	0.024	0.201							0.020	0.557						
$LNONAUDIT_{it}$			0.003	0.569							0.001	0.935				
$HIGHNONAUDIT_{it}$					0.005	0.476							0.017	0.097		
$LOWNONAUDIT_{it}$							-0.002	0.813							-0.005	0.581
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.272		0.271		0.271		0.271		0.551		0.551		0.551		0.551	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	1045		1045		1045		1045		6734		6734		6734		6734	

PANEL B: OLS regression results – the impact of NAS on auditor opinion ($GC\_OPINION_{it}$)

Variables	Audit Committee Meets at Least Four Times								Audit Committee Meets Less Than Four Times							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	1.361	0.001	1.242	0.002	1.308	0.001	1.319	0.001	0.736	0.000	0.841	0.000	0.654	0.000	0.684	0.000
$RNONAUDIT_{it}$	-0.022	0.890							-0.303	0.000						
$LNONAUDIT_{it}$			0.022	0.636							-0.055	0.002				
$HIGHNONAUDIT_{it}$					0.008	0.876							-0.052	0.005		
$LOWNONAUDIT_{it}$							0.021	0.676							0.065	0.000
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.103		0.104		0.103		0.104		0.059		0.56		0.056		0.057	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	303		303		303		303		5173		5173		5173		5173	

PANEL C: OLS regression results – the impact of NAS on audit fees ($LNAF_{it}$)

	Audit Committee Meets at least Four Times	Audit Committee Meets Less Than Four Times

Variables	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.519	0.018	0.360	0.104	0.486		0.486	0.039	2.485	0.000	1.997	0.000	2.566	0.000	2.563	0.000
$RNONAUDIT_{it}$	1.702	0.000							1.169	0.000						
$LNONAUDIT_{it}$			0.204	0.000							0.175	0.000				
$HIGHNONAUDIT_{it}$					0.028	0.000							0.079	0.000		
$LOWNONAUDIT_{it}$							0.69	0.000							0.109	0.000
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
VARIABLES																
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.713		0.710		0.671		0.674		0.585		0.585		0.575		0.580	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	1045		1045		1045		1045		6734		6734		6734		6734	

Panel A Equations: Column 1 and 5 based on *Equation [135]*, Column 2 and 6 based on *Equation [136]*, Column 3 and 7 based on *Equation [137]*, and Column 4 and 8 based on *Equation [138]*.

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [135]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [136]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [137]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [138]$$

Panel B Equations: Column 1 and 5 based on *Equation [139]*, Column 2 and 6 based on *Equation [140]*, Column 3 and 7 based on *Equation [141]*, and Column 4 and 8 based on *Equation [142]*.

$$GC\_OPINION_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [139]$$

$$GC\_OPINION_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [140]$$

$$GC\_OPINION_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [141]$$

$$GC\_OPINION_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 PBANK + B_{10} BIG4it + B_{11} LOSS_{it} B_{12} PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [142]$$

Panel C Equations: Column 1 and 5 based on *Equation [143]*, Column 2 and 6 based on *Equation [144]*, Column 3 and 7 based on *Equation [145]*, and Column 4 and 8 based on *Equation [146]*.

$LNAF_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [143]

$LNAF_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [144]

$LNAF_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [145]

$LNAF_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11} EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [146]

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise ; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period t, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observation.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.7 Partitioning of Sample by Firm Industry

The sample of this study contains 39% of the observations in the material industry, which raises a concern about a sample bias issue. Thus, to ensure that this study sample is not driven by the material industry, the sample is partitioned based on material and non-material industries.

Table 7.12 Panel A Columns 1, 2, 5 and 6 show that the coefficients on $RNONAUDIT_{it}$ and $LNONAUDIT_{it}$ are consistently insignificant for both material and non-material industries, which clearly supports the findings in Table 6.1. However, Table 7.12 Panel A Column 3 reports a marginally significant result on $HIGHNONAUDIT_{it}$ (coefficient = 0.038 and p-value = 0.097), while Column 7 reports an insignificant result (coefficient = -0.005 and p-value = 0.738), implying that the likelihood of compromising auditor independence by the provision of NAS is higher in the material sector. Moreover, the additional tests reported in Table 7.12 Panel B show that all coefficients are significant and consistently in the same direction, which supports the study findings reported in Table 6.2. Furthermore, consistent with the study findings reported in Table 6.3, the additional tests reported in Table 7.12 Panel C show that all coefficients on $RNONAUDIT_{it}$, $LNONAUDIT_{it}$, $HIGHNONAUDIT_{it}$ and $LOWNONAUDIT_{it}$ are consistently positive and significant for both material and non-material industries.

Finally, the additional tests reported in Table 7.12 Panels A, B and C ensure the robustness of the study findings since the results reported in Table 7.12 are in the same direction as those found in Table 6.1, Table 6.2 and Table 6.3. Therefore, the partitioning test results indicate that the material industry is not driving the results.

Table 7.13

Regression Results Partitioning Sample Based on Industry

PANEL A: OLS regression results – the impact of NAS on the absolute value of discretionary accruals (*KOTHA-ABDAC$_{it}$)*

Variables	Material Industry								Non-material Industry							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.562	0.000	0.449	0.001	0.678	0.000	0.650	0.000	0.254	0.016	0.294	0.003	0.452	0.000	0.450	0.000
RNONAUDIT$_{it}$	0.089	0.186							0.043	0.330						
LNONAUDIT$_{it}$			-0.003	0.874							-0.017	0.228				
HIGHNONAUDIT$_{it}$					0.038	0.097							-0.005	0.738		
LOWNONAUDIT$_{it}$							-0.003	0.853							-0.021	0.156
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
Adjust R^2	0.366		0.406		0.444		0.442		0.528		0.591		0.649		0.649	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3045		3045		3045		3045		4734		4734		4734		4734	

PANEL B: OLS regression results – the impact of NAS on auditor opinion (*GC_OPINION$_{it}$*)

Variables	Material Industry								Non-material Industry							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.659	0.000	0.719	0.000	0.588	0.000	0.614	0.000	0.805	0.000	0.894	0.000	0.726	0.000	0.756	0.000
RNONAUDIT$_{it}$	-0.262	0.005							-0.280	0.000						
LNONAUDIT$_{it}$			-0.040	0.050							-0.049	0.015				
HIGHNONAUDIT$_{it}$					-0.047	0.098							-0.047	0.032		
LOWNONAUDIT$_{it}$							0.055	0.026							0.060	0.003
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
VARIABLES																
INDUSTRY$_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
YEAR $_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
Adjust R^2	0.036		0.034		0.034		0.035		0.081		0.078		0.077		0.079	

Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	2652		2652		2652		2652		2824		2824		2824		2824	

PANEL C: OLS regression results – the impact of NAS on audit fees (*$LNAF_{it}$*)

Variables	Material Industry								Non-material Industry							
	Column 1		Column2		Column 3		Column 4		Column 5		Column 6		Column 7		Column 8	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	2.777	0.000	2.331	0.000	1.948	0.000	2.785	0.000	1.976	0.000	1.483	0.000	1.948	0.000	1.941	0.000
$RNONAUDIT_{it}$	1.434	0.002							1.332	0.000						
$LNONAUDIT_{it}$			0.129	0.000							0.181	0.000				
$HIGHNONAUDIT_{it}$					0.045	0.001							0.039	0.000		
$LOWNONAUDIT_{it}$							0.131	0.000							0.071	0.000
CONTROL	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
VARIABLES																
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Include
Adjust R^2	0.614		0.624		0.611		0.624		0.671		0.686		0.655		0.657	
Sig. F change	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Observations	3045		3045		3045		3045		4734		4734		4734		4734	

Panel A Equations: Column 1 and 5 based on *Equation [147]*, Column 2 and 6 based on *Equation [148]*, Column 3 and 7 based on *Equation [149]*, and Column 4 and 8 based on *Equation [150]*.

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [147]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [148]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [149]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 L1ACCRUAL_{it-1} + B_4 MKTBKit + B_5 LEV_{it} + B_6 LNTENURE_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9 ROA_{it} + B_{10} BIG4_{it} + B_{11} FINANCING_{it} + B_{12} LOSS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it \quad [150]$$

Panel B Equations: Column 1 and 5 based on *Equation [151]*, Column 2 and 6 based on *Equation [152]*, Column 3 and 7 based on *Equation [153]*, and Column 4 and 8 based on *Equation [154]*.

$GC\_OPINION_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [151]

$GC\_OPINION_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [152]

$GC\_OPINION_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [153]

$GC\_OPINION_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 ROA_{it} + B_4 LEV_{it} + B_5 CHANG\_LEV_{it} + B_6 INVESTMENT_{it} + B_7 LNAGE_{it} + B_8 CFO_{it-1} + B_9\ PBANK + B_{10} BIG4it + B_{11}\ LOSS_{it}\ B_{12}\ PQUAL + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [154]

Panel C Equations: Column 1 and 5 based on *Equation [155]*, Column 2 and 6 based on *Equation [156]*, Column 3 and 7 based on *Equation [157]*, and Column 4 and 8 based on *Equation [158]*.

$LNAF_{it} = B_0 + B_1 RNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [155]

$LNAF_{it} = B_0 + B_1 LNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [156]

$LNAF_{it} = B_0 + B_1 HIGHNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [157]

$LNAF_{it} = B_0 + B_1 LOWNONAUDIT_{it} + B_2 LNASSETS_{it} + B_3 MKTBKit + B_4 LEV_{it} + B_5 LNTENURE_{it} + B_6 ROA_{it} + B_7 INVREC_{it} + B_8 LNSEG_{it} + B_9 LNLAG_{it} + B_{10} BIG4_{it} + B_{11}\ EPS\_UP_{it} + B_{12} INITIALYEARS_{it} + B_{13} ACE_{it} + B_{14} \Sigma INDUSTRY_{it} + B_{15} \Sigma YEAR_{it} + \varepsilon it$ [158]

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $GC\_OPINION_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; $LNAF_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of year for firm *i* at the end of time period t-1; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $INVREC_{it}$ = Inventory plus accounts receivable divided by total assets for firm *i* at the end of time period t; $LNSEG_{it}$ = natural logarithm of the number of geographic segments for firm *i* at the end of time period t; $LNLAG_{it}$ = Natural logarithm of the number of days between the fiscal year-end

date and the initial audit report date for firm *i* at the end of time period t; $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; EPS_UP_{it} = 1 if earnings per share increased over the prior year for firm *i* at the end of time period t, and 0 otherwise; $INITIALYEARS_{it}$ = 1 if the current year is the auditor's first engagement year for firm *i* at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; $CHANG\_LEV_{it}$ = Change in leverage for firm *i* at the end of time period t; $INVESTMENT_{it}$ = Short- and long-term investment securities (measured as current assets minus debtors and inventory) divided by total assets for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; $PBANK_{it}$ = Probability of bankruptcy for firm *i* at the end of time period t, as measured by adjusted Zmijewski score: −4.3 – 4.5 × (net income/total assets) + 5.7 × (total debt/total assets) −0.004 × (current assets/current liabilities); $PQUAL_{it}$ = 1 if the auditor issued an opinion other than an unqualified one for firm *i* at the end of time period t-1, and 0 otherwise; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.
Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.8 Key Findings from the Additional Tests

Overall, the partitioning tests support the study findings by consistently reporting the significant impact of NAS on audit quality. The findings of the several partitioning tests conducted in Chapter 7 are summarized in Table 7.13.

The partitioning tests indicate that NAS impacts auditors' independence mostly in smaller and high growth firms. In fact, one of the reasons that the smaller firms receive poor audit quality when NAS is involved is that the ASX rules [71] require only the larger listed firms to have an audit committee. Thus, the absence of effective corporate governance could lead to the smaller firms being mostly impacted by the provision of NAS.

In addition, Table 7.13 indicates that NAS leads to higher earnings management as well as a decrease in issuing GCOs mostly for clients with a short audit tenure. This finding suggests that the audit tenure of both the partners and the audit firms is a significant factor that impacts the association between NAS and audit quality. As shown in Table 7.13, the auditors' independence is compromising during the early years of audit engagement (short tenure).

The partitioning tests further indicate that NAS impacts auditors' independence mostly in firms with ineffective audit committees, since the tests report greater earnings management and fewer GCOs for firms with an audit committee that either meets less than four times or has no financial experts.

[71] The current version of the Council's Corporate Governance Principles and Recommendations (4th Edition) was released on February 27, 2019, and has been effective since January 1, 2020. It recommends that the board of a listed entity should have an audit committee, but it is indicated that, in Recommendation 4.1, an entity must have an audit committee if it is included in the S&P/ASX 300a Index.

Table 7.14

Summary of Results of All Partitioning Tests

Variables	KOTHA-ABDAC$_{it}$				GC_OPINION$_{it}$				LNAF$_{it}$			
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
	Large Firms		Small Firms		Large Firms		Small Firms		Large Firms		Small Firms	
RNONAUDIT$_{it}$	0.021	0.198	0.055	0.346	-0.195	0.008	-0.346	0.000	1.595	0.000	0.134	0.000
LNONAUDIT$_{it}$	0.002	0.653	0.004	0.837	-0.056	0.007	-0.023	0.003	0.165	0.000	0.095	0.000
HIGHNONAUDIT$_{it}$	0.007	0.250	0.029	0.056	-0.059	0.011	-0.063	0.003	0.025	0.019	0.006	0.000
LOWNONAUDIT$_{it}$	-0.007	0.250	-0.029	0.056	0.059	0.011	0.063	0.003	0.077	0.000	0.085	0.000
	High Growth		Low Growth		High Growth		Low Growth		High Growth		Low Growth	
RNONAUDIT$_{it}$	0.050	0.154	0.018	0.555	-0.280	0.000	-0.234	0.005	1.545	0.000	1.097	0.000
LNONAUDIT$_{it}$	0.002	0.796	0.004	0.607	-0.067	0.005	-0.037	0.095	0.137	0.000	0.174	0.000
HIGHNONAUDIT$_{it}$	0.026	0.041	0.006	0.499	-0.066	0.003	-0.051	0.023	0.065	0.000	0.041	0.000
LOWNONAUDIT$_{it}$	-0.026	0.041	-0.006	0.499	0.066	0.003	0.051	0.023	0.092	0.000	0.116	0.000
	Big4		Non-Big4		Big4		Non-Big4		Big4		Non-Big4	
RNONAUDIT$_{it}$	0.012	0.593	0.033	0.491	-0.321	0.000	-0.238	0.004	1.232	0.000	1.557	0.000
LNONAUDIT$_{it}$	0.002	0.754	0.004	0.779	-0.058	0.009	-0.046	0.065	0.138	0.000	0.163	0.000
HIGHNONAUDIT$_{it}$	0.014	0.232	0.017	0.211	-0.021	0.000	-0.067	0.005	0.054	0.000	0.028	0.021
LOWNONAUDIT$_{it}$	-0.014	0.232	-0.017	0.211	0.089	0.000	0.045	0.003	0.084	0.000	0.100	0.000
	Short partner tenure		Medium partner tenure		Short partner tenure		Medium partner tenure		Short partner tenure		Medium partner tenure	
RNONAUDIT$_{it}$	0.038	0.167	0.031	0.508	-0.312	0.000	-0.168	0.153	1.296	0.000	1.583	0.000
LNONAUDIT$_{it}$	0.001	0.931	0.015	0.214	-0.053	0.005	-0.035	0.295	0.171	0.000	0.135	0.000
HIGHNONAUDIT$_{it}$	0.015	0.087	0.006	0.681	-0.060	0.003	-0.016	0.640	0.062	0.000	0.045	0.004
LOWNONAUDIT$_{it}$	-0.003	0.064	-0.018	0.177	0.071	0.000	0.654	0.284	0.103	0.000	0.094	0.000
	Short firm tenure		Medium firm tenure		Short firm tenure		Medium firm tenure		Short firm tenure		Medium firm tenure	
RNONAUDIT$_{it}$	0.067	0.140	0.067	0.170	-0.400	0.000	-0.030	0.789	1.606	0.000	1.421	0.000
LNONAUDIT$_{it}$	0.033	0.111	0.001	0.920	-0.054	0.057	-0.006	0.854	0.199	0.000	0.142	0.000
HIGHNONAUDIT$_{it}$	0.015	0.325	0.016	0.310	-0.072	0.013	-0.006	0.859	0.082	0.000	0.043	0.000
LOWNONAUDIT$_{it}$	-0.018	0.282	-0.031	0.233	0.064	0.032	0.014	0.664	0.108	0.000	0.112	0.000
	Financial Expert on Audit Committee		No Financial Expert on Audit Committee		Financial Expert on Audit Committee		No Financial Expert on Audit Committee		Financial Expert on Audit Committee		No Financial Expert on Audit Committee	
RNONAUDIT$_{it}$	0.028	0.193	0.044	0.140	-0.052	0.726	-0.309	0.000	1.733	0.002	1.144	0.001
LNONAUDIT$_{it}$	0.005	0.390	0.007	0.394	-0.009	0.832	-0.057	0.001	0.222	0.000	0.161	0.000
HIGHNONAUDIT$_{it}$	0.002	0.752	0.018	0.052	-0.026	0.591	-0.056	0.002	0.121	0.000	0.101	0.000
LOWNONAUDIT$_{it}$	-0.003	0.722	-0.008	0.371	0.045	0.337	0.061	0.000	0.034	0.094	0.114	0.000
	Audit Committee Meets at Least Four Times		Audit Committee Meets Less Than Four Times		Audit Committee Meets at Least Four Times		Audit Committee Meets Less Than Four Times		Audit Committee Meets at Least Four Times		Audit Committee Meets Less Than Four Times	
RNONAUDIT$_{it}$	0.024	0.201	0.020	0.557	-0.022	0.890	-0.303	0.000	1.702	0.000	1.169	0.000
LNONAUDIT$_{it}$	0.003	0.569	0.001	0.935	0.022	0.636	-0.055	0.002	0.204	0.000	0.175	0.000
HIGHNONAUDIT$_{it}$	0.005	0.476	0.017	0.097	0.008	0.876	-0.052	0.005	0.028	0.000	0.079	0.000
LOWNONAUDIT$_{it}$	-0.002	0.813	-0.005	0.581	0.021	0.676	0.065	0.000	0.69	0.000	0.109	0.000
	Material Industry		Non-material Industry		Material Industry		Non-material Industry		Material Industry		Non-material Industry	
RNONAUDIT$_{it}$	0.089	0.186	0.043	0.330	-0.262	0.005	-0.280	0.000	1.434	0.002	1.332	0.000
LNONAUDIT$_{it}$	-0.003	0.874	-0.017	0.228	-0.040	0.050	-0.049	0.015	0.129	0.000	0.181	0.000

HIGHNONAUDIT$_{it}$	0.038	0.097	-0.005	0.738	-0.047	0.098	-0.047	0.032	0.045	0.001	0.039	0.000
LOWNONAUDIT$_{it}$	-0.003	0.853	-0.021	0.156	0.055	0.026	0.060	0.003	0.131	0.000	0.071	0.000

Where:

KOTHA-ABDAC$_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; *GC_OPINION*$_{it}$ = 1 if an auditor issued a going-concern opinion for firm *i* at the end of time period t and 0 otherwise; *LNAF*$_{it}$ = natural logarithm of audit fees for firm *i* at the end of time period t; *RNONAUDIT*$_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; *LNONAUDIT*$_{it}$ = Natural logarithm of fees paid for NAS for firm *i* at the end of time period t; *HIGHNONAUDIT*$_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; *LOWNONAUDIT*$_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.9 Endogeneity Issue

The relationship between NAS and audit quality may be subject to endogeneity due to self-selection bias, which is a substantial issue when investigating the impacts of NAS on earnings management, GCOs, and audit fees. The issue of endogeneity could be raised because unobservable time-variant and time-invariant factors may be linked with both audit quality variables and NAS (Hardies, Breesch, & Branson, 2015). To examine the impact of endogeneity, we use Heckman's (1979) two-stage estimate approach, which has been used in NAS prior studies to investigate self-selection bias (Abdel-khalik, 1990; Ruddock, Taylor, & Taylor, 2006). Specifically, Heckman's (1979) two-stage estimation procedure is performed where the first stage includes a regression of key determinants of NAS[72], and from the results of this first stage regression, an inverse Mills ratio (IMR_{it}) is calculated. Then, to control for self-selection bias, this ratio is included in the second stage regression for all models used in the study (that is, earnings management, auditor's opinion, and audit fee models).

Table 7.15 reports the results for the first stage regression and indicates that almost all of the variables are significantly associated with NAS (i.e., $LNASSETS_{it}$, $BIG4_{it}$, $EQUITY_{it}$, $GROWTH_{it}$, $MKTBK_{it}$, LEV_{it}, $NEGROA_{it}$, ROA_{it}, and $USLIST_{it}$). The IMR_{it} is calculated from the first stage regression and subsequently included in the second stage regression to control for self-selection bias. We found that IMR_{it} is statistically insignificant in auditor's opinion and audit fee models[73], but it is statistically significant in the earnings management model. These findings confirm the results reported in Tables 6.2 and 6.3 for GCOs and audit fees, and they indicate that the results reported in Chapter 6 are not affected by self-selection bias.

However, the association between IMR_{it} and the absolute value of discretionary accruals using the Kothari (2005) model ($KOTHA\text{-}ABDAC_{it}$) is significant, which could suggest a self-selection bias issue. Table 7.16 reports the results for the second stage regression in earnings management model and shows that $RNONAUDIT_{it}$ and $KOTHA\text{-}ABDAC_{it}$ are significantly and positively correlated (coefficient = 0.02 and p-value = 0.05). Moreover, Table 7.16 reports that $LNONAUDIT_{it}$ is statistically significant

[72] We specify an expectation model correlating NAS fees to their determinants that have been identified in prior studies (DeFond et al., 2002; Frankel, Johnson & Nelson, 2002; Huang, Raghunandan & Rama, 2009).

[73] IMR_{it} has an insignificant association with *GCOs* (coefficient = -0.07 and p-value = 0.14) and $LNAF_{it}$ (coefficient = 0.10 and p-value = 0.37).

(coefficient = 0.00 and p-value = 0.03). These findings indicate that the association between NAS and earnings management remains positive and significant even after controlling for endogeneity. While Heckman's test results indicate an endogeneity arising from self-selection bias, this endogeneity has no impact on our analysis. Therefore, the results reported from Heckman's test confirm the robustness of the regression results reported in Chapter 6, and the self-selection bias is not likely to be driving the OLS results reported in Table 6.1

Table 7.15

Heckman's Two-stage Estimation Results – Regression for First Stage of Key Determinants of NAS

Variables	coefficient	p-value
Intercept	1.93	0.00
$LNASSETS_{it}$	1.07	0.00
$Big4_{it}$	0.38	0.00
$EQUITY_{it}$	-0.13	0.00
GROWTHit	0.00	0.00
$MKTBK_{it}$	0.02	0.00
LEV_{it}	0.10	0.00
NEGROAit	-0.12	0.04
ROAit	-0.06	0.00
MERGACQSit	-0.09	0.60
LNSUBSit	0.01	0.65
FOROPSit	-0.05	0.28
$USLIST_{it}$	-0.50	0.04
$INDUSTRY_{it}$	Included	Included
$YEAR_{it}$	Included	Included
Adjust R Square	0.512	
Sig. F change	0.00	
Observations	7779	

Regressions' Equation: $LNNAS_{it} = b_0 + b_1\ LNASSETS_{it} + b_2 BIG4it + b_3 EQUITY_{it} + b_4 GROWTH_{it} + b_5\ MKTBK_{it} + b_6 LEV_{it} + b_7 NEGROA_{it} + b_8\ ROA_{it} + b_9\ MERGACQS_{it} + b_{10} LNSUBS_{it} + b_{11} FOROPS_{it} + b_{12} USLIST_{it} + b_{13} INDUSTRY_{it} + B_{14} \Sigma YEAR_{it} + \varepsilon it$ [159]

Where:

$LNNAS_{it}$ = Natural log of non-audit services fees; $LNASSETS_{it}$ = Natural log of total assets; $Big4_{it}$ = 1 if the audit firm is a Big4 firm, and 0 otherwise; $EQUITY_{it}$ = 1 if firm i issued new shares in the current year, and 0 otherwise; $GROWTH_{it}$ = Change of assets from prior year; $MKTBK_{it}$ = Market-to-book value; LEV_{it} = Total liabilities divided by total assets; $NEGROA_{it}$ = 1 if firm i reports a negative return on assets in the current year t; ROA_{it} =Earnings before interest and taxes divided by total assets; $MERGACQS_{it}$ = 1 if firm i has merger or acquisition activities during year t; $LNSUBS_{it}$ = Natural log of number of subsidiaries; $FOROPS_{it}$ = 1 if firm i has any foreign subsidiaries in year t, and 0 otherwise; $USLIST_{it}$ = 1 if firm i is cross-listed in the US, and 0 otherwise; $INDUSTRY_{it}$ =1 if firm i in time period t is from GICS industry; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

Table 7.16

Heckman's Two-stage Estimation Results – Regression for the Second Stage of the Absolute Value of Discretionary Accruals (KOTHA-ABDAC$_{it}$)

Variables	Column 1		Column2		Column 3		Column 4	
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
Intercept	0.43	0.00	0.219	0.014	0.549	0.087	0.540	0.086
$RNONAUDIT_{it}$	0.02	0.05						
$LNONAUDIT_{it}$			0.000	0.003				
$HIGHNONAUDIT_{it}$					0.016	0.103		
$LOWNONAUDIT_{it}$							-0.024	0.010
$LNASSETS_{it}$	-0.23	0.00	-0.283	0.000	-0.297	0.000	-0.287	0.000
$L1ACCRUAL_{it-1}$	-0.29	0.00	-0.298	0.000	-0.241	0.000	-0.241	0.000
$MKTBK_{it}$	0.00	0.48	-0.002	0.034	-0.002	0.059	-0.002	0.078
LEV_{it}	-0.03	0.00	-0.032	0.000	-0.020	0.000	-0.019	0.000
$LNTENURE_{it}$	0.01	0.57	0.018	0.282	0.017	0.247	0.018	0.219
$LNAGE_{it}$	0.04	0.00	0.034	0.004	0.040	0.001	0.040	0.001
CFO_{it-1}	0.00	0.61	-0.007	0.342	0.005	0.225	0.005	0.235
ROA_{it}	-0.03	0.00	-0.038	0.000	-0.024	0.000	-0.025	0.000
$Big4_{it}$	-0.08	0.00	-0.102	0.000	-0.088	0.000	-0.085	0.000
$FINANCING_{it}$	0.03	0.00	0.019	0.039	0.020	0.015	0.019	0.018
$LOSS_{it}$	-0.02	0.12	-0.015	0.262	-0.050	0.000	-0.052	0.000
ACE_{it}	0.00	0.92	-0.002	0.861	0.010	0.504	0.013	0.395
IMR_{it}	0.16	0.00	0.207	0.000	0.187	0.000	0.182	0.000
$INDUSTRY_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
$YEAR_{it}$	Included	Included	Included	Included	Included	Included	Included	Included
Adjust R^2	0.348		0.360		0.291		0.292	
Sig. F change	0.000		0.000		0.000		0.000	
Observations	7779		7779		7779		7779	

Regressions' Equations: Column 1 based on *Equation [160]*, Column 2 based on *Equation [161]*, Column 3 based on *Equation [162]* and Column 4 based on *Equation [163]*.

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1RNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBK_{it} + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11}FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}IMR_{it} + B_{15}\Sigma INDUSTRY_{it} + B_{16}\Sigma YEAR_{it} + \varepsilon it \quad [160]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1LNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBK_{it} + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11}FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}IMR_{it} + B_{15}\Sigma INDUSTRY_{it} + B_{16}\Sigma YEAR_{it} + \varepsilon it \quad [161]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1HIGHNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBK_{it} + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11}FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}IMR_{it} + B_{15}\Sigma INDUSTRY_{it} + B_{16}\Sigma YEAR_{it} + \varepsilon it \quad [162]$$

$$KOTHA\text{-}ABDAC_{it} = B_0 + B_1LOWNONAUDIT_{it} + B_2LNASSETS_{it} + B_3L1ACCRUAL_{it-1} + B_4MKTBK_{it} + B_5LEV_{it} + B_6LNTENURE_{it} + B_7LNAGE_{it} + B_8CFO_{it-1} + B_9ROA_{it} + B_{10}BIG4_{it} + B_{11}FINANCING_{it} + B_{12}LOSS_{it} + B_{13}ACE_{it} + B_{14}IMR_{it} + B_{15}\Sigma INDUSTRY_{it} + B_{16}\Sigma YEAR_{it} + \varepsilon it \quad [163]$$

Where:

$KOTHA\text{-}ABDAC_{it}$ = The absolute value of discretionary accruals calculated using the performance adjusted Kothari (2005) model for firm *i* at the end of time period t; $RNONAUDIT_{it}$ = Ratio of non-audit fees to total fees paid to the incumbent auditor for firm *i* at the end of time period t; $LNONAUDIT_{it}$ = Natural logarithm of fees paid for NAS

for firm *i* at the end of time period t; $HIGHNONAUDIT_{it}$ = 1 if non-audit fees are greater than the median for firm *i* at the end of time period t, and 0 otherwise; $LOWNONAUDIT_{it}$ = 1 if non-audit fees are less than the median for firm *i* at the end of time period t, and 0 otherwise; $L1ACCRUAL_{it-1}$= Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortisation minus operating cash flows scaled by beginning-of-year total assets for firm *i* at the end of time period t; $LNASSETS_{it}$ = Natural logarithm of total assets for firm *i* at the end of time period t; $MKTBK_{it}$ = The market to- book ratio for firm *i* at the end of time period t (market value of equity divided by book value); LEV_{it} = Total liabilities divided by total assets for firm *i* at the end of time period t; $LNTENURE_{it}$ = Natural logarithm of audit firm tenure in years for firm *i* at the end of time period t; $LNAGE_{it}$ = natural logarithm of the number of years firm *i* has been listed on the Australian Securities Exchange (ASX) at the end of time period t; CFO_{it-1}= Operating cash flow deflated by beginning of total assets for firm *i* at the end of time period t; ROA_{it} = Return on total assets for firm *i* at the end of time period t (net income/total assets); $BIG4_{it}$ = 1 if firm *i* was audited by a Big4 audit firm at the end of time period *t*, and 0 otherwise; $FINANCING_{it}$ = 1 if merger is not equal to 1 and number of shares outstanding increased; $LOSS_{it}$ = 1 if firm *i* reports a negative operating profit at the end of time period t, and 0 otherwise; ACE_{it} = effectiveness of audit committee for firm *i* at the end of time period t, which equals 1 if the audit committee has a majority of independent directors, an audit committee member has financial expertise, the audit committee meets at least four times during the financial year, and the audit committee consists of at least three members, and 0 otherwise; IMR_{it} = The inverse Mills ratio calculated from the first regression stage of Heckman's test; $INDUSTRY_{it}$ = Industry indicator variable to control for industry effects; $YEAR_{it}$ = indicator variables controlling for temporal differences of reporting periods for firm-year observations.

Significant level at 1% ($p<0.01$), at 5% ($p<0.05$), at 10% ($p<0.1$).

7.10 Chapter Summary

This chapter reported the robustness and sensitivity tests that ensure the reliability of the study findings reported in Chapter 6. In general, the alternative measures for dependent and independent variables report consistent results. In accordance with certain characteristics, the chapter further provided several partitioning tests to ensure that the regression results are not driven by other factors. The chapter finally discussed the issue of endogeneity and the issue arising from self-selection bias.

The implications and overall conclusion of this study will be outlined in Chapter 8. The main hypotheses of this study are answered in this regard. The overall outcomes, contributions and limitations of this study will subsequently be discussed.

Chapter 8: Implications and Conclusions

8.1 Chapter Overview

Chapter 7 detailed the study findings from the comprehensive robustness and sensitivity tests completed. Specifically, the results of regressions using alternative measures for both dependent variables and NAS were reported and discussed. In addition, results of regressions – based on Chapter 6 analysis – were shown following partitioning of the sample by client characteristics, auditor characteristics, corporate governance features, and firm industry.

Chapter 8 summarises this study's major conclusions and implications. Justification for the acceptance or rejection of the major hypotheses based on the empirical results and analysis is detailed, in conjunction with elucidating this study's key findings. Implications and contributions are then drawn, with limitations and future research opportunities also highlighted. At the conclusion of the chapter, an overview of the entire study is provided.

8.2 Study Overview

This study investigated the impact of NAS on audit quality in the Australian market during a five-year time frame to determine if there is any evidence of auditors' independence issues and, hence, potential audit failure. Specifically, the primary objective of this study is to provide a comprehensive analysis of the association between the recent increase in NAS and audit quality for Australian publicly listed firms after the primary change in the audit profession, which is the conversion from self-regulation to direct-regulation. In addition, this study aimed to determine whether the current audit independence regulations are effective to regulate the current auditors' behaviour by investigating the impacts of higher demand for the provision of NAS.

Drawing on the fundamental tenets of agency theory and the findings of related prior research, a number of directional hypotheses postulating the associations between the provision of NAS and audit quality were developed. This study used a range of audit quality proxies to examine the relationship between NAS and audit quality. A positive association with earnings management was postulated with the high values of NAS, while a negative association with the issuance of GCOs was postulated with the high provision of NAS. Also, a positive

association with audit fees was postulated with the provision of NAS. For purposes of empirical analysis to formally test the derived hypothesis, several additional tests were conducted for robustness checks. Data to construct the independent and dependent variables was obtained from Annual Reports Collection, SIRCA, Connect 4, and Morningstar DatAnalysis Premium.

For the purposes of main statistical analysis, an initial pool of all Australian publicly listed and incorporated firms registered on the ASX across the observation window comprising the 2014 to 2018 calendar years was established. To enhance the ability to generalise results, the study sample was subject to necessary exclusions, including the exclusions of financial institutions, foreign firms, and observations with missing values. Also, non- distressed firms were excluded from the opinion model. Each calendar year within the observation period was considered an individual firm-year for firms included in the sample. Data were collected for each firm selected from each firm-year covered in this study. The main statistical analysis was performed using 7,779 firm-year observations (5,476 firm-year observations for the opinion model). The conclusions of the statistical analysis on the testable hypotheses are summarised in the next section.

8.3 Results Summary

Each testable hypothesis developed and investigated in this study is summarized in Table 8.1, along with its acceptance or rejection. The study's primary empirical findings are reported in Table 6.1, Table 6.2 and Table 6.3 of Chapter 6. Specifically, Table 6.1 presents regression results examining the impact of NAS on earnings management,[74] Table 6.2 presents regression results examining the impact of NAS on the auditor's judjments,[75] and Table 6.3 presents regression results examining the impact of NAS on the audit fees.

[74] The proxy of earnings management is the absolute value of discretionary accruals.
[75] The proxy of auditors' judgments is the issuance of goning concern opinions.

Table 8.1

Acceptance/Rejection of All Hypotheses

Hypothesis	Description	Accept/Reject
H_1	There is a positive association between the provision of NAS and earnings management.	Accept
H_2	There is a negative association between the provision of NAS and the issuance of GC opinion.	Accept
H_3	There is a positive association between the provision of NAS and the audit fees.	Accept

Hypothesis *H_1* proposed that the provision of NAS will be associated with higher earnings management. The primary findings confirm *H_1* by reporting an association between higher NAS values and greater earnings management as well as an association between lower NAS values and lower earnings management.

The provision of NAS, according to Hypothesis H2, is associated with lower probability of issuing GCOs. The primary findings confirm H2 by consistently showing a significant and negative association between four proxies of NAS (that is, the ratio of NAS to total fees paid to the incumbent auditor, the natural logarithm of NAS, higher values of NAS, and lower values of NAS) and the issuance of GCOs.

For hypothesis H3, it was proposed that the increase in NAS will be associated with an increase in audit fees. The study findings fully support the acceptance of H3 by consistently showing a significant and positive association between four proxies of NAS (that is, the ratio of NAS to total fees paid to the incumbent auditor, the natural logarithm of NAS, higher values of NAS, and lower values of NAS) and the audit fees.

Moreover, the study findings in Chapter 6 report insignificant results for the type of NAS, except for tax services. The findings suggest that the influence on auditors' independence is caused by the significance of NAS, and the type of NAS has no effect.

Finally, the robustness and sensitivity tests conducted in Chapter 7, using alternative measures for the dependent and independent variables, several partitioning tests as well as endogeneity check tests, support the study findings by reporting significant and consistent results. The alternative measurers reported in Chapter 7 for the variables used in the study tests report similar findings to those reported in the study tests. Also, the partitioning tests indicate

that NAS impacts auditors' independence mostly in smaller firms, high-growth firms, short audit tenure, and firms with ineffective audit committees.[76]

Overall, the findings of the study indicate that NAS leads to poor audit quality, since the results of the models used in this study support the economic bond hypotheses. The findings of this study suggest that NAS does not contribute to knowledge spillover but compromises the auditors' independence. The next section will discuss the implications of these findings.

8.4 Implications of This Study

The findings of this study provide a number of important insights into understanding the influence of NAS on audit quality. Additionally, the findings provide critical conclusions with implications for key stakeholders (e.g., regulators, investors, scholars, and client firms/corporate management). The following sub-sections discuss the implications for the various main stakeholders.

8.4.1 Regulators

Regulatory initiatives such as SOX in the US and CLERP 9 in Australia were introduced to impose rules on aspects of auditor-client engagement. In particular, regulators impelled regulations regarding the amount of NAS in response to public concerns about alleged accounting and audit failures, with the goal of improving auditor independence. While CLERP 9 in Australia imposed extensive disclosure requirements on NAS, other acts like SOX in the US and EC in European countries prohibit the incumbent auditors from providing some types of NAS. Despite the differences in the regulations on NAS among the regions, there was a notable improvement in audit independence after the implementations of these acts. However, there is a paucity of research on the impact of the recent increase on NAS (Beardsley et al. 2018), in line with the inertness of the regulations (Knechel 2016). Therefore, regulators will benefit from this study's findings since it provides current and vaild implications for the provision of NAS.

Results from this study suggest that the provision of NAS has a statistically significant association with higher earnings management, fewer issuances of GCOs, and higher audit fees, and, therefore, NAS is likely to lower audit quality. A major consequence of this is that the

[76] The tests report higher earnings management and fewer GCOs for firms with an audit committee that either meets less than four times or has no financial experts.

current regulations are not effective in response to the influence of the substantial increase in NAS. Based on the results of this study, the implementation of new requirements regarding the provision of NAS could improve the audit quality in Australia. Specifically, this study documents that better corporate governance mechanisms lower the negative impacts of NAS, since the findings suggest that NAS lowers audit quality significantly in firms with ineffective audit committees. Thus, regulators may control the negative impacts of NAS by requiring the audit committee board members to have a certain level of financial expertise, mandating a certain frequency of audit committee meetings, and requiring audit committee members to maintain a certain level of independence.

In line with the importance of the effective audit committee, the current regulation requires only the larger firms to have an audit committee. The findings of this study suggest that smaller firms are more likely to be involved in earnings management practises as well as a bias in auditors' judgment when higher values of NAS are presented. Thus, based on the findings of this study, regulators should consider modifying the current rules of corporate governance[77] and requiring the listed smaller firms to have an audit committee.

Furthermore, the findings of this study suggest that NAS impacts audit quality negatively when the audit engagement is in its first years. This impairment could be attributed to a lack of specific knowledge of clients' operations during the early years (Knechel & Vanstraelen, 2007; Ruiz-Barbadillo et al., 2009; Daugherty et al., 2012; Read & Yezegel, 2016) or even the auditor's need to get more clients (Deangelo, 1981b). Despite the reasons beyond the lack of independence during the early years of audit engagement, there is a necessity to improve the current Australian auditors' independence requirements. Thus, regulators may impose more restrictions on the provision of NAS during the initial years of audit engagements.

8.4.2 Investors

As a consequence of the separation between ownership and control, existing investigations commonly acknowledge a substantial asymmetrical information gap between firm management and investors (Berle & Means, 1932; Clinch et al., 2012; Copeland et al., 2005; Fernando, 2012; Gay & Simnett, 2012; Hillman & Dalziel, 2003; Klein, 1998; Moroney et al., 2014; Vafeas, 1999; Watts & Zimmerman, 1980). Investors need accurate information

[77] The current version of the Council's Corporate Governance Principles and Recommendations (4th Edition) was released on February 27, 2019, and has been effective since January 1, 2020. It recommends that the board of a listed entity should have an audit committee, but it is indicated that, in Recommendation 4.1, an entity must have an audit committee if it is included in the S&P/ASX 300a Index.

to guide them when they make decisions about the economic options of whether to acquire, sell, or keep investments. The auditors' primary goal is to increase trust in the financial information companies disclose (AICPA, 1952; Jubb et al., 2008; Leung et al., 2007; Caramanis & Lennox, 2008). With an appropriate level of audit quality, the financial information reported by a firm's management has more trust and better quality data is accessible to investors for the decision-making process. Indeed, investors may be able to utilise audit quality to distinguish between investment options (Firth & Liau-Tan, 1998; Copley & Douthett, 2002).

According to audit quality literature, audit independence is a critical aspect of audit quality because a lack of audit independence undermines the credibility of financial information reported by management and may lead to audit failure (Sridharan et al., 2002; Vinten, 2002; Watkins, 2003; Madrick, 2003; Coffee, 2004; Fearnley & Beattie, 2004; Moriceau, 2005). In fact, the joint provision of audit and NAS by an incumbent auditor to a client could be perceived negatively by investors, since the higher value of NAS could motivate the auditor's self-interest and economic dependence, and lead the auditor to act as an advocate of corporate management (Craswell 1999; Beattie & Fearnley, 2002; Quick & Warming-Rasmussen, 2005). Therefore, the lack of audit independence could significantly impact the investors' interests.

Several studies indicate that investors view the provision of NAS as compromising audit quality due to the lack of auditors' independence (Krishnan, Sami, & Zhang, 2005; Francis & Ke, 2006; Khurana & Raman, 2006; Cripe & McAllister, 2009; Dart, 2011; Schmidt, 2012). The findings of this study provide investors with a better understanding of the impact of the recent increase in NAS on auditors' independence, since this study provides comprehensive analysis and evidence of the current level of audit independence. Consistent with the expectations of investors, the findings of this study indicate that the provision of NAS is associated with greater earnings management and higher probability of clean audit opinions. These findings imply that Australian capital market investors may use the provision of NAS as a signal of a firm with a higher likelihood of a lower quality of the reported financial information. The additional partitioning tests conducted provide evidence of certain factors in which NAS impacts audit quality most, including smaller firms, high-growth firms, short audit tenure, and ineffective audit committees. Thus, when these factors are involved in the provision of NAS, Australian investors need to further lobby regulators to restrict the provision of NAS.

8.4.3 Scholars

The significant role that audit quality plays in ensuring the efficient operation of the capital markets has prompted numerous scholars to devote a great deal of time and energy to investigating audit quality. The invistigatins aim to determine the effectiveness of the external auditor in improving the credibility of reported financial data. In addition, the various scandals, such as Enron, WorldCom, etc., involving misrepresented financial statements have piqued the interest of stakeholders, prompting them to question the role of auditors. As a result, a considerable amount of academic research has been conducted to investigate the audit quality.

The findings and implications of this study will be of considerable interest to academics working on examining the impact of NAS on auditors' independce and expertise. This study provides a comprehensive analysis of the impact of NAS on audit quality, since audit quality is measured by three different variables (that is, earnings management, auditor opinion, and audit fees). Such a comprehensive examination of NAS contributes to the continuing discussion and dispute among academics over the validity of studies. In addition, prior studies have focused on time periods post and pre-govermental acts like SOX and CLERP 9. There are very few published studies that examine the impact of the current increase in NAS purchases.

Furthermore, the implications of this study will be beneficial for scholars that are concerned about the impact of the type of NAS on audit quality. The findings of this study demonstrate that the lack of auditors' independence is mainly driven by the importance of the revenue generated from the provision of NAS, disregarded the type of services.

8.4.4 Client Firms /Corporate Management

The findings of this study have significant implications for client firms and corporate management. The findings suggest that the provision of NAS is linked with aggressive practises of earnings management as well as unexpected auditors judgments. Thus, client firms and corporate management should consider strategies to be adopted in order to minimise the negative impacts of NAS.

One strategy could involve the enhancement of corporate governance mechanisms. The findings of this study suggest that the audit committee that meets at least four times annually contributes to improving auditors' independence even when the higher value of NAS is involved. Based on the findings of this study, if the client increases the number of meetings held by the audit committee, the likelihood of compromising the auditors' independence will

be lower. In addition, the findings of this study indicate that the financial experts in the audit committee play a significant role in minimising the negative impacts of NAS. Thus, client firms and corporate management should adopt a minimum requirement of regarding the members of the audit committee with at least one member with a financial background, especially when higher values of NAS are involved.

In addition to improving corporate governance mechanisms, client firms should pay closer attention to audit tenure when making NAS purchasing decisions. The findings of this study indicate that NAS impacts audit quality significantly during the early years of audit engagements. Thus, client firms may avoid purchasing higher values of NAS from their incumbent auditors during the first years of audit engagement.

8.4.5 The Auditing Profession

The findings of this study have substantial implications for the auditing profession. The results of this study indicate that the provison of NAS examined in this study is significantly associated with poor audit quality. Specfically, results clearly indicate that the high demand for NAS compromises auditors' independence. Smaller and high-growth firms as well as firms with short audit tenure are found to be more impacted from the provision of NAS. The findings of this study also show that the members of an effective audit committee contribute to reducing the negative effects of NAS.Therefore, the existence of NAS growth suggests that regulatory and market intervention are necessary. Specifically, calls for a compulsory audit committee for smaller firms and prohibits the provision of NAS from the incumbent auditors during the early years of audit engagements may be warranted.

8.5 Major Contributions of This Study

Results from this study make various important contributions. First, results from this study's analysis provide evidence about the association between NAS and audit quality by investigating the impact of the recent increase in NAS on audit quality after the conversion from self-regulation to direct-regulation. The results suggest that the provision of NAS is significantly associated with audit quality. This provides evidence contrary to concerns about the existence and growth of NAS nationally and internationally. According to Knechel (2013), there are several indicators of audit quality, including input indicators such as audit fees, output indicators such as the issuance of GCOs, and the consideration of overall quality of financial reporting. This study provides a comprehensive analysis that considers these three indicators

of audit quality. Therefore, this study contributes to the literature by providing a comprehensive analysis of the impact of the recent increase in NAS and audit quality. The result, therefore, has important consequences for the efficient and effective operation of capital markets, scholars, auditors, and clients.

Second, the results of this study help in determining the efficacy of recent regulatory initiatives on the provision of NAS. The results reported in Tables 6.1, 6.2, and 6.3, point that NAS is assoicated with aggressive practises of earnings management as well as a suspicious auditors' opinion. This implies that there is a lack of NAS regulations, and the introduction of CLERP 9 is no longer valid. However, CLERP 9 requires larger client firms to have an audit committee, and based on the findings of this study, NAS does not compromise auditors' independence in larger client firms as well as firms with an effective audit committee. This indicates that CLERP 9 regulations are contounilly successful in improving audit quality in some aspects even with the current increase in NAS. Importantly, the CLERP 9 regulations do not effectively regulate the provision of NAS for the entire audit engagement involvoed in the Australian market. Therefore, the lack of current regulation and the increase in NAS may have a negative impact on the Australian market.

Third, this study provides evidence that contrubites to deep understanding of the impacts of NAS. Specifically, the results reported in Table 6.4 demonstrate the impact of NAS based on its type. The results generally suggest that the negative impact of NAS is driven by the importance of generated revenue from these services, regardless of the type of service.

Fourth, the findings of this study provide evidence of the existence of earnings management practises in Australian publicly listed firms. The regression tests (reported in section 6.2.1) document that earnings management practices are positively correlated with *BIG4*, which is contrary to the prior literature (DeFond & Zhang, 2014; Francis et al., 1999; Singh et al., 2019), but the difference can be explained by the fact that the change in the audit environment has a significant impact on not only small but also larger audit firms.

Fifth, the results of this study confirm the findings of a US study (Beardsley et al. 2021). Therefore, this study's findings contribute to perceive the extent to which the Australian results can be extended to a different governance and audit quality framework.

Overall, these study findings offer critical contributions to stakeholders. For instance, policymakers and regulators can benefit from the comprehensive analysis made in this study to understand better the effectiveness of the current regulations in relation to enhancing audit

quality. The study analysis provides information about the impacts of NAS on earnings management and auditors' reports. These findings contribute to benefiting capital market participants by limiting the manipulation of financial statements and, therefore, future firm collapses. Moreover, auditors can benefit from the additional analysis made in this study to evaluate the ideal behaviour and identify potential risks when they provide NAS,[78] For instance, auditors will understand which audit engagements could mostly be impacted by NAS. Finally, client firms will benefit from this study's findings by understanding the sequences of purchasing NAS.

8.6 Limitations and Future Research

While this study has a number of strengths, it is not without limitations.[79] For example, audit quality is a multidimensional and a complicated concept that may be measured using a variety of proxies. This study only examined three specific proxies for audit quality. This study focuses primarily on the impact of NAS on audit quality, ignoring financial reporting quality, despite the fact that audit quality is a critical component of financial reporting quality. Moreover, while this study's models include a variety of control variables (in addition to NAS), it is possible that other variables that might affect audit quality are not included in the models. Furthermore, the study's findings may not be generalizable, since the analysis data for this study was obtained from Australia.

The study's scope, objectives, and findings suggest various areas for further investigation. Perhaps at the least, future research should address the limitations noted above. Therefore, future research should consider other audit quality measurements to assure the validity of this study's findings. Also, future research may investigate the impact of the increase in NAS on financial reporting quality. For example, future research may examine whether the knowledge spillover contributes to enhancing the timeliness of the financial statements.[80] Moreover, to determine the external validity of this study's conclusions, more research may be conducted outside of Australia, especially in nations that impose more restrictions on the provision of NAS. Additionally, this study examined the 2014 to 2018 time period. Future research may examine more contemporaneous timeframes or shorter time periods to consider

[78] The partitioning tests reported in Chapter seven identifies several factors in which NAS impacts mostly audit quality.
[79] Chapter one, section 1.4, explains in details the limitations of this study.
[80] This study's findings indicate that there are some factors where NAS does not compromise auditors' independence, so future research should consider these factors when examining the knowledge spillover.

the impact of a specific event. For instance, this study's analysis can be re-performed with a sample period covering the impacts of the pandemic period (COVID 19) that starts in 2019. Finally, while this study investigated several categories of NAS, the findings of this study are limited to three proxies of audit quality. Therefore, future research may examine the impact of each type of NAS on audit quality using other proxies with consideration of the factors identified in this study where NAS does not compromise audit independence[81].

8.7 Overall Summary

The comprehensive analysis of this study introduces important insights into the association between the association of the provision of NAS and audit quality for Australian publicly listed firms. An investigation into the recent increase in NAS linkage is of regulatory, professional and capital market investor interest with significant concerns having been expressed about the growth of NAS and auditors' independence within the Australian market. Findings from this study suggest that NAS indeed compromises auditors' independence, and the high revenues generated from NAS and paid to the incumbent auditors are more likely to increase the aggressive earnings management practises as well as compromise the objectivity of auditors when issuing an audit opinion. Therefore, this study provides evidence about the lack of current regulations and suggests more restrictions should be imposed on the provision of NAS. The findings of this study are based on a substantial sample of Australian publicly listed firms, thereby providing an in-depth cross-sectional coverage of the Australian capital market. The results provide essential information to key stakeholders on the determinants of audit quality. However, this study is not without limitations, but the limitations also provide a fruitful avenue for future research.

[81] This study indicates several factors that NAS does not compromise auditors' independence, including larger firms, high-growth firms, medium audit tenure, and effective audit committees.

References

Abbott, L. J., Park, Y., & Parker, S. (2000). The effects of audit committee activity and independence on corporate fraud. *Managerial Finance*, 26(11), 55-68. https://doi.org/10.1108/03074350010766990

Abbott, L. J., Parker, S., & Peters, G. F. (2003). The effects of post-bankruptcy financing on going concern reporting. *Advances in Accounting*, *20*, 1–22.

Abbott, L. J., Parker, S., & Peters, G. F. (2004). Audit committee characteristics and restatements. *Auditing: A Journal of Practice & Theory*, *23*(1), 69–87.

Abdel-Khalik, A. R. (1990). The jointness of audit fees and demand for MAS: A self-selection analysis. *Contemporary Accounting Research*, *6*(2), 295–322.

Abdul Rahman, R. and Haneem Mohamed Ali, F. (2006). Board, audit committee, culture and earnings management: Malaysian evidence. *Managerial Auditing Journal*, 21(7), 783-804. https://doi.org/10.1108/02686900610680549

Abu, T. M., Monir, M., Ron, M., & Md Khokan, B. (2020). Effects of audit quality and audit committee characteristics on earnings management during the global financial crisis – Evidence from Australia. *Australasian Accounting, Business & Finance Journal*, *14*(4), 85A–115. https://doi.org/10.14453/aabfj.v14i4.6

Accounting Professional & Ethical Standards Board. (2018, November). APES 110 code of ethics for professional accountants (including independence standards). https://apesb.org.au/uploads/home/02112018000152_APES_110_Restructured_Code_Nov_2018.pdf

Adut, D., Duru, A., & Galpin, W. L. (2011). The role of corporate governance in meeting or beating analysts' forecast. *Journal of Accounting and Public Policy*, *30*(2), 188–198.

Agoglia, C. P., Hatfield, R. C., & Lambert, T. A. (2015). Audit team time reporting: An agency theory perspective. *Accounting, Organizations and Society*, *44*, 1–14.

Ahadiat, N. (2011). Association between audit opinion and provision of non-audit services. *International Journal of Accounting & Information Management*, *19*(2), 182–193. https://doi.org/10.1108/18347641111136463

Aldamen, H., Duncan, K., Kelly, S., McNamara, R., & Nagel, S. (2012). Audit committee characteristics and firm performance during the global financial crisis. *Accounting & Finance*, *52*(4), 971–1000.

Alderman, J., & Jollineau, S. J. (2020). Can audit committee expertise increase external auditors' litigation risk? The moderating effect of audit committee independence. *Contemporary Accounting Research*, *37*(2), 717–740. https://doi.org/10.1111/1911-3846.12549

Ali, M. J., Singh, R. K. S., & Al-Akra, M. (2018). The impact of audit committee effectiveness on audit fees and non-audit service fees. *Accounting Research Journal*, *31*(2), 174–191. https://doi.org/10.1108/ARJ-11-2015-0144 Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, *23*(4), 589-609.

Altman, E. I., & McGough, T. P. (1974). Evaluation of a company as a going concern. *Journal of Accountancy*, *138*(6), 50–57.

American Institute of Certified Public Accountants. (1952). *Newsletters*. (86). https://egrove.olemiss.edu/aicpa_news/86

American Institute of Certified Public Accountants. (1981). AICPA Professional Standards. 140. https://egrove.olemiss.edu/aicpa_prof/140

American Institute of Certified Public Accountants. (1988). AICPA Professional Standards. 147. https://egrove.olemiss.edu/aicpa_prof/147

Amin, K., Krishnan, J., & Joon Sun, Y. (2014). Going concern opinion and cost of equity. *Auditing: A Journal of Practice & Theory*, *33*(4), 1–39. https://doi.org/10.2308/ajpt-50827

Anantharaman, D., Pittman, J. A., & Wans, N. (2016). State liability regimes within the United States and auditor reporting. *The Accounting Review*, *91*(6), 1545–1575.

Ang, J. S., Cole, R. A., & Lin, J. W. (2000). Agency costs and ownership structure. *The Journal of Finance*, *55*(1), 81–106.

Antle, R. (1984). Auditor independence. *Journal of Accounting Research*, 22(1), 1–20.

Antle, R., Gordon, E., Narayanamoorthy, G., & Zhou, L. (2006). The joint determination of audit fees, non-audit fees, and abnormal accruals. *Review of Quantitative Finance & Accounting*, *27*(3), 235–266. https://doi.org/10.1007/s11156-006-9430-y

Archambeault, D. S., DeZoort, F. T., & Hermanson, D. R. (2008). Audit committee incentive compensation and accounting restatements. *Contemporary Accounting Research*, *25*(4), 965-992.

Arens, A., & Loebbecke, J. (2000). Auditing "An Integrated Approach" Prentice Hall. *Inc. Upper Saddle River, New Jersey*.

Arnold, B., & De Lange, P. (2004). Enron: An examination of agency problems. *Critical Perspectives on Accounting*, *15*(6-7), 751–765.

Arrunada, B. (1999). The provision of non-audit services by auditors let the market evolve and decide. *International Review of Law & Economics*, *19*(4), 513–31.

Ashari, N., Koh, H. C., Tan, S. L., & Wong, W. H. (1994). Factors affecting income smoothing among listed companies in Singapore. *Accounting and Business Research, 24*(96), 291–301. https://doi.org/10.1080/00014788.1994.9729488

Ashbaugh, H., LaFond, R., & Mayhew, B. W. (2003). Do nonaudit services compromise auditor independence? Further evidence. *The Accounting Review, 78*(3), 611–639. https://doi.org/10.2308/accr.2003.78.3.611

Ater, B., & Hansen, T. B. (2020). Earnings management prior to private debt issuance. *Accounting Research Journal*, *33*(2), 269–285.

Auditing and Assurance Standards Board. (2015, December). *Auditing standard ASA 570: Going concern*. Australian Government. https://www.auasb.gov.au/admin/file/content102/c3/ASA_570_2015.pdf

Australian Accounting Standards Board. (2020, December). *Review of auditor remuneration disclosure requirements* (AASB Research Report 15). Commonwealth of Australia. https://www.aasb.gov.au/admin/file/content102/c3/RR15_AuditorDisclosureRequirements_12-20.pdf

Australian Government. (2004). *Corporate Law Economic Reform Program (Audit Reform & Corporate Disclosure) Act 2004*. Federal Register of Legislation. https://www.legislation.gov.au/Details/C2004A01334

Australian Securities & Investments Commission. (2017). *Audit quality: The role of directors and audit committees*. https://asic.gov.au/regulatory-resources/financial-reporting-and-audit/auditors/audit-quality-the-role-of-directors-and-audit-committees/

Baatwah, S. R., Omer, W. K., & Aljaaidi, K. S. (2021). Outsourced internal audit function and real earnings management: The role of industry and firm expertise of external providers. *International Journal of Auditing, 25*(1), 206–232.

Baggott, R. (1989). Regulatory reform in Britain: the changing face of self-regulation. *Public Administration, 67*(4), 435–454.

Bailey, C., Collins, D. L., & Abbott, L. J. (2018). The impact of enterprise risk management on the audit process: Evidence from audit fees and audit delay. *Auditing: A Journal of Practice & Theory, 37*(3), 25–46.

Ball, R. (2009). Market and political/regulatory perspectives on the recent accounting scandals. *Journal of Accounting Research*, *47*(2), 277–323. https://doi.org/10.1111/j.1475-679X.2009.00325.x

Balsam, S., Haw, I. M., & Lilien, S. B. (1995). Mandated accounting changes and managerial discretion. *Journal of Accounting and Economics*, *20*(1), 3–29.

Balsam, S., Krishnan, J., & Yang, J. S. (2003). Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory*, *22*(2), 71–97.

Bamber, E. M., Bamber, L. S., & Schoderbek, M. P. (1993). Audit structure and other determinants of audit report lag: An empirical analysis. *Auditing: A Journal of Practice & Theory*, *12*(1), 1.

Bamber, E. M., & Iyer, V. M. (2007). Auditors' identification with their clients and its effect on auditors' objectivity. *Auditing: A Journal of Practice & Theory*, *26*(2), 1–24.

Barefield, R. M., Gaver, J. J., & Keefe, T. B. (1993). Additional evidence on the economics of attest: Extending results from the audit market to the market for compilations and reviews. *Auditing: A Journal of Practice & Theory*, *12*(1), 76.

Barkess, L., & Simnett, R. (1994). The provision of other services by auditors: Independence and pricing issues. *Accounting & Business Research*, *24*(94), 99–108.

Barr, A. (1959). The independent accountant and the SEC. *Journal of Accountancy*, *108*(4), 32–37.

Barth, M. E., Cram, D. P., & Nelson, K. K. (2001). Accruals and the prediction of future cash flows. *The Accounting Review*, *76*(1), 27–58.

Bartle, I., & Vass, P. (2005). *Self-regulation and the regulatory state: A survey of policy and practice*. Citeseer.

Bartov, E., Gul, F. A., & Tsui, J. S. (2000). Discretionary-accruals models and audit qualifications. *Journal of Accounting and Economics*, *30*(3), 421–452.

Basioudis, I. G. (2007). Auditor's engagement risk and audit fees: The role of audit firm alumni. *Journal of Business Finance & Accounting*, *34*(9-10), 1393–1422.

Basioudis, I. G., & Fifi, F. (2004). The market for professional services in Indonesia. *International Journal of Auditing*, *8*(2), 153–164.

Basioudis, I. G., Papakonstantinou, E., & Geiger, M. A. (2008). Audit fees, non-audit fees and auditor going-concern reporting decisions in the United Kingdom. *Abacus*, *44*(3), 284–309.

Basu, S., Hwang, L. S., & Jan, C. L. (2001). Differences in conservatism between big eight and non-big eight auditors. *Working Paper*. http://dx.doi.org/10.2139/ssrn.2428836.

Bathke, A. W., Jr., Lorek, K. S., & Willinger, G. L. (1989). Firm-size and the predictive ability of quarterly earnings data. *The Accounting Review*, *64*(1) 49–68.

Barth, M. E., Beaver, W. H., & Landsman, W. R. (1998). Relative valuation roles of equity book value and net income as a function of financial health. *Journal of Accounting and Economics*, *25*(1), 1–34.

Baxter, P., & Cotter, J. (2009). Audit committees and earnings quality. *Accounting & Finance, 49*(2), 267–290.

Beardsley, E. L., Imdieke, A. J., & Omer, T. C. (2021). The distraction effect of non-audit services on audit quality. *Journal of Accounting and Economics, 71*(2), 101380.

Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *Accounting Review*, *71*(4)443–465.

Beattie, V., & Fearnley, S. (2002). *Auditor independence and non-audit services: A literature review*. Institute of Chartered Accountants in England and Wales.

Beatty, R. P. (1989). Auditor reputation and the pricing of initial public offerings. *The Accounting Review*, 693–709.

Beck, P. J., Frecka, T. J., & Solomon, I. (1988a). An empirical analysis of the relationship between MAS involvement and auditor tenure: Implications for auditor independence. *Journal of Accounting Literature*, *7*(1), 65–84.

Beck, P. J., Frecka, T. J., & Solomon, I. (1988b). A model of the market for MAS and audit services: Knowledge spillovers and auditor-auditee bonding. *Journal of Accounting Literature*, *7*(1), 50–64.

Becker, C. L., Defond, M. L., Jiambalvo, J., & Subramanyam, K. R. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research, 15*(1), 1–24. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=574835&site=ehost-live

Beekes, W., Pope, P., & Young, S. (2004). The link between earnings timeliness, earnings conservatism and board composition: Evidence from the UK. *Corporate Governance: An International Review*, *12*(1), 47–59.

Behn, B. K., Choi, J. H., & Kang, T. (2008). Audit quality and properties of analyst earnings forecasts. *The Accounting Review*, *83*(2), 327–349.

Behn, B. K., Kaplan, S. E., & Krumwiede, K. R. (2001). Further evidence on the auditor's going-concern report: The influence of management plans. *Auditing: A Journal of Practice & Theory*, *20*(1), 13–28.

Bell, T. B., Causholli, M., & Knechel, W. R. (2015). Audit firm tenure, non-audit services, and internal assessments of audit quality. *Journal of Accounting Research, 53*(3), 461–509. https://doi.org/10.1111/1475-679x.12078

Bell, T. B., Landsman, W. R., & Shackelford, D. A. (2001). Auditors' perceived business risk and audit fees: Analysis and evidence. *Journal of Accounting Research, 39*(1), 35–43. https://doi.org/10.1111/1475-679X.00002

Bell, T. B., & Tabor, R. H. (1991). Empirical Analysis of Audit Uncertainty Qualifications. *Journal of Accounting Research*, *29*(2), 350–370. https://doi.org/10.2307/2491053

Beneish, M.D. (2001), "Earnings management: a perspective", *Managerial Finance*, *27*(12), 3–17.

Benston, G. J. (1980). The establishment and enforcement of accounting standards: Methods, benefits and costs. *Accounting and Business Research*, *11*(41), 51–60.

Berglund, N. R., Eshleman, J. D., & Guo, P. (2018). Auditor size and going concern reporting. *Auditing: A Journal of Practice & Theory*, *37*(2), 1–25.

Bergstresser, D., Desai, M., & Rauh, J. (2006). Earnings manipulation, pension assumptions, and managerial investment decisions. *The Quarterly Journal of Economics*, *121*(1), 157–195.

Berle, A., & Means, G. (1932). *The modern corporation and private property* (Rev. ed.). Macmillan.

Bills, K. L., Jeter, D. C., & Stein, S. E. (2015). Auditor industry specialization and evidence of cost efficiencies in homogenous industries. *The Accounting Review*, *90*(5), 1721–1754.

Blacconiere, W. G., & DeFond, M. L. (1997). An investigation of independent audit opinions and subsequent independent auditor litigation of publicly-traded failed savings and loans. *Journal of Accounting & Public Policy*, *16*(4), 415–454.

Garcia-Blandon, J., Argiles-Bosch, J. M., Castillo-Merino, D., & Martinez-Blasco, M. (2017). An assessment of the provisions of regulation (EU) No 537/2014 on non-audit services and audit firm tenure: Evidence from Spain. *The International Journal of Accounting*, *52*(3), 251–261.

Blay, A. D. (2005). Independence threats, litigation risk, and the auditor's decision process. *Contemporary Accounting Research*, *22*(4), 759–789.

Blay, A. D., Geiger, M. A., & North, D. S. (2011). The auditor's going-concern opinion as a communication of risk. *Auditing: A Journal of Practice & Theory*, *30*(2), 77–102.

Boo, E. F., & Sharma, D. (2008). Effect of regulatory oversight on the association between internal governance characteristics and audit fees. *Accounting & Finance*, *48*(1), 51–71.

Bradbury, M. E. (2017). Large audit firm premium and audit specialisation in the public sector. *Accounting & Finance*, *57*(3), 657–679. https://doi.org/10.1111/acfi.12167

Brinn, T., Peel, M. J., & Roberts, R. (1994). Audit fee determinants of independent & subsidiary unquoted companies in the UK: An exploratory study. *The British Accounting Review*, *26*(2), 101–121.

Bruynseels, L., & Cardinaels, E. (2014). The audit committee: Management watchdog or personal friend of the CEO? *The Accounting Review*, *89*(1), 113–145.

Bruynseels, L., Knechel, W. R., & Willekens, M. (2006). *Do industry specialists and business risk auditors enhance audit reporting accuracy?* Faculty of Economics and Applied Economics, KU Leuven.

Bruynseels, L., Knechel, W. R., & Willekens, M. (2011). Auditor differentiation, mitigating management actions, and audit-reporting accuracy for distressed firms. *Auditing: A Journal of Practice & Theory*, *30*(1), 1–20.

Bruynseels, L., Knechel, W. R., & Willekens, M. (2013). Turnaround initiatives and auditors' going-concern judgment: Memory for audit evidence. *Auditing: A Journal of Practice & Theory*, *32*(3), 105–121.

Bruynseels, L., & Willekens, M. (2012). The effect of strategic and operating turnaround initiatives on audit reporting for distressed companies. *Accounting, Organizations and Society*, *37*(4), 223–241.

Bryan, D. B., & Mason, T. W. (2016). Extreme CEO pay cuts and audit fees. *Advances in Accounting, incorporating Advances in International Accounting*, *33*, 1–10. https://doi.org/10.1016/j.adiac.2016.02.001

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of accounting and economics*, *24*(1), 99–126.

Burnett, B., Chen, H., & Gunny, K. (2018). Auditor-provided lobbying service and audit quality. *Journal of Accounting, Auditing & Finance*, *33*(5), 402–434. https://doi.org/10.1177/0148558X16657249

Burrows, G., & Black, C. (1998). Profit sharing in Australian Big 6 accounting firms: An exploratory study. *Accounting, Organizations and Society*, *23*(5-6), 517–530.

Butterworth, S., & Houghton, K. A. (1995). Auditor switching: The pricing of audit services. *Journal of Business Finance & Accounting*, *22*(3), 323–344. https://doi.org/10.1111/j.1468-5957.1995.tb00877.x

Cahan, S. F. (1992). The effect of antitrust investigations on discretionary accruals: A refined test of the political-cost hypothesis. *The Accounting review*, *67*(1), 77-95.

Cahan, S. F., Godfrey, J. M., Hamilton, J., & Jeter, D. C. (2008). Auditor specialization, auditor dominance, and audit fees: The role of investment opportunities. *The Accounting Review*, *83*(6), 1393–1423.

Callaghan, J., Parkash, M., & Singhal, R. (2009). Going-concern audit opinions and the provision of nonaudit services: Implications for auditor independence of bankrupt firms. *Auditing: A Journal of Practice & Theory*, *28*(1), 153–169.

Cameran, M. (2005). Audit fees and the large auditor premium in the Italian market. *International Journal of Auditing*, *9*(2), 129–146.

Van Caneghem, T. (2010). Audit pricing and the Big4 fee premium: evidence from Belgium. *Managerial Auditing Journal*, *25*(2), 122–139.

Cannella, A. A., Jr., & Lubatkin, M. (1993). Succession as a sociopolitical process: Internal impediments to outsider selection. *Academy of Management journal*, *36*(4), 763–793.

Caramanis, C., & Lennox, C. (2008). Audit effort and earnings management. *Journal of Accounting and Economics*, *45*(1), 116–138.

Caramanis, C., & Spathis, C. (2006). Auditee and audit firm characteristics as determinants of audit qualifications. *Managerial Auditing Journal*, *21*(9), 905–920.

Carcello, J. V., Hermanson, D. R., Neal, T. L., & Riley, R. A., Jr. (2002). Board characteristics and audit fees. *Contemporary Accounting Research*, *19*(3), 365–384.

Carcello, J. V., & Nagy, A. L. (2004). Audit firm tenure and fraudulent financial reporting. *Auditing: A Journal of Practice & Theory*, *23*(2), 55–69.

Carcello, J. V., & Neal, T. L. (2000). Audit committee composition and auditor reporting. *The Accounting Review*, *75*(4), 453–467.

Carcello, J. V., & Neal, T. L. (2003). Audit committee characteristics and auditor dismissals following "new" going-concern reports. *The Accounting Review*, *78*(1), 95–117.

Carcello, J. V., & Palmrose, Z.-V. (1994). Auditor Litigation and Modified Reporting on Bankrupt Clients. *Journal of Accounting Research*, *32*, 1–30.

Carey, P., Kortum, S., & Moroney, R. (2012). Auditors' going-concern-modified opinions after 2001: Measuring reporting accuracy. *Accounting & Finance*, *52*(4), 1041–1059.

Carey, P., & Simnett, R. (2006). Audit partner tenure and audit quality. *The Accounting Review*, *81*(3), 653–676.

Carey, P. J., Geiger, M. A., & O'Connell, B. T. (2008). Costs associated with going-concern-modified audit opinions: An analysis of the Australian audit market. *Abacus*, *44*(1), 61–81.

Carey, P. J., Monroe, G. S., & Shailer, G. (2014). Review of post-CLERP 9 Australian auditor independence research. *Australian Accounting Review*, *24*(4), 370–380. https://doi.org/10.1111/auar.12047

Carlson, S. J., Glezen, G. W., & Benefield, M. E. (1998). An investigation of investor reaction to the information content of a going concern audit report

while controlling for concurrent financial statement disclosures. *Quarterly Journal of Business and Economics*, *37*(3), 25–39.

Carson, E. (2019). *Research report 4: The provision of non-audit services by audit firms in Australia*. https://www.auasb.gov.au/admin/file/content102/c3/AUASB_ResearchReport4_Dec19.pdf

Carson, E. (2009). Industry specialization by global audit firm networks. *The Accounting Review*, *84*(2), 355–382.

Carson, E., & Fargher, N. (2007). Note on audit fee premiums to client size and industry specialization. *Accounting & Finance*, *47*(3), 423–446.

Carson, E., Fargher, N., & Zhang, Y. (2016). Trends in auditor reporting in Australia: A synthesis and opportunities for research. *Australian Accounting Review*, *26*(3), 226–242. https://doi.org/10.1111/auar.12124

Carson, E., Fargher, N., & Zhang, Y. (2019). Explaining auditors' propensity to issue going-concern opinions in Australia after the global financial crisis. *Accounting & Finance*, *59*(4), 2415–2453.

Carson, E., Fargher, N. L., Geiger, M. A., Lennox, C. S., Raghunandan, K., & Willekens, M. (2013). Audit reporting for going-concern uncertainty: A research synthesis. *Auditing: A Journal of Practice & Theory*, *32*(Supplement 1), 353–384.

Castillo-Merino, D., Garcia-Blandon, J., & Martinez-Blasco, M. (2020). Auditor independence, current and future NAS fees and audit quality: Were European regulators right? *European Accounting Review*, *29*(2), 233-262.

Causholli, M., Chambers, D. J., & Payne, J. L. (2014). Future nonaudit service fees and audit quality. *Contemporary Accounting Research*, *31*(3), 681–712. https://doi.org/10.1111/1911-3846.12042

Chai, S., & Jubb, C. (2000). *Audit and non-audit service provision: Earnings management and audit opinion implications*. University of Melbourne. Department of Accounting.

Chan, P., Ezzamel, M., & Gwilliam, D. (1993). Determinants of audit fees for quoted UK companies. *Journal of Business Finance & Accounting*, *20*(6), 765–786.

Chan, A. M. Y., Liu, G., & Sun, J. (2013). Independent audit committee members' board tenure and audit fees. *Accounting & Finance*, *53*(4), 1129–1147.

Chaney, P. K., Jeter, D. C., & Shivakumar, L. (2004). Self-selection of auditors and audit pricing in private firms. *The Accounting Review*, *79*(1), 51–72.

Charitou, A., Louca, C., & Vafeas, N. (2007). Boards, ownership structure, and involuntary delisting from the New York Stock Exchange. *Journal of Accounting and Public Policy*, *26*(2), 249–262.

Charles, S. L., Glover, S. M., & Sharp, N. Y. (2010). The association between financial reporting risk and audit fees before and after the historic events surrounding SOX. *Auditing: A Journal of Practice & Theory*, *29*(1), 15–39.

Chen, K. C., & Church, B. K. (1992). Default on debt obligations and the issuance of going-concern opinions. *Auditing: A Journal of Practice & Theory*, *11*(2), 30.

Chen, A., Duong, H., & Ngo, A. (2019). Types of nonaudit service fees and earnings response coefficients in the post-Sarbanes-Oxley era. *Advances in Accounting*, *44*, 132–147.

Chen, C., Martin, X., & Wang, X. (2013). Insider trading, litigation concerns, and auditor going-concern opinions. *The Accounting Review*, *88*(2), 365–393.

Chen, C. J., Su, X., & Wu, X. (2007). Market competitiveness and Big 5 pricing: Evidence from China's binary market. *The International Journal of Accounting*, *42*(1), 1–24.

Chen, J., Dong, W., Han, H., & Zhou, N. (2020). Does audit partner workload compression affect audit quality? *European Accounting Review*, *29*(5), 1021–1053.

Chen, S., Sun, S. Y., & Wu, D. (2010). Client importance, institutional improvements, and audit quality in China: An office and individual auditor level analysis. *The Accounting Review*, *85*(1), 127–158.

Cheng & Warfield (2005).

Cheng, Q., Warfield, T., & Ye, M. (2011). Equity incentives and earnings management: evidence from the banking industry. *Journal of Accounting, Auditing & Finance*, *26*(2), 317–349.

Chi, W., Lisic, L. L., & Pevzner, M. (2011). Is enhanced audit quality associated with greater real earnings management? *Accounting Horizons*, *25*(2), 315–335.

Chi, W., Myers, L. A., Omer, T. C., & Xie, H. (2017). The effects of audit partner pre-client and client-specific experience on audit quality and on perceptions of audit quality. *Review of Accounting Studies*, *22*(1), 361–391.

Chin, C.-L., & Chi, H.-Y. (2009). Reducing restatements with increased industry expertise. *Contemporary Accounting Research*, *26*(3), 729–765. https://doi.org/10.1506/car.26.3.4

Cho, M., Ki, E., & Kwon, S. Y. (2017). The effects of accruals quality on audit hours and audit fees. *Journal of Accounting, Auditing & Finance*, *32*(3), 372–400. https://doi.org/10.1177/0148558X15611323

Choi, J. H., Kim, J. B., Liu, X., & Simunic, D. A. (2008). Audit pricing, legal liability regimes, and Big 4 premiums: Theory and cross-country evidence. *Contemporary Accounting Research*, *25*(1), 55–99.

Choi, J. H., & Wong, T. J. (2007). Auditors' governance functions and legal environments: An international investigation. *Contemporary Accounting Research, 24*(1), 13–46.

Choi, J.-H., Kim, C., Kim, J.-B., & Zang, Y. (2010). Audit office size, audit quality, and audit pricing. *Auditing: A Journal of Practice & Theory*, *29*(1), 73–97.

Choi, J.-H., Kim, J.-B., Qiu, A. A., & Zang, Y. (2012). Geographic proximity between auditor and client: How does it impact audit quality? *Auditing: A Journal of Practice & Theory, 31*(2), 43–72.

Choi, J.-H., Kim, J.-B., & Zang, Y. (2010). Do abnormally high audit fees impair audit quality? *Auditing: A Journal of Practice & Theory, 29*(2), 115–140. https://doi.org/10.2308/aud.2010.29.2.115

Choi, J. H., Kim, J. B., & Zang, Y. (2006). *The association between audit quality and abnormal audit fees.* SSRN 848067.

Chow, C. W. (1982). The demand for external auditing: Size, debt and ownership influences. *The Accounting Review, 57*(2), 272–291.

Chow, C. W., & Rice, S. J. (1982). Qualified audit opinions and auditor switching. *The Accounting Review, 57*(2), 326–335.

Christensen, B. E., Olson, A. J., & Omer, T. C. (2015). Auditor-provided tax services and earnings management through tax accounts. *Journal of the American Taxation Association*, *37*(1), 3–36.

Chu, L., Mathieu, R., & Mbagwu, C. (2013). Audit quality and banks' assessment of disclosed accounting information. *European Accounting Review, 22*(4), 719–738.

Chung, H., Sonu, C. H., Zang, Y., & Choi, J.-H. (2019). Opinion shopping to avoid a going concern audit opinion and subsequent audit quality. *Auditing: A Journal of Practice & Theory*, *38*(2), 101–123.

Chung, S., & Narasimhan, R. (2002). An international study of cross-sectional variations in audit fees. *International Journal of Auditing*, *6*(1), 79–91.

Chy, M., & Hope, O.-K. (2021). Real effects of auditor conservatism. *Review of Accounting Studies, 26*(2), 730–771.

Claessens, S., Djankov, S., Fan, J. P., & Lang, L. H. (2002). Disentangling the incentive and entrenchment effects of large shareholdings. *The Journal of Finance, 57*(6), 2741–2771.

Clifford, P., & Evans, R. (1997). Non-executive directors: A question of independence. *Corporate Governance: An International Review, 5*(4), 224–231.

Clinch, G., Stokes, D., & Zhu, T. (2012). Audit quality and information asymmetry between traders. *Accounting & Finance, 52*(3), 743–765. https://doi.org/10.1111/j.1467-629X.2011.00411.x

Cobbin, P. E. (2002). International dimensions of the audit fee determinants literature. *International Journal of Auditing*, *6*(1), 53–77.

Coffee, J. C., Jr. (2004). What caused Enron? A capsule social and economic history of the 1990s. *Cornell Law Review*, *89*(2), 269–309.

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes Oxley periods. *The Accounting Review*, *83*(3), 757–787.

Cohen, J. R., Krishnamoorthy, G., & Wright, A. (2004). The corporate governance mosaic and financial reporting quality. *Journal of Accounting Literature*, 87–152.

Colbert, G., & Murray, D. (1998). The association between auditor quality and auditor size: An analysis of small CPA firms. *Journal of Accounting, Auditing & Finance*, *13*(2), 135–150.

Colbert, J. L., & Jahera, J. S., Jr. (1988). The role of the audit and agency theory. *Journal of Applied Business Research (JABR)*, *4*(2), 7–12.

Collier, P., & Gregory, A. (1996). Audit committee effectiveness and the audit fee. *European Accounting Review*, *5*(2), 177–198. https://doi.org/10.1080/09638189600000012

Hribar, P., & Collins, D. W. (2002). Errors in estimating accruals: Implications for empirical research. *Journal of Accounting research*, *40*(1), 105–134.

Collins, D. W., & Kothari, S. (1989). An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. *Journal of Accounting and Economics*, *11*(2-3), 143–181.

Collins, D. W., Pungaliya, R. S., & Vijh, A. M. (2016). The effects of firm growth and model specification choices on tests of earnings management in quarterly settings. *The Accounting Review*, *92*(2), 69–100. https://doi.org/10.2308/accr-51551

Conyon, M. J., & Peck, S. I. (1998). Board control, remuneration committees, and top management compensation. *Academy of Management journal*, *41*(2), 146–157.

Co-ordinating Group on Auditing and Accounting Issues. (2003, January 29). *Final Report to the Secretary of State for Trade and Industry and the Chancellor of the Exchequer* (URN 03/567). UK Government Web Archive.https://webarchive.nationalarchives.gov.uk/ukgwa/20070603164510/http://www.dti.gov.uk/cld/cgaai-final.pdf

Copeland, T. E., Weston, J. F., & Shastri, K. (2005). *Financial theory and corporate policy* (Vol. 4). Boston: Pearson Addison Wesley.

Copley, P. A. (1991). The association between municipal disclosure practices and audit quality. *Journal of Accounting and Public Policy*, *10*(4), 245–266.

Coulton, J., Ruddock, C., & Taylor, S. L. (2007, February). *Audit fees, non-audit services and auditor-client economic bonding*. SSRN. https://doi.org/10.2139/ssrn.964792

Craswell, A. T. (1999). Does the provision of non-audit services impair auditor independence? *International Journal of Auditing*, *3*(1), 29–40. https://doi.org/10.1111/1099-1123.00047

Craswell, A. T., & Francis, J. R. (1999). Pricing initial audit engagements: A test of competing theories. *The Accounting Review*, *74*(2), 201–216.

Craswell, A. T., Francis, J. R., & Taylor, S. L. (1995). Auditor brand name reputations and industry specializations. *Journal of Accounting and Economics*, *20*(3), 297–322. https://doi.org/10.1016/0165-4101(95)00403-3

Craswell, A., Stokes, D. J., & Laughton, J. (2002). Auditor independence and fee dependence. *Journal of accounting and Economics*, *33*(2), 253–275.

Cullinan, C. (2004). Enron as a symptom of audit process breakdown: Can the Sarbanes-Oxley Act cure the disease? *Critical Perspectives on Accounting*, *15*(6-7), 853–864.

Curwen, P., & Else, P. (2006). *Principles of microeconomics*. Routledge.

Dao, M., Raghunandan, K., & Rama, D. V. (2012). Shareholder voting on auditor selection, audit fees, and audit quality. *The Accounting Review*, *87*(1), 149–171. https://doi.org/10.2308/accr-10159

Dao, M., Xu, H., & Liu, L. (2019). Impact of the disclosure of audit engagement partners on audit quality: Evidence from the USA. *International Journal of Auditing*, *23*(1), 112–124.

Das, S., Levine, C. B., & Sivaramakrishnan, K. (1998). Earnings predictability and bias in analysts' earnings forecasts. *The Accounting Review*, *73*(2), 277–294.

Datta, S., Iskandar-Datta, M., & Singh, V. (2013). Product market power, industry structure, and corporate earnings management. *Journal of Banking & Finance*, *37*(8), 3273–3285.

Daugherty, B. E., Dickins, D., Hatfield, R. C., & Higgs, J. L. (2012). An examination of partner perceptions of partner rotation: Direct and indirect consequences to audit quality. *Auditing: A Journal of Practice & Theory*, *31*(1), 97–114.

Davidson, R., Goodwin-Stewart, J., & Kent, P. (2005). Internal governance structures and earnings management. *Accounting & Finance*, *45*(2), 241–267.

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, *22*(1), 20–47.

Davis, L. R., & Ricchiute, D. N. (1993). Audit effort, audit fees, and the provision of nonaudit services to audit clients. *The Accounting Review*, *68*(1), 135–150.

De Simone, L., Ege, M. S., & Stomberg, B. (2015). Internal control quality: The role of auditor-provided tax services. *The Accounting Review*, *90*(4), 1469–1496.

DeAngelo, L. E. (1981a). Auditor independence, "low balling", and disclosure regulation. *Journal of Accounting & Economics*, *3*(2), 113–127. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=6011204&site=ehost-live

DeAngelo, L. E. (1981b). Auditor size and audit quality. *Journal of Accounting and Economics*, *3*(3), 183–199. https://doi.org/10.1016/0165-4101(81)90002-1

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.

DeAngelo, H., DeAngelo, L., & Skinner, D. J. (1994). Accounting choice in troubled companies. *Journal of Accounting and Economics*, *17*(1-2), 113–143.

Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting & Economics*, *50*(2/3), 344–401. https://doi.org/10.1016/j.jacceco.2010.09.001

Dechow, P. M. (1994). Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics*, *18*(1), 3–42.

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, *77*(1), 35–59.

Dechow, P. M., Kothari, S. P., & L. Watts, R. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, *25*(2), 133–168. https://doi.org/10.1016/S0165-4101(98)00020-2

Dechow, P. M., & Skinner, D. J. (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, *14*(2), 235–250.

Dechow, P. M., & Sloan, R. G. (1995). Detecting earnings management. *The Accounting Review*, *70*(2), 193–225.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*, *13*(1), 1–36.

Dee, C. C., Lulseged, A. A., & Nowlin, T. S. (2002). *Earnings quality and auditor independence: an examination using non-audit fee data*. SSRN 304185.

DeFond, M., & Zhang, J. (2014). A review of archival auditing research. *Journal of Accounting and Economics*, *58*(2-3), 275–326. https://doi.org/10.1016/j.jacceco.2014.09.002

DeFond, M. L. (1992). The association between changes in client firm agency costs and auditor switching. *Auditing: A Journal of Practice & Theory*, *11*(1), 16.

DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting & Economics*, *17*(1/2), 145–176.

DeFond, M. L., & Lennox, C. S. (2011). The effect of SOX on small auditor exits and audit quality. *Journal of Accounting and Economics*, *52*(1), 21–40.

DeFond, M. L., & Park, C. W. (2001). The reversal of abnormal accruals and the market valuation of earnings surprises. *The accounting review*, *76*(3), 375–404.

DeFond, M. L., Raghunandan, K., & Subramanyam, K. R. (2002). Do non-audit service fees impair auditor independence? Evidence from going concern audit opinions. *Journal of Accounting Research*, *40*(4), 1247–1274. https://doi.org/10.1111/1475-679X.00088

Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *The Journal of Business*, *72*(1), 1–33. https://doi.org/10.1086/209601

Deis, D. R., Jr., & Giroux, G. A. (1996). The effect of auditor changes on audit fees, audit hours, and audit quality. *Journal of Accounting and Public Policy*, *15*(1), 55–76.

Deis, D. R., Jr., & Giroux, G. A. (1992). Determinants of audit quality in the public sector. *The Accounting Review*, *67*(3), 462–479.

Demski, J. S., & Swieringa, R. J. (1974). A cooperative formulation of the audit choice problem. *The Accounting Review*, *49*(3), 506–513. https://www.jstor.org/stable/i302465

Dietrich, J. R. (1984). Discussion of methodological issues related to the estimation of financial distress prediction models. *Journal of Accounting Research*, *22*, 83–86.

Deutsch, R., Imbesi, T., & Gatt, J. (2018). *Aspire with assurance: Transparency report 2018*. https://www2.deloitte.com/content/dam/Deloitte/au/Documents/audit/au-audit-transparency-report-2018.pdf

Dichev, I. D., Graham, J. R., Harvey, C. R., & Rajgopal, S. (2013). Earnings quality: Evidence from the field. *Journal of Accounting and Economics*, *56*(2-3), 1–33.

Dimitropoulos, P. E., & Asteriou, D. (2010). The effect of board composition on the informativeness and quality of annual earnings: Empirical evidence from Greece. *Research in International Business and Finance*, *24*(2), 190–205.

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management*, *16*(1), 49–64.

Dongen, P. v. (2015). *PwC Australia: Transparency report*. https://www.pwc.com.au/assurance/transparency-report/transparency-report-australia-sep15.pdf

Dopuch, N., Holthausen, R. W., & Leftwich, R. W. (1987). Predicting audit qualifications with financial and market variables. *The Accounting Review*, *62*(3), 431–454.

Dopuch, N., King, R. R., & Schwartz, R. (2003). Independence in appearance and in fact: An experimental investigation. *Contemporary Accounting Research*, *20*(1), 79–114.

Dopuch, N., & Simunic, D. (1982, June). Competition in auditing: An assessment. In *Fourth Symposium on auditing research* (Vol. 401, p. 405). Urbana, IL: University of Illinois.

Dunn, J., Hillier, D., & Marshall, A. P. (1999). The market reaction to auditor resignations. *Accounting and Business Research*, *29*(2), 95–108.

Dunn, K., & Mayhew, B. (2004). Audit firm industry specialization and client disclosure quality. *Review of Accounting Studies*, *9*(1), 35–58. https://doi.org/10.1023/B:RAST.0000013628.49401.69

Dunn, K. A., Tan, C. E., & Venuti, E. K. (2002). Audit firm characteristics and type II errors in the going concern opinion. *Asia-Pacific Journal of Accounting & Economics*, *9*(1), 39–69.

Dye, R. A. (1993). Auditing standards, legal liability, and auditor wealth. *Journal of political Economy*, *101*(5), 887–914.

Dyreng, S. D., Hillegeist, S. A., & Penalva, F. (2020). Earnings management to avoid debt covenant violations and future performance. *The European Accounting Review*, *6*(1), 1–33.

Efendi, J., Srivastava, A., & Swanson, E. P. (2007). Why do corporate managers misstate financial statements? The role of option compensation and other factors. *Journal of Financial Economics*, *85*(3), 667–708.

Eilifsen, A., & Knivsflå, K. (2016). The role of audit firm size, non-audit services, and knowledge spillovers in mitigating earnings management during large equity issues. *International Journal of Auditing*, *20*(3), 239–254. https://doi.org/10.1111/ijau.12073

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, *14*(1), 57–74.

Elayan, F. A., Li, J., & Meyer, T. O. (2008). Accounting irregularities, management compensation structure and information asymmetry. *Accounting & Finance*, *48*(5), 741–760.

Elder, R. J., & Zhou, J. (2002). Audit firm size, industry specialization and earnings management by initial public offering firms. *Industry Specialization and Earnings Management by Initial Public Offering Firms (July 2002)*.

Elliott, J. A., & Shaw, W. H. (1988). Write-offs as accounting procedures to manage perceptions. *Journal of Accounting Research*, *26*(2), 91–119.

Erickson, M., Hanlon, M., & Maydew, E. L. (2004). How much will firms pay for earnings that do not exist? Evidence of taxes paid on allegedly fraudulent earnings. *The Accounting Review*, *79*(2), 387–408.

Erickson, M., & S. Wang. (1999). Earnings management by acquiring firms in stock for stock mergers. *Journal of Accounting and Economics*, *27*(2), 149–176.

Etemadi, H., & Abdoli, L. (2018). Audit quality and financial statement fraud. *Journal of Financial Accounting Knowledge*, *4*(4), 23–43.

Ettredge, M., Heintz, J., Li, C., & Scholz, S. (2011). Auditor realignments accompanying implementation of SOX 404 ICFR reporting requirements. *Accounting Horizons*, *25*(1), 17–39.

European Commission. (2002). *Commission Recommendation of 16 May 2002 — Statutory Auditors' Independence in the EU: A Set of Fundamental Principles (Text with EEA relevance) (notified under document number C(2002) 1873)*. http://data.europa.eu/eli/reco/2002/590/oj

Ezzamel, M., Gwilliam, D. R., & Holland, K. (1996). Some empirical evidence from publicly quoted UK companies on the relationship between the pricing of audit and non-audit services. *Accounting and Business Research*, *27*(1), 3–16.

Ezzamel, M., Gwilliam, D. R., & Holland, K. M. (2002). The relationship between categories of non-audit services and audit fees: Evidence from UK companies. *International Journal of Auditing*, *6*(1), 13–35. https://doi.org/10.1111/j.1099-1123.2002.tb00003.x

Fama, E. F., & Jensen, M. C. (1983a). Agency problems and residual claims. *The Journal of Law and Economics*, *26*(2), 327–349.

Fama, E. F., & Jensen, M. C. (1983b). Separation of ownership and control. *The Journal of Law and Economics*, *26*(2), 301–325.

Fan, J. P., & Wong, T. J. (2005). Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia. *Journal of Accounting Research*, *43*(1), 35–72.

Farber, D. B. (2005). Restoring trust after fraud: Does corporate governance matter? *The accounting review*, *80*(2), 539–561.

Fargher, N. L., & Liwei, J. (2008). Changes in the audit environment and auditors' propensity to issue going-concern opinions. *Auditing: A Journal of Practice & Theory*, *27*(2), 55–77.

Farmer, T. A., Rittenberg, L. E., & Trompeter, G. M. (1987). An Investigation of the impact of economic and organizational-factors on auditor independence. *Auditing-a Journal of Practice & Theory*, *7*(1), 1–14.

Fearnley, S., & Beattie, V. (2004). The reform of the UK's auditor independence framework after the Enron collapse: An example of evidence-based policy making. *International Journal of Auditing*, *8*(2), 117–138.

Fearnley, S., Beattie, V., & Brandt, R. (2005). Auditor independence and audit risk: A reconceptualisation. *Journal of International Accounting Research*, *4*(1), 39–71.

Feldmann, D. A., & Read, W. J. (2010). Auditor conservatism after Enron. *Auditing: A Journal of Practice & Theory*, *29*(1), 267–278.

Felix, Jr, W. L., Gramling, A. A., & Maletta, M. J. (2001). The contribution of internal audit as a determinant of external audit fees and factors influencing this contribution. *Journal of Accounting Research*, *39*(3), 513–534.

Ferguson, M. J., Seow, G. S., & Young, D. (2004). Nonaudit services and earnings management: UK evidence. *Contemporary Accounting Research*, *21*(4), 813–841.

Fernando, C. S., May, A. D., & Megginson, W. L. (2012). The value of investment banking relationships: Evidence from the collapse of Lehman Brothers. *The Journal of Finance*, *67*(1), 235–270.

Firth, M. (1978). Qualified audit reports: their impact on investment decisions. *The Accounting Review*, *53*(3), 642–650.

Firth, M. (1985). An analysis of audit fees and their determinants in New-Zealand. *Auditing: A Journal of Practice & Theory*, *4*(2), 23–37.

Firth, M. (1990). Auditor reputation: The impact of critical reports issued by government inspectors. *The Rand Journal of Economics*, *21*(3), 374–387.

Firth, M. (1997). The provision of nonaudit services by accounting firms to their audit clients. *Contemporary Accounting Research*, *14*(2), 1–21. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=9710215713&site=ehost-live

Firth, M. (2002). Auditor-provided consultancy services and their associations with audit fees and audit opinions. *Journal of Business Finance & Accounting*, *29*(5-6), 661–693. https://doi.org/10.1111/1468-5957.00446

Rui, O. M., Firth, M., & Fung, P. M. (2002). Simultaneous relationships among ownership, corporate governance, and financial performance. *Corporate Governance, and Financial Performance (June 2002)*.

Firth, M., & Smith, A. (1992). Selection of auditor firms by companies in the new issue market. *Applied Economics*, *24*(2), 247–255.

Fischer, P., & H. Louis. (2008). financial reporting and conflicting managerial incentives: The case of management buyouts. *Management Science 54*(10), 1700–1714.

Fleak, S. K., & Wilson, E. R. (1994). The incremental information content of the going-concern audit opinion. *Journal of Accounting, Auditing & Finance*, *9*(1), 149–166.

Fong, A. (2006). Earnings management in corporate accounting: An overview. *Cross-sections*, *2*, 81–95.

Foster, B. P., & Shastri, T. (2016). Determinants of going concern opinions and audit fees for development stage enterprises. *Advances in Accounting*, *33*, 68–84.

Francis, J., & Schipper, K. (1999). Have financial statements lost their relevance? *Journal of Accounting Research*, *37*(2), 319–352.

Francis, J. R. (1984). The effect of audit firm size on audit prices: A study of the Australian market. *Journal of Accounting and Economics*, *6*(2), 133–151.

Francis, J. R., & Ke, B. (2006). Disclosure of fees paid to auditors and the market valuation of earnings surprises. *Review of Accounting Studies*, *11*(4), 495–523.

Francis, J. R., Maydew, E. L., & Sparks, H. C. (1999). The role of Big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice & Theory*, *18*(2), 17. https://doi.org/10.2308/aud.1999.18.2.17

Francis, J. R., & Simon, D. T. (1987). A test of audit pricing in the small-client segment of the US audit market. *The Accounting Review*, *62*(1), 145–157.

Francis, J. R., & Stokes, D. J. (1986). Audit prices, product differentiation, and scale economies: Further evidence from the Australian market. *Journal of Accounting Research*, *24*(2), 383–393.

Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of accounting and economics*, *39*(2), 295–327.

Francis, J. R., & Yu, M. D. (2009). Big 4 office size and audit quality. *Accounting Review*, *84*(5), 1521–1552.

Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002). The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review*, *77*(s-1), 71–105. https://doi.org/10.2308/accr.2002.77.s-1.71

Fried, D., & Schiff, A. (1981). CPA switches and associated market reactions. *The Accounting Review*, *56*(2), 326–341.

Friedlan, J. (1994). Accounting choices of issuers of initial public offerings. *Contemporary Accounting Research, 11*(1), 1–32.

Garcia-Blandon, J., & Argiles, J. M. (2015). Audit firm tenure and independence: A comprehensive investigation of audit qualifications in Spain. *Journal of International Accounting, Auditing and Taxation*, *24*, 82–93.

Garcia-Blandon, J., Argiles-Bosch, J. M., Castillo-Merino, D., & Martinez-Blasco, M. (2017). An assessment of the provisions of regulation (EU) No 537/2014 on non-audit services and audit firm tenure: Evidence from Spain. *The International Journal of Accounting*, *52*(3), 251–261. https://doi.org/10.1016/j.intacc.2017.07.003

Gaver, J. J., Gaver, K. M., & Austin, J. R. (1995). Additional evidence on bonus plans and income management. *Journal of Accounting and Economics*, *19*(1), 3–28.

Gaver, J. J., & Utke, S. (2019). Audit quality and specialist tenure. *The Accounting Review*, *94*(3), 113–147.

Gavious, I. (2007). Alternative perspectives to deal with auditors' agency problem. *Critical perspectives on Accounting*, *18*(4), 451-467.

Gay, G., & Simnett, R. (2012). *Auditing and assurance services in Australia*. McGraw-Hill Education Australia.

Gaynor, L. M., Kelton, A. S., Mercer, M., & Yohn, T. L. (2016). Understanding the relation between financial reporting quality and audit quality. *Auditing: A Journal of Practice & Theory*, *35*(4), 1–22. https://doi.org/10.2308/ajpt-51453

Geiger, M., Raghunandan, K., & Rama, D. (1998). Costs associated with going-concern modified audit opinions: An analysis of auditor changes, subsequent opinions, and client failures. *Advances in Accounting*, *16*(1), 117–139.

Geiger, M. A., Gold, A., & Wallage, P. (2021). *Auditor going concern reporting: A review of global research and future research opportunities*. Routledge.

Geiger, M. A., & Raghunandan, K. (2002). Auditor tenure and audit reporting failures. *Auditing: A Journal of Practice & Theory*, *21*(1), 67–78.

Geiger, M. A., Raghunandan, K., & Rama, D. V. (2005). Recent changes in the association between bankruptcies and prior audit opinions. *Auditing: A Journal of Practice & Theory*, *24*(1), 21–35. https://doi.org/10.2308/aud.2005.24.1.21

Geiger, M. A., & Rama, D. V. (2003). Audit fees, nonaudit fees, and auditor reporting on stressed companies. *Auditing: A Journal of Practice & Theory*, *22*(2), 53–69. https://doi.org/10.2308/aud.2003.22.2.53

Geiger, M. A., & Rama, D. V. (2006). Audit firm size and going-concern reporting accuracy. *Accounting Horizons, 20*(1), 1–17.

Ghosh, A., & Moon, D. (2005). Auditor tenure and perceptions of audit quality. *The Accounting Review, 80*(2), 585–612.

Gist, W. E. (1992). Explaining variability in external audit fees. *Accounting and Business Research, 23*(89), 79–84.

Givoly, D., & Hayn, C. (2000). The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? *Journal of Accounting and Economics, 29*(3), 287–320.

Givoly, D., Hayn, C. K., & Natarajan, A. (2007). Measuring reporting conservatism. *The Accounting Review, 82*(1), 65–106.

Gleason, C. A., & Mills, L. F. (2011). Do auditor-provided tax services improve the estimate of tax reserves? *Contemporary Accounting Research, 28*(5), 1484–1509. https://doi.org/10.1111/j.1911-3846.2010.01057.x

Glezen, G. W., & Millar, J. A. (1985). An empirical investigation of stockholder reaction to disclosures required by ASR No. 250. *Journal of Accounting Research, 23*(2), 859–870.

Gold, A., Hunton, J. E., & Gomaa, M. I. (2015). Retraction: The Impact of Client and Auditor Gender on Auditors' Judgments. *Accounting Horizons, 29*(3), 743–743.

Gong, G., H. Louis, & A. Sun. (2008). Earnings management, lawsuits, and stock-for-stock acquirers' market performance. *Journal of Accounting and Economics, 46* (1), 62–77.

Goodwin, J., & Wu, D. (2014). Is the effect of industry expertise on audit pricing an office-level or a partner-level phenomenon? *Review of Accounting Studies, 19*(4), 1532–1578.

Gopalan, R., & Jayaraman, S. (2012). Private control benefits and earnings management: Evidence from insider controlled firms. *Journal of Accounting Research, 50*(1), 117–157. https://doi.org/10.1111/j.1475-679X.2011.00431.x

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of accounting and economics, 40*(1–3), 3–73.

Graham, M. (2016). *PwC Australia: Transparency report*. https://www.pwc.com.au/assurance/transparency-report/transparency-report-au-fy16-oct16.pdf

Graham, M. (2018). *PwC Australia: Transparency report*. https://www.pwc.com.au/assurance/transparency-report/pwc-australia-transparency-report-2018.pdf

Gramling, A. A., Jenkins, J. G., & Taylor, M. H. (2010). Policy and research implications of evolving independence rules for public company auditors. *Accounting Horizons*, *24*(4), 547–566.

Greene, W. H. (2007). *Econometric analysis* (6th ed.). Prentice Hall.

Gregory, A., & Collier, P. (1996). Audit fees and auditor change: An investigation of the persistence of fee reduction by type of change. *Journal of Business Finance & Accounting*, *23*(1), 13–28.

Griffin, P. A., Lont, D. H., & Sun, Y. (2010). Agency problems and audit fees: further tests of the free cash flow hypothesis. *Accounting & Finance*, *50*(2), 321–350.

Gul, F. A., Jaggi, B. L., & Krishnan, G. V. (2007). Auditor independence: Evidence on the joint effects of auditor tenure and nonaudit fees. *Auditing: A Journal of Practice & Theory*, *26*(2), 117–142. https://search.proquest.com/docview/216741373?accountid=10382

Gul, F. A., Lynn, S. G., & Tsui, J. S. (2002). Audit quality, management ownership, and the informativeness of accounting earnings. *Journal of Accounting, Auditing & Finance*, *17*(1), 25–49.

Habib, A. (2012). Non-audit service fees and financial reporting quality: A meta-analysis. *Abacus*, *48*(2), 214–248. https://doi.org/10.1111/j.1467-6281.2012.00363.x

Habib, A. (2013). A meta-analysis of the determinants of modified audit opinion decisions. *Managerial Auditing Journal*.

Hackenbrack, K., & Knechel, W. R. (1997). Resource allocation decisions in audit engagements. *Contemporary Accounting Research*, *14*(3), 481–499.

Hackenbrack, K. E., & Hogan, C. E. (2002). Market response to earnings surprises conditional on reasons for an auditor change. *Contemporary Accounting Research*, *19*(2), 195–223.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis* (Vol. 5). Prentice Hall.

Hall, S. C., Agrawal, V., & Agrawal, P. (2013). Earnings management and the financial statement analyst. *Accounting and Finance Research*, *2*(2), 105–111.

Hall, S. C., & Stammerjohan, W. W. (1997). Damage awards and earnings management in the oil industry. *The Accounting Review*, *72*(1), 47–65.

Halperin, R., & Lai, K.-W. (2014). The relation between auditor-provided tax service fees and audit fees after the Sarbanes–Oxley act. *Journal of Accounting, Auditing & Finance*, *30*(3), 341–372. https://doi.org/10.1177/0148558x14560900

Hamilton, J., Ruddock, C., Stokes, D. J., & Taylor, S. L. (2005). Audit partner rotation, earnings quality and earnings conservatism. *Earnings Quality and Earnings Conservatism (June 9, 2005)*.

Han, J. C., & Wang, S. W. (1998). Political costs and earnings management of oil companies during the 1990 Persian Gulf crisis. *The Accounting Review*, *73*(1), 103–117.

Harakeh, M., El-Gammal, W., & Matar, G. (2019). Female directors, earnings management, and CEO incentive compensation: UK evidence. *Research in International Business and Finance, 50*, 153–170. https://doi.org/10.1016/j.ribaf.2019.05.001

Hardies, K., Breesch, D., & Branson, J. (2015). The female audit fee premium. *Auditing: A Journal of Practice & Theory*, 34(4), 171–195.

Hardies, K., Vandenhaute, M.-L., & Breesch, D. (2018). An analysis of auditors' going-concern reporting accuracy in private firms. *Accounting Horizons*, *32*(4), 117–132.

Harris, K., Omer, T. C., & Wong, P. A. (2015). Going, going, still here? Determinants and reactions to consecutive going concern opinions. *Determinants and Reactions to Consecutive Going Concern Opinions (October 9, 2015)*.

Hastuti, C. S. F., Arfan, M., & Diantimala, Y. (2018). The influence of free cash flow and operating cash flow on earnings management at manufacturing firms listed in the Indonesian stock exchange. *International Journal of Academic Research in Business & Social Sciences*, *8*(9), 1133–1146.

Hay, D., & Knechel, W. R. (2010). The effects of advertising and solicitation on audit fees. *Journal of Accounting and Public Policy*, *29*(1), 60–81. https://doi.org/10.1016/j.jaccpubpol.2009.10.001

Hay, D. C., Knechel, W. R., & Wong, N. (2006). Audit fees: A meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research*, *23*(1), 141–191.

Hayes, C. (2002). The Ramsay report and the regulation of auditor independence in Australia. *Australian Accounting Review*, *12*(27), 3–11. https://doi.org/10.1111/j.1835-2561.2002.tb00198.x

Hayn, C. (1995). The information content of losses. *Journal of Accounting and Economics*, *20*(2), 125–153. https://doi.org/10.1016/0165-4101(95)00397-2

Healy, P. M., & Palepu, K. G. (2003). The fall of Enron. *Journal of Economic Perspectives*, *17*(2), 3–26.

Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, *13*(4), 365–383.

Herath, S. K., & Albarqi, N. (2017). Financial reporting quality: A literature review. *International Journal of Business Management and Commerce*, *2*(2), 1–14.

Herrmann, D., & Inoue, T. (1996). Income smoothing and incentives by operating condition: an empirical test using depreciation changes in Japan. *Journal of International Accounting, Auditing and Taxation*, *5*(2), 161-177.

Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). The motivation to work (2nd ed.). New York, NY: Wiley & Sons, Inc.

Hillison, W., & Kennelley, M. (1988). The economics of nonaudit services. *Accounting Horizons*, *2*(3), 32–40.

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, *28*(3), 383-396.

Hoitash, R., Markelevich, A., & Barragato, C. A. (2007). Auditor fees and audit quality. *Managerial Auditing Journal*, 22(8), 761–786.

Hoitash, R., Hoitash, U., & Bedard, J. C. (2008). Internal control quality and audit pricing under the Sarbanes-Oxley Act. *Auditing: A Journal of Practice & Theory*, *27*(1), 105–126.

Holland, K., & Jackson, R. H. (2004). Earnings management and deferred tax. *Accounting and Business Research*, *34*(2), 101–123.

Holland, D., & Ramsay, A. (2003). Do Australian companies manage earnings to meet simple earnings benchmarks?. *Accounting & Finance*, *43*(1), 41–62.

Hook, C., & Deutsch, R. (2017). *Transforming audit: Transparency report 2017*. file:///C:/Users/19379919/Desktop/My%20thesis%203/Transparency%20reports%20Australia%20BIG4/Deloitte/deloitte-au-audit-transparency-report-2017-091018.pdf

Hoopes, J. L., Merkley, K. J., Pacelli, J., & Schroeder, J. H. (2018). Audit personnel salaries and audit quality. *Review of Accounting Studies*, *23*(3), 1096–1136. https://doi.org/10.1007/s11142-018-9458-y

Hope, O. K., & Langli, J. C. (2010). Auditor independence in a private firm and low litigation risk setting. *The Accounting Review*, *85*(2), 573–605.

Hossain, M., Raghunandan, K., & Rama, D. V. (2020). Abnormal disclosure tone and going concern modified audit reports. *Journal of Accounting and Public Policy*, *39*(4), 106764.

Hossain, S. (2013). Effect of regulatory changes on auditor independence and audit quality. *International Journal of Auditing*, *17*(3), 246–264. https://doi.org/10.1111/ijau.12002

Hossain, S., Monroe, G. S., Wilson, M., & Jubb, C. (2016). The effect of networked clients' economic importance on audit quality. *Auditing: A Journal of Practice & Theory*, *35*(4), 79–103.

Houston, R. W., Peters, M. F., & Pratt, J. H. (2005). Nonlitigation risk and pricing audit services. *Auditing: A Journal of Practice & Theory*, *24*(1), 37–53.

Hribar, P., & Collins, D. W. (2002). Errors in estimating accruals: Implications for empirical research. *Journal of Accounting Research*, *40*(1), 105–134.

Hribar, P., & Nichols, C. (2007). *Does conservative stock option accounting lead to aggressive cash flow reporting?* SSRN 996102.

Huang, H. W., Mishra, S., & Raghunandan, K. (2007). Types of nonaudit fees and financial reporting quality. *Auditing: A Journal of Practice & Theory*, *26*(1), 133–145. https://doi.org/10.2308/aud.2007.26.1.133

Huang, H. W., Raghunandan, K., & Rama, D. (2009). Audit fees for initial audit engagements before and after SOX. *Auditing: A Journal of Practice & Theory*, *28*(1), 171–190. https://doi.org/10.2308/aud.2009.28.1.171

Huang, P., Louwers, T., Moffitt, J., & Zhang, Y. (2008). Ethical management, corporate governance, and abnormal accruals. *Journal of Business Ethics*, *83*(3), 469–487. https://doi.org/10.1007/s10551-007-9632-9

Hussin, W. N. W., Bamahros, H. M., & Shukeri, S. N. (2018). Lead engagement partner workload, partner-client tenure and audit reporting lag: Evidence from Malaysia. *Managerial Auditing Journal*, *33*(3), 246–266.

Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. Sage.

Hutchinson, M. R., Percy, M., & Erkurtoglu, L. (2008). An investigation of the association between corporate governance, earnings management and the effect of governance reforms. *Accounting Research Journal,* 21(3), 239–262.

Hylton, D. P. (1964). Are consulting and auditing compatible? A contrary view. *The Accounting Review*, *39*(3), 667–670.

Imhoff Jr, E. A. (1978). The representativeness of management earnings forecasts. *The Accounting Review*, *53*(4), 836–850.

Institute of Chartered Accountants in England and Wales. (2020, January). *ICAEW Code of Ethics from 1 January 2020*. https://www.icaew.com/technical/ethics/icaew-code-of-ethics/icaew-code-of-ethics

International Auditing and Assurance Standards Board. (2014, February). *A framework for audit quality: Key elements that create an environment for audit quality*. https://www.iaasb.org/publications/framework-audit-quality-key-elements-create-environment-audit-quality-3

International Federation of Accountants. (2006, July). *Code of ethics for professional accountants*. https://www.ifac.org/system/files/publications/files/ifac-code-of-ethics-for.pdf

International Forum of Independent Audit Regulators. (2020). *Annual report*.

Iyer, V. M., & Iyer, G. S. (1996). Effect of Big 8 mergers on audit fees: Evidence from the United Kingdom. *Auditing: A Journal of Practice & Theory, 15*(2), 123.

Iyer, G. S., Iyer, V. M., & Mishra, B. K. (2003). The impact of non-audit service fee disclosure requirements on audit fee and non-audit service fee in the United Kingdom: An empirical analysis. *Advances in Accounting, 20*, 127–140. https://doi.org/10.1016/S0882-6110(03)20006-7

Jaggi, B., Gul, F. A., & Lau, T. S. C. (2012). Auditor industry specialization, political economy and earnings quality: Some cross-country evidence. *Journal of International Financial Management & Accounting, 23*(1), 23–61.

Jaggi, B., Leung, S., & Gul, F. (2009). Family control, board independence and earnings management: Evidence based on Hong Kong firms. *Journal of Accounting and Public Policy, 28*(4), 281–300.

Jalil, A. A., & Rahman, R. A. (2010). Institutional investors and earnings management: Malaysian evidence. *Journal of Financial Reporting and Accounting, 8*(2), 110–127.

James, L. R., & Singh, B. K. (1978). An introduction to the logic, assumptions, and basic analytic procedures of two-stage least squares. *Psychological Bulletin, 85*(5), 1104.

Jenkins, D. S., Kane, G. D., & Velury, U. (2006). Earnings quality decline and the effect of industry specialist auditors: An analysis of the late 1990s. *Journal of Accounting and Public Policy, 25*(1), 71–90.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review, 76*(2), 323–329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Jha, A. (2013). Earnings management around debt-covenant violations–An empirical investigation using a large sample of quarterly data. *Journal of Accounting, Auditing & Finance, 28*(4), 369–396.

Jiang, J. X., Petroni, K. R., & Wang, I. Y. (2010). CFOs and CEOs: Who have the most influence on earnings management? *Journal of Financial Economics, 96*(3), 513–526.

Johnson, E. N., Walker, K. B., & Westergaard, E. (1995). Supplier concentration and pricing of audit services in New Zealand. *Auditing: A Journal of Practice & Theory*, *14*(2), 74.

Johnstone, K. M., & Bedard, J. C. (2001). Engagement planning, bid pricing, and client response in the market for initial attest engagements. *The Accounting Review*, *76*(2), 199–220.

Johnstone, K. M., Li, C., & Luo, S. (2014). Client-auditor supply chain relationships, audit quality, and audit pricing. *Auditing: A Journal of Practice & Theory*, *33*(4), 119–166.

Johnstone, K. M., Warfield, T. D., & Sutton, M. H. (2001). Antecedents and consequences of independence risk: Framework for analysis. *Accounting Horizons*, *15*(1), 1–18.

Jones, F. L. (1996). The information content of the auditor's going concern evaluation. *Journal of Accounting and Public Policy*, *15*(1), 1–27.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, *29*(2), 193–228.

Jones, K. (2015). *The value of a quality audit: Transparency report 2015* https://www2.deloitte.com/content/dam/Deloitte/au/Documents/audit/deloitte-au-audit-transparency-report-2015-180915.pdf

Kao, J. L., Li, Y., & Zhang, W. (2014). Did SOX influence the association between fee dependence and auditors' propensity to issue going-concern opinions? *Auditing: A Journal of Practice & Theory*, *33*(2), 165–185.

Kao, L., & Chen, A. (2004). The effects of board characteristics on earnings management. *Corporate Ownership & Control*, *1*(3), 96–107.

Kaplan, R. L. (2003). The mother of all conflicts: Auditors and their clients. *Journal of Corporation Law*, *29*, 363.

Kausar, A., & Lennox, C. (2011). Going concern opinions and asset values. In *Nanyang Technological University Working paper*.

Kent, P., Routledge, J., & Stewart, J. (2010). Innate and discretionary accruals quality and corporate governance. *Accounting & Finance*, *50*(1), 171–195.

Kershaw, D. (2006). Waiting for Enron: The unstable equilibrium of auditor independence regulation. *Journal of Law and Society*, *33*(3), 388–420.

Key, K. G. (1997). Political cost incentives for earnings management in the cable television industry. *Journal of Accounting and Economics*, *23*(3), 309–337.

Kida, T. (1980). An investigation into auditors' continuity and related qualification judgments. *Journal of Accounting Research*, *18*(2), 506–523.

Kim, M. (2021). Effects of managerial overconfidence and ability on going-concern decisions and auditor turnover. *Advances in Accounting*, *54*, 100549. https://doi.org/10.1016/j.adiac.2021.100549

Kinney Jr, W. R., & McDaniel, L. S. (1989). Characteristics of firms correcting previously reported quarterly earnings. *Journal of Accounting and Economics*, *11*(1), 71–93.

Kinney, W. R., Palmrose, Z.-V., & Scholz, S. (2004). Auditor independence, non-audit services, and restatements: Was the U.S. Government right? *Journal of Accounting Research*, *42*(3), 561–588. www.jstor.org/stable/3542422

Klein, A. (1998). Firm performance and board committee structure. *The Journal of Law and Economics*, *41*(1), 275–304.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, *33*(3), 375–400. https://doi.org/10.1016/S0165-4101(02)00059-9

Klock, M. (1994). The stock market reaction to a change in certifying accountant. *Journal of Accounting, Auditing & Finance*, *9*(2), 339–347.

Knechel, W. R. (2016). Audit quality and regulation. *International Journal of Auditing: A Journal of Practice & Theory*, *20*(3), 215–223. https://doi.org/10.1111/ijau.12077

Knechel, W. R., Krishnan, G. V., Pevzner, M., Shefchik, L. B., & Velury, U. K. (2013). Audit quality: Insights from the academic literature. *Auditing: A Journal of Practice & Theory*, *32*, 385–421. https://doi.org/10.2308/ajpt-50350

Knechel, W. R., & Payne, J. L. (2001). Additional evidence on audit report lag. *Auditing: A Journal of Practice & Theory*, *20*(1), 137–146.

Knechel, W. R., & Sharma, D. S. (2012). Auditor-provided nonaudit services and audit effectiveness and efficiency: Evidence from pre- and post-SOX audit report lags. *Auditing: A Journal of Practice & Theory*, *31*(4), 85–114. https://doi.org/10.2308/ajpt-10298

Knechel, W. R., Sharma, D. S., & Sharma, V. D. (2012). Non-audit services and knowledge spillovers: Evidence from New Zealand. *Journal of Business Finance & Accounting*, *39*(1/2), 60–81. https://doi.org/10.1111/j.1468-5957.2011.02268.x

Knechel, W. R., & Vanstraelen, A. (2007). The relationship between auditor tenure and audit quality implied by going concern opinions. *Auditing: A Journal of Practice & Theory*, *26*(1), 113–131.

Knechel, W. R., Wallage, P., Eilifsen, A., & Van Praag, B. (2006). The demand attributes of assurance services providers and the role of independent accountants. *International Journal of Auditing*, *10*(2), 143–162. https://doi.org/10.1111/j.1099-1123.2006.00347.x

Koh, H. C. (1991). Model predictions and auditor assessments of going concern status. *Accounting and Business Research, 21*(84), 331–338.

Koh, H. C., & Killough, L. N. (1990). The use of multiple discriminant analysis in the assessment of the going-concern status of an audit client. *Journal of Business Finance & Accounting*, *17*(2), 179–192.

Koh, K., Rajgopal, S., & Srinivasan, S. (2013). Non-audit services and financial reporting quality: Evidence from 1978 to 1980. *Review of Accounting Studies*, *18*(1), 1–33. https://doi.org/10.1007/s11142-012-9187-6

Koh, P.-S. (2003). On the association between institutional ownership and aggressive corporate earnings management in Australia. *The British Accounting Review*, *35*(2), 105–128.

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting & Economics*, *39*(1), 163–197. https://doi.org/10.1016/j.jacceco.2004.11.002

Kowaleski, Z. T., Mayhew, B. W., & Tegeler, A. C. (2018). The impact of consulting services on audit quality: An experimental approach. *Journal of Accounting Research*, *56*(2), 673–711. https://doi.org/10.1111/1475-679X.12197

Krishnan, G. V. (2003). Does Big 6 auditor industry expertise constrain earnings management? *Accounting Horizons*, *17*, 1–16. https://doi.org/10.2308/acch.2003.17.s-1.1

Krishnan, G. V., Visvanathan, G., & Yu, W. (2013). Do auditor-provided tax services enhance or impair the value relevance of earnings? *The Journal of the American Taxation Association*, *35*(1), 1–19.

Krishnan, G. V., & Yu, W. (2011). Further evidence on knowledge spillover and the joint determination of audit and non-audit fees. *Managerial Auditing Journal*, *26*(3), 230–247.

Krishnan, J. (1994). Auditor switching and conservatism. *The Accounting Review*, *69*(1), 200–215.

Krishnan, J., & Krishnan, J. (1996). The role of economic trade-offs in the audit opinion decision: An empirical analysis. *Journal of Accounting, Auditing & Finance*, *11*(4), 565–586.

Krishnan, J., Su, L., & Zhang, Y. (2011). Nonaudit services and earnings management in the pre-SOX and post-SOX eras. *Auditing: A Journal of Practice & Theory*, *30*(3), 103–123.

Kurnia, R., & Cellica, L. (2016). The impact of bankruptcy prediction, company's financial condition, previous year audit opinion, firm size and audit tenure towards auditor's going concern opinion. *Accounting and Finance Review*, *1*(1), 51–58

Kwon, S. Y., Lim, Y., & Simnett, R. (2014). The effect of mandatory audit firm rotation on audit quality and audit fees: Empirical evidence from the Korean audit market. *Auditing: A Journal of Practice & Theory*, *33*(4), 167–196. https://doi.org/10.2308/ajpt-50814

Kwon, S. Y., & Yi, H. S. (2018). Do social ties between CEOs and engagement audit partners affect audit quality and audit fees?. *Auditing: A Journal of Practice & Theory*, *37*(2), 139–161. https://doi.org/10.2308/ajpt-51875

Lai, K.-W. (2019). Audit report lag, audit fees, and audit quality following an audit firm merger: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation*, *36*, 100271.

García Lara, J. M., Garcia Osma, B., & Mora, A. (2005). The effect of earnings management on the asymmetric timeliness of earnings. *Journal of Business Finance & Accounting*, *32*(3–4), 691–726.

Lawrence, A., Minutti-Meza, M., & Zhang, P. (2011). Can Big 4 versus Non-Big 4 Differences in Audit-Quality Proxies Be Attributed to Client Characteristics? *The Accounting Review*, *86*(1), 259–286.

Lee, H. Y., & Mande, V. (2005). The relationship of audit committee characteristics with endogenously determined audit and non-audit fees. *Quarterly Journal of Business and Economics*, *44*(3/4), 93–112.

Lee, P., Stokes, D., Taylor, S., & Walter, T. (2003). The association between audit quality, accounting disclosures and firm-specific risk: Evidence from initial public offerings. *Journal of Accounting and Public Policy*, *22*(5), 377–400.

Leftwich, R. (1980). Market failure fallacies and accounting information. *Journal of Accounting & Economics*, *2*(3), 193-211. https://doi.org/10.1016/0165-4101(80)90002-6

Lennox, C. (2005). Audit quality and executive officers' affiliations with CPA firms. *Journal of Accounting and Economics*, *39*(2), 201–231.

Lennox, C., & Li, B. (2012). The consequences of protecting audit partners' personal assets from the threat of liability. *Journal of Accounting & Economics*, *54*(2/3), 154–173. https://doi.org/10.1016/j.jacceco.2012.06.002

Lennox, C., & Pittman, J. (2010). Auditing the auditors: Evidence on the recent reforms to the external monitoring of audit firms. *Journal of Accounting and Economics*, *49*(1), 84–103. https://doi.org/10.1016/j.jacceco.2009.04.002

Lennox, C. S. (1999). Non-audit fees, disclosure and audit quality. *European Accounting Review*, *8*(2), 239–252. https://doi.org/10.1080/096381899336014

Lennox, C. S. (2000). Going-concern opinions in failing companies: Auditor dependence and opinion shopping. SSRN. https://doi.org/10.2139/ssrn.240468

Lennox, C. S., & Wu, X. (2018). A review of the archival literature on audit partners. *Accounting Horizons*, *32*(2), 1–35.

Leone, A. J., Rice, S., Weber, J. P., & Willenborg, M. (2013). How do auditors behave during periods of market euphoria? The case of internet IPOs. *Contemporary Accounting Research, 30*(1), 182–214.

Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics, 69*(3), 505–527.

Levinthal, D. A., & Fichman, M. (1988). Dynamics of interorganizational attachments: Auditor–client relationships. *Administrative Science Quarterly, 33*(3), 345–369.

Levitt, A., Jr. (1998). The numbers game. *The CPA Journal*, *68*(12), 14.

Li, C. (2009). Does client importance affect auditor independence at the office level? Empirical evidence from going-concern opinions. *Contemporary Accounting Research, 26*(1), 201–230.

Lim, S., & Matolcsy, Z. (1999). Earnings management of firms subjected to product price controls. *Accounting & Finance*, *39*(2), 131–150.

Lim, C.-Y., & Tan, H.-T. (2008). Non-audit service fees and audit quality: The impact of auditor specialization. *Journal of Accounting Research, 46*(1), 199–246. https://doi.org/10.1111/j.1475-679X.2007.00266.x

Lin, Z. J., & Liu, M. (2013). The effects of managerial shareholding on audit fees: Evidence from Hong Kong. *International Journal of Auditing, 17*(3), 227–245. https://doi.org/10.1111/ijau.12000

Liu, X., & Simunic, D. A. (2005). Profit sharing in an auditing oligopoly. *The Accounting Review, 80*(2), 677–702.

Lobo, G. J., & Zhou, J. (2006). Did conservatism in financial reporting increase after the Sarbanes-Oxley Act? Initial evidence. *Accounting Horizons*, *20*(1), 57–73.

López, D. M., & Peters, G. F. (2011). Auditor workload compression and busy season auditor switching. *Accounting Horizons*, *25*(2), 357–380.

Lopez, T. J., & Rees, L. (2002). The effect of beating and missing analysts' forecasts on the information content of unexpected earnings. *Journal of Accounting, Auditing & Finance, 17*(2), 155–184.

Louis, H. (2004). Earnings management and the market performance of acquiring firms. *Journal of Financial Economics, 74*(1), 121–148.

Louwers, T. J. (1998). The relation between going-concern opinions and the auditor's loss function. *Journal of Accounting Research, 36*(1), 143–156.

Madrick, J. (2003). Financial reporting: Lessons of the Enron collapse. *Harvard International Journal of Press/Politics*, *8*(1), 3–7. https://doi.org/10.1177/1081180X02238781

Magee, R. P., & Tseng, M.-C. (1990). Audit pricing and independence. *The Accounting Review*, 315–336.

Maher, M. W., Tiessen, P., Colson, R., & Broman, A. J. (1992). Competition and audit fees. *The Accounting Review*, *67*(1), 199–211.

Mallette, P., & Fowler, K. L. (1992). Effects of board composition and stock ownership on the adoption of "poison pills". *Academy of Management Journal*, *35*(5), 1010–1035.

Malloy, C. J. (2005). The geography of equity analysis. *The Journal of Finance*, *60*(2), 719–755.

Mansi, S. A., Maxwell, W. F., & Miller, D. P. (2004). Does auditor quality and tenure matter to investors? Evidence from the bond market. *Journal of Accounting Research*, *42*(4), 755–793. https://doi.org/10.1111/j.1475-679X.2004.00156.x

Manzon, G. B., Jr. (1992). Earnings management of firms subject to the alternative minimum tax. *The Journal of the American Taxation Association*, *14*(2), 88.

Mao, Y., & L. Renneboog. (2013). Do managers manipulate earnings prior to management buyouts? In *SSRN Working Paper Series*.

Martinov-Bennie, N., Cohen, J., & Simnett, R. (2011). Impact of the CFO's affiliation on auditor independence. *Managerial Auditing Journal*, 26(8), 656–671.

Mashayekhi, B., & Bazaz, M. S. (2008). Corporate governance and firm performance in Iran. *Journal of Contemporary Accounting & Economics*, *4*(2), 156–172.

Mather, P., & Ramsay, A. (2006). The effects of board characteristics on earnings management around Australian CEO changes. *Accounting Research Journal*, *19*(2), 78–93.

Matsumoto, D. A. (2002). Management's incentives to avoid negative earnings surprises. *The Accounting Review*, *77*(3), 483–514.

Maury, M. D. (2000). A circle of influence: Are all the stakeholders included? *Journal of Business Ethics*, *23*(1), 117–121.

Mautz, R. K., & Sharaf, H. A. (1961). *The philosophy of auditing*. American Accounting Association.

Mayhew, B. W., & Wilkins, M. S. (2003). Audit firm industry specialization as a differentiation strategy: Evidence from fees charged to firms going public. *Auditing: A Journal of Practice & Theory*, *22*(2), 33–52. https://doi.org/10.2308/aud.2003.22.2.33

McKeown, J. C., Mutchler, J. F., & Hopwood, W. (1991). Towards an explanation of auditor failure to modify the audit opinions of bankrupt companies. *Auditing: A Journal of Practice & Theory*, *10*, 1–13.

McLennan, D. (2015). *Transparency report*. https://assets.kpmg/content/dam/kpmg/au/pdf/2015/transparency-report-2015.pdf

McLennan, D. (2016). *Transparency report*. https://assets.kpmg/content/dam/kpmg/au/pdf/2016/transparency-report-2016.pdf

McMeeking, K. P. (2001). *An Empirical Analysis of Initial Audit and Non-audit Service Fees*. Working Paper, University of Exeter.

McMeeking, K. P., Peasnell, K. V., & Pope, P. F. (2006). The determinants of the UK Big Firm premium. *Accounting and Business Research*, *36*(3), 207–231.

McNichols, M. F. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy*, *19*(4), 313–345. https://doi.org/10.1016/S0278-4254(00)00018-1

McNichols, M., & Wilson, G. P. (1988). Evidence of earnings management from the provision for bad debts. *Journal of Accounting Research*, 26, 1–31.

Meek, G. K., Rao, R. P., & Skousen, C. J. (2007). Evidence on factors affecting the relationship between CEO stock option compensation and earnings management. *Review of Accounting and Finance, 6*(3), 304–323.

Melancon, B. (2000). The proposed SEC rule on auditor independence and its consequences. *Journal of Accountancy*, *190*(4), 26.

Menon, K., & Schwartz, K. B. (1987). An empirical investigation of audit qualification decisions in the presence of going concern uncertainties. *Contemporary Accounting Research*, *3*(2), 302–315.

Menon, K., & Williams, D. D. (2001). Long-term trends in audit fees. *Auditing: A Journal of Practice & Theory*, *20*(1), 115–136.

Menon, K., & Williams, D. D. (2010). Investor reaction to going concern audit reports. *The Accounting Review*, *85*(6), 2075–2105.

Mercier, S. (1999). *L'éthique Dans Les Entreprises*, La Découverte.

Meuwissen, R., & Quick, R. (2019). The effects of non-audit services on auditor independence: An experimental investigation of supervisory board members' perceptions. *Journal of International Accounting, Auditing and Taxation*, *36*, 100264. https://doi.org/10.1016/j.intaccaudtax.2019.05.004

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American journal of sociology*, *83*(2), 340–363.

Miah, M. S., Jiang, H., Rahman, A., & Stent, W. (2020). Audit effort, materiality and audit fees: Evidence from the adoption of IFRS in Australia. *Accounting Research Journal*, *33*(1), 186–216. https://doi.org/10.1108/ARJ-06-2018-0103

Michas, P. N. (2011). The importance of audit profession development in emerging market countries. *The Accounting Review*, *86*(5), 1731–1764. https://doi.org/10.2308/accr-10097

Minutti-Meza, M. (2013). Does auditor industry specialization improve audit quality? *Journal of Accounting Research*, *51*(4), 779–817.

Mo, P. L., Rui, O. M., & Wu, X. (2015). Auditors' going concern reporting in the pre-and post-bankruptcy law eras: Chinese affiliates of big 4 versus local auditors. *The International Journal of Accounting*, *50*(1), 1–30.

Monem, R. M. (2003). Earnings management in response to the introduction of the Australian gold tax. *Contemporary Accounting Research*, *20*(4), 747–774.

Moore, D. A., Tetlock, P. E., Tanlu, L., & Bazerman, M. H. (2006). Conflicts of interest and the case of auditor independence: Moral seduction and strategic issue cycling. *Academy of Management Review*, *31*(1), 10–29. https://doi.org/10.5465/AMR.2006.19379621

Moreira, J., & Pope, P. F. (2007). Earnings Management to Avoid Losses: a cost of debt explanation. *Research Center on Industrial, Labour and Managerial Economics*, *4*.

Morsfield, G., & C. Tan. (2006). Do venture capitalists influence the decision to manage earnings in initial public offerings? *The Accounting Review*, *81*(5), 1119–1150.

Moriceau, J.-L. (2005). What can we learn from a singular case like Enron? *Critical Perspectives on Accounting*, *16*(6), 787–796.

Perry, S., & T. Williams. (1994). Earnings management preceding management buyout offers. *Journal of Accounting and Economics*, *18*(1), 157–179.

Pearson, D. (2014). Significant reforms in public sector audit–staying relevant in times of change and challenge. *Journal of Accounting & Organizational Change*, *10*(1), 150–161.

Mutchler, J. F. (1984). Auditors' perceptions of the going-concern opinion decision. *Auditing: A Journal of Practice & Theory*, *3*(2), 17–30.

Mutchler, J. F., Hopwood, W., & McKeown, J. M. (1997). The influence of contrary information and mitigating factors on audit opinion decisions on bankrupt companies. *Journal of Accounting Research*, *35*(2), 295–310.

Mutchler, J. F., & Williams, D. D. (1990). The relationship between audit technology, client risk profiles, and the going-concern opinion decision. *Auditing: A Journal of Practice & Theory*, *9*(3), 39–54.

Myers, J. N., Myers, L. A., & Omer, T. C. (2003). Exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation? *The Accounting Review*, *78*(3), 779–799.

Myers, L. A., Schmidt, J., & Wilkins, M. (2014). An investigation of recent changes in going concern reporting decisions among Big N and non-Big N auditors. *Review of Quantitative Finance and Accounting*, *43*(1), 155–172.

Myers, L. A., Shipman, J. E., Swanquist, Q. T., & Whited, R. L. (2018). Measuring the market response to going concern modifications: The importance of disclosure timing. *Review of Accounting Studies*, *23*(4), 1512–1542.

Navissi, F. (1999). Earnings management under price regulation. *Contemporary Accounting Research*, *16*(2), 281–304.

Nikkinen, J., & Sahlström, P. (2004). Does agency theory provide a general framework for audit pricing? *International Journal of Auditing*, *8*(3), 253–262.

O'Keefe, T. B., Simunic, D. A., & Stein, M. T. (1994). The production of audit services: Evidence from a major public accounting firm. *Journal of Accounting Research*, *32*(2), 241–261.

Omer, T., Bedard, J., & Falsetta, D. (2006). Tax fees paid to auditors: The effects of a changing regulatory environment. *The Accounting Review*, *81*(5), 1095–1117.

O'Sullivan, N. (1999). Board characteristics and audit pricing post-Cadbury: A research note. *European Accounting Review*, *8*(2), 253–263.

O'Sullivan, N. (2000). The impact of board composition and ownership on audit quality: evidence from large UK companies. *The British Accounting Review*, *32*(4), 397–414.

Palmrose, Z.-V. (1986a). Audit fees and auditor size: Further evidence. *Journal of Accounting Research*, *24*(1), 97–110.

Palmrose, Z.-V. (1986b). The effect of nonaudit services on the pricing of audit services: Further evidence. *Journal of Accounting Research*, *24*(2), 405–411.

Palmrose, Z.-V. (1988). An analysis of auditor litigation and audit service quality. *The Accounting Review*, *63*(1), 55.

Palmrose, Z.-V. (1989). The relation of audit contract type to audit fees and hours. *The Accounting Review*, *64*(3), 488–499.

Parkash, M., & Venable, C. F. (1993). Auditee incentives for auditor independence: The case of nonaudit services. *The Accounting Review*, *68*(1), 113–133.

Parliamentary Joint Committee on Corporations and Financial Services. (2020). *Regulation of auditing in Australia: Final report.* Commonwealth of Australia. https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Corporations_and_Financial_Services/RegulationofAuditing/Report

Paterson, J. S., & Valencia, A. (2011). The effects of recurring and nonrecurring tax, audit-related, and other nonaudit services on auditor independence. *Contemporary Accounting Research*, *28*(5), 1510–1536. https://doi.org/10.1111/j.1911-3846.2010.01060.x

Peel, M. J. (2013). The pricing of initial audit engagements by Big 4 and leading mid-tier auditors. *Accounting and Business Research, 43*(6), 636–659.

Peel, M. J., & Roberts, R. (2003). Audit fee determinants and auditor premiums: Evidence from the micro-firm sub-market. *Accounting and Business Research*, *33*(3), 207–233.

Pendley, J. A. (1998). Industry specialization in the auditors' going concern opinion decision. *Accounting Enquiries*, *7*(2), 155.

Petroni, K. (1992). Optimistic reporting in the property-casualty insurance industry. *Journal of Accounting and Economics, 15*(4), 485–508.

Salancik, G. R., & Pfeffer, J. (1978). *The external control of organizations: A resource dependence perspective* (pp. 167–199). New York: Harper & Row.

Pincus, M., & Rajgopal, S. (2002). The interaction between accrual management and hedging: Evidence from oil and gas firms. *The Accounting Review*, *77*(1), 127–160.

Pittman, J. A., & Fortin, S. (2004). Auditor choice and the cost of debt capital for newly public firms. *Journal of Accounting and Economics*, *37*(1), 113–136.

Pong, C. M., & Whittington, G. (1994). The determinants of audit fees: Some empirical models. *Journal of Business Finance & Accounting*, *21*(8), 1071–1095.

Potter, G. (1992). Accounting earnings announcements, institutional investor concentration, and common stock returns. *Journal of Accounting Research*, *30*(1), 146–155. https://doi.org/10.2307/2491097

Pourciau, S. (1993). Earnings management and nonroutine executive changes. *Journal of Accounting and Economics*, *16*(1–3), 317–336.

Pratt, J., & Beaulieu, P. (1992). Organizational culture in public accounting: Size, technology, rank, and functional area. *Accounting, Organizations and Society*, *17*(7), 667–684.

Pratt, J., & Stice, J. D. (1994). The effects of client characteristics on auditor litigation risk judgments, required audit evidence, and recommended audit fees. *The Accounting Review*, 639–656.

Press, E. G., & Weintrop, J. B. (1990). Accounting-based constraints in public and private debt agreements: Their association with leverage and impact on accounting choice. *Journal of Accounting and Economics*, *12*(1-3), 65–95.

Previts, G. J., & Merino, B. D. (1998). *A history of accountancy in the United States: The cultural significance of accounting*. Ohio State University Press.

Public Company Accounting Oversight Board. (2010). *Notice of Filing of Proposed Rules on Auditing Standards Related to the Auditor's Assessment of and*

Response to Risk and Related Amendments to PCAOB Standards. https://www.sec.gov/rules/pcaob/2010/34-62919.pdf

Raghunandan, K., & Rama, D. V. (1995). Audit reports for companies in financial distress: Before and after SAS No. 59. *Auditing: A Journal of Practice & Theory*, *14*(1), 50.

Mergenthaler, R., Rajgopal, S., & Srinivasan, S. (2012). *CEO and CFO career penalties to missing quarterly analysts forecasts.* SSRN 1152421.

Rajgopal, S., Srinivasan, S., & Zheng, X. (2021). Measuring audit quality. *Review of Accounting Studies*, *26*(2), 559–619. https://doi.org/10.1007/s11142-020-09570-9

Ramadhan, A. P., & Sumardjo, M. (2021). Previous years audit opinions, profitability, audit tenure and quality control system on going concern audit opinion. *European Journal of Business and Management Research*, *6*(2), 140–145.

Ramsay, I. (2001, October). *Independence of Australian company auditors: Review of current Australian requirements and proposals for reform*. Commonwealth of Australia. https://treasury.gov.au/sites/default/files/2019-03/ramsay2.pdf

Ratzinger-Sakel, N. (2013). Auditor fees and auditor independence: Evidence from going concern reporting decisions in Germany. *Auditing: A Journal of Practice & Theory*, *32*(4), 129–168. https://doi.org/10.2308/ajpt-50532

Read, W. J. (2015). Auditor fees and going-concern reporting decisions on bankrupt companies: Additional evidence. *Current Issues in Auditing*, *9*(1), A13–A27. https://doi.org/10.2308/ciia-51109

Read, W. J., & Yezegel, A. (2016). Auditor tenure and going concern opinions for bankrupt clients: Additional evidence. *Auditing: A Journal of Practice & Theory*, *35*(1), 163–179. https://doi.org/10.2308/ajpt-51217

Rechner, P. L., & Dalton, D. R. (1991). CEO duality and organizational performance: A longitudinal analysis. *Strategic Management Journal*, *12*(2), 155–160.

Redmayne, N. B., Bradbury, M. E., & Cahan, S. F. (2010). The effect of political visibility on audit effort and audit pricing. *Accounting & Finance*, *50*(4), 921–939.

Reichelt, K. J., & Wang, D. (2010). National and office-specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research*, *48*(3), 647–686. http://www.jstor.org/stable/40784868

Reynolds, J. K., Deis, D. R., Jr., & Francis, J. R. (2004). Professional service fees and auditor objectivity. *Auditing: A Journal of Practice & Theory*, *23*(1), 29–52. https://doi.org/10.2308/aud.2004.23.1.29

Reynolds, J. K., & Francis, J. R. (2000). Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting & Economics, 30*(3), 375–400.

Robbins, W. A., Turpin, R., & Polinski, P. (1993). Economic incentives and accounting choice strategy by nonprofit hospitals. *Financial Accountability & Management, 9*(3), 159–175.

Robinson, D. (2008). Auditor independence and auditor-provided tax service: Evidence from going-concern audit opinions prior to bankruptcy filings. *Auditing: A Journal of Practice & Theory, 27*(2), 31–54. https://doi.org/10.2308/aud.2008.27.2.31

Ronen, J., & Yaari, V. (2008). *Earnings management: Emerging insights in theory, practice, and research*. Springer US.

Rosenstein, S., & Wyatt, J. G. (1990). Outside directors, board independence, and shareholder wealth. *Journal of Financial Economics, 26*(2), 175–191.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review, 63*(2), 134–139.

Coulton, J., Ruddock, C., & Taylor, S. L. (2007). *Audit fees, non-audit services and auditor-client economic bonding.* http://dx.doi.org/10.2139/ssrn.964792

Ruddock, C., Taylor, S. J., & Taylor, S. L. (2006). Nonaudit services and earnings conservatism: Is auditor independence impaired? *Contemporary Accounting Research, 23*(3), 701–746. https://doi.org/10.1506/6AE8-75YW-8NVW-V8GK

Ruiz-Barbadillo, E., Go´ mez-Aguilar, N., & Carrera, N. (2009). Does mandatory audit firm rotation enhance auditor independence? Evidence from Spain. *Auditing: A Journal of Practice & Theory, 28*(1), 113–135.

Sadka, G. (2006). The economic consequences of accounting fraud in product markets: Theory and a case from the US telecommunications industry (WorldCom). *American Law and Economics Review, 8*(3), 439–475.

Sánchez-Ballesta, J. P., & García-Meca, E. (2007). Ownership structure, discretionary accruals and the informativeness of earnings. *Corporate Governance: An International Review, 15*(4), 677–691.

Sarbanes-Oxley, A. C. T. (2002). US Public Law No. 107–204, 116 Stat. 745. *The Public Company Accounting Reform and Investor Protection Act*.

Sarens, G., & Abdolmohammadi, M. J. (2011). Monitoring effects of the internal audit function: Agency theory versus other explanatory variables. *International Journal of Auditing, 15*(1), 1–20.

Sauerbrei, W., Boulesteix, A.-L., & Binder, H. (2011). Stability investigations of multivariable regression models derived from low- and high-dimensional data [Article]. *Journal of Biopharmaceutical Statistics, 21*(6), 1206–1231. https://doi.org/10.1080/10543406.2011.629890

Sawicki, J., & Shrestha, K. (2008). Insider trading and earnings management. *Journal of Business Finance & Accounting*, *35*(3-4), 331–346. https://doi.org/10.1111/j.1468-5957.2008.02075.x

Schmidt, J. J. (2012). Perceived auditor independence and audit litigation: The role of nonaudit services fees. *The Accounting Review*, *87*(3), 1033–1065.

Schneider, A., Church, B. K., & Ely, K. M. (2006). Non-audit services and auditor independence: A review of the literature. *Journal of Accounting Literature*, *25*, 169–211.

Schulte, A. A. (1965). Compatibility of management consulting and auditing. *The Accounting Review*, *40*(3), 587.

Scott, W. R. (1997). *Financial accounting theory*. Prentice Hall.

Shan, Y. G., Troshani, I., & Richardson, G. (2015). An empirical comparison of the effect of XBRL on audit fees in the US and Japan. *Journal of Contemporary Accounting & Economics*, *11*(2), 89–103.

Sharma, D. S. (2001). The association between non-audit services and the propensity of going concern qualifications: Implications for audit independence. *Asia-Pacific Journal of Accounting & Economics*, *8*(2), 143–155. https://doi.org/10.1080/16081625.2001.10510594

Sharma, D. S., & Sidhu, J. (2001). Professionalism vs commercialism: The association between non-audit services (NAS) and audit independence. *Journal of Business Finance & Accounting*, *28*(5-6), 563–594. https://doi.org/10.1111/1468-5957.00386

Simon, D., & Francis, J. (1988). The effects of auditor change on audit fees: Tests of price. *The Accounting Review*, *63*(2), 255.

Simon, D., Ramanan, R., & Dugar, A. (1986). The market for audit services in India: An empirical examination. *International Journal of Accounting*, *21*(1), 285–295.

Simon, D. T., & Taylor, M. H. (2002). A survey of audit pricing in Ireland. *International Journal of Auditing*, *6*(1), 3–12.

Simpson, A. (2013). Does investor sentiment affect earnings management? *Journal of Business Finance & Accounting*, *40*(7-8), 869–900.

Simunic, D. A. (1980). The pricing of audit services: Theory and evidence. *Journal of Accounting Research*, *18*(1), 161–190. https://doi.org/10.2307/2490397

Simunic, D. A. (1984). Auditing, consulting, and auditor independence. *Journal of Accounting Research*, *22*(2), 679–702. https://doi.org/10.2307/2490671

Simunic, D. A., & Stein, M. T. (1996). The impact of litigation risk on audit pricing: A review of the economics and the evidence. *Auditing: A Journal of Practice & Theory*, *15*, 132–134.

Singh, A., Singh, H., Sultana, N., & Evans, J. (2019). Independent and joint effects of audit partner tenure and non-audit fees on audit quality. *Journal of Contemporary Accounting & Economics*, *15*(2), 186–205. https://doi.org/10.1016/j.jcae.2019.04.005

Skaife, H. A., Collins, D. W., Kinney Jr, W. R., & LaFond, R. (2007). *The effect of SOX internal control deficiencies and their remediation on accrual quality.* SSRN 906474.

Skinner, D. J. (1993). The investment opportunity set and accounting procedure choice: Preliminary evidence. *Journal of Accounting and Economics*, *16*(4), 407–445.

Skinner, D. J., & Sloan, R. G. (2002). Earnings surprises, growth expectations, and stock returns or don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies*, *7*(2–3), 289–312.

Sloan, R. G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings?. *The Accounting review*, 289–315.

Sloan, R. G. (2001). Financial accounting and corporate governance: A discussion. *Journal of Accounting and Economics*, *32*(1–3), 335–347.

Smith Jr, C. W. (1993). A perspective on accounting-based debt covenant violations. *The Accounting Review*, *68*(2), 289–303.

Solomon, I., M. Shields, and O. Whittington. 1999. What do industry-specialist auditors know? *Journal of Accounting Research, 37*(3), 191–208.

Sridharan, U. V., Dickes, L., & Caines, W. R. (2002). The social impact of business failure: Enron. *American Journal of Business*, *17*(2), 11–22.

Srinidhi, B. N., & Gul, F. A. (2007). The differential effects of auditors' nonaudit and audit fees on accrual quality. *Contemporary Accounting Research, 24*(2), 595–629. https://doi.org/10.1506/ARJ4-20P3-201K-3752

Stanley, J. D., & DeZoort, F. T. (2007). Audit firm tenure and financial restatements: An analysis of industry specialization and fee effects. *Journal of Accounting and Public Policy*, *26*(2), 131–159.

Stevens, J. P. (1984). Outliers and influential data points in regression analysis. *Psychological Bulletin*, *95*(2), 334–344. https://doi.org/10.1037/0033-2909.95.2.334

Stewart, J., & Munro, L. (2007). The impact of audit committee existence and audit committee meeting frequency on the external audit: Perceptions of Australian auditors. *International Journal of Auditing*, *11*(1), 51–69.

Strong, J. S., & Meyer, J. R. (1987). Asset writedowns: Managerial incentives and security returns. *The Journal of Finance*, *42*(3), 643–661.

Stubben, S. R. (2010). Discretionary revenues as a measure of earnings management. *The Accounting Review*, *85*(2), 695–717.

Subramanyam, K. (1996). The pricing of discretionary accruals. *Journal of Accounting and Economics*, *22*(1-3), 249–281.

Sultana, N. (2015). Audit committee characteristics and accounting conservatism. *International Journal of Auditing*, *19*(2), 88–102.

Sun, J., & Liu, G. (2011). Industry specialist auditors, outsider directors, and financial analysts. *Journal of Accounting and Public Policy*, *30*(4), 367–382.

Sun, J., & Liu, G. (2013). Auditor industry specialization, board governance, and earnings management. *Managerial Auditing Journal*, *28*(1), 45–64.

Sun, L., & Rath, S. (2009). An empirical analysis of earnings management in Australia. *International Journal of Business, Economics, Finance and Management Sciences*, *1*(2), 150–166.

Sundgren, S., & Svanström, T. (2014). Auditor-in-charge characteristics and going-concern reporting. *Contemporary Accounting Research*, *31*(2), 531–550.

Svanström, T. (2013). Non-audit services and audit quality: Evidence from private firms. *European Accounting Review*, *22*(2), 337–366. https://doi.org/10.1080/09638180.2012.706398

Taffler, R. J., & Ramalinggam, K. S. (1982). *The determinants of the audit fee in the UK: an exploratory study*. City University Business School.

Taylor, M. H., DeZoort, F. T., Munn, E., & Thomas, M. W. (2003). A proposed framework emphasizing auditor reliability over auditor independence. *Accounting Horizons, 17*(3), 257–266.

Taylor, M. H., & Simon, D. T. (1999). Determinants of audit fees: The importance of litigation, disclosure, and regulatory burdens in audit engagements in 20 countries. *The International Journal of Accounting*, *34*(3), 375–388.

Teoh, S. H., & Wong, T. J. (1993). Perceived auditor quality and the earnings response coefficient. *The Accounting Review*, *68*(2), 346–366.

Teoh, S. H., Wong, T. J., & Rao, G. R. (1998). Are accruals during initial public offerings opportunistic? *Review of Accounting Studies, 3*(1-2), 175–208.

Teoh, S. H., Wong, T. J., & Rao, G. R. (1998b). Earnings management and the long-term market performance of initial public offerings. *Journal of Finance, 53*(6), 1935–1974.

Tepalagul, N., & Lin, L. (2014). Auditor independence and audit quality. *Journal of Accounting, Auditing & Finance*, *30*(1), 101–121. https://doi.org/10.1177/0148558x14544505

Tritschler, J. (2013). *Audit quality: Association between published reporting errors and audit firm characteristics*. https://doi.org/10.1007/978-3-658-04174-8

Tucker, J. W., & Zarowin, P. A. (2006). Does income smoothing improve earnings informativeness? *The Accounting Review*, *81*(1), 251–270.

Turpen, R. A. (1990). Differential pricing on auditor's initial engagements-further evidence. *Auditing: A Journal of Practice & Theory*, *9*(2), 60–76.

Uang, J. Y., Citron, D. B., Sudarsanam, S., & Taffler, R. J. (2006). Management going-concern disclosures: Impact of corporate governance and auditor reputation. *European Financial Management*, *12*(5), 789–816.

Underdown, B., & Taylor, P. J. (1987). *Accounting theory & policy making*. Heinemann Professional Publishing.

US Government Accountability Office. (1996). *The accounting profession - major issues: progress and concerns (GAO/aimd-96-98a), edited by GAO.*

US Government Accountability Office. (2003). *Public accounting firms: Required study on the potential effects of mandatory audit firm rotation.*

US Public Oversight Board. (2000). *Panel on audit effectiveness report and recommendations, edited by POB.*

US Public Oversight Board. (2000, August). *The panel on audit effectiveness report and recommendations.* https://www.iasplus.com/en/binary/resource/pobaudit.pdf

US Public Oversight Board. (2010). *Notice of filing of proposed rules on auditing standards related to the auditor's assessment of and response to risk and related amendments to PCAOB standards.* https://www.sec.gov/rules/pcaob/2010/34-62919.pdf

US Securities and Exchange Commission. (1977). *Disclosure of relationships with independent public accountants (securities act release No. 5869), edited by SEC.*

US Securities and Exchange Commission. (1978). *Disclosure of relationships with independent public accountants (securities act release No. 250), edited by SEC.*

US Securities and Exchange Commission. (1979). *Interpretative release to accounting matters: scope of services by independent accountants (accounting series release No. 264), edited by SEC.*

US Securities and Exchange Commission. (1980). *Report to congress on the accounting profession and the commission's oversight role, edited by SEC.*

US Securities and Exchange Commission. (1981). *Relationships between registrants and independent accountants (accounting series release No. 296), edited by SEC.*

US Securities and Exchange Commission. (1982). *relationships between registrants and independent accountants (accounting series release No. 304), edited by SEC.*

US Securities and Exchange Commission. (2000, October). *Final rule: Revision of the commission's auditor independence requirements.* http://www.sec.gov/rules/final/33-7919.htm

US Securities and Exchange Commission. (2003, March). *Final rule: Strengthening the commission's requirements regarding auditor independence.* http://www.sec.gov/rules/final/33-8183.htm

US Securities and Exchange Commission. (2001, February). *Final rule: Revision of the Commission's auditor independence requirements.* https://www.sec.gov/rules/final/33-7919.htm

Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics, 53*(1), 113–142.

Vafeas, N. (2005). Audit committees, boards, and the quality of reported earnings. *Contemporary Accounting Research*, *22*(4), 1093–1122.

Van Linden, C., & Hardies, K. (2018). Entrance requirements to the audit profession within the EU and audit quality. *International Journal of Auditing, 22*(3), 360–373. https://doi.org/10.1111/ijau.12127

Vancil, R. F. (1987). *Passing the baton: Managing the process of CEO succession*. Harvard Business Review Press.

Vanstraelen, A. (2000). Impact of renewable long-term audit mandates on audit quality. *European Accounting Review*, *9*(3), 419–442. https://doi.org/10.1080/09638180020017140

Velury, U. (2003). The association between auditor industry specialization and earnings management. *Research in Accounting Regulation, 16*, 171–184.

Venkataraman, R., Weber, J. P., & Willenborg, M. (2008). Litigation risk, audit quality, and audit fees: Evidence from initial public offerings. *The Accounting Review*, *83*(5), 1315–1345.

Venuti, E. K. (2004). The going-concern assumption revisited: Assessing a company's future viability. *The CPA Journal*, *74*(5), 40.

Vinten, G. (2002). The corporate governance lessons of Enron. *Corporate Governance: The International Journal of Business in Society, 2*(4), 4–9.

Wallace, W. (1980). *The Economic Role of the Audit in Free and Regulated Markets*. Touche Ross & Co.

Wallman, S. M. (1996). The future of accounting, part III: Reliability and auditor independence. *Accounting Horizons*, *10*(4), 76.

Wang, K., Sewon, O., & Iqbal, Z. (2009). Audit pricing and auditor industry specialization in an emerging market: Evidence from China. *Journal of International Accounting, Auditing and Taxation*, *18*(1), 60–72.

Wang, D., & Zhou, J. (2012). The impact of PCAOB Auditing Standard No. 5 on audit fees and audit quality. *Accounting Horizons*, *26*(3), 493–511. https://doi.org/10.2308/acch-50183

Warfield, T. D., Wild, J. J., & Wild, K. L. (1995). Managerial ownership, accounting choices, and informativeness of earnings. *Journal of Accounting and Economics*, *20*(1), 61–91.

Warfield, T. D., Wild, J. J., & Wild, K. L. (1995). Managerial ownership, accounting choices, and informativeness of earnings. *Journal of Accounting and Economics*, *20*(1), 61–91.

Watkins, A. L., Hillison, W., & Morecroft, S. E. (2004). Audit quality: A synthesis of theory and empirical evidence. *Journal of Accounting Literature*, *23*, 153–193.

Watkins, S. (2003). Former Enron vice president Sherron Watkins on the Enron collapse. *Academy of Management Perspectives*, *17*(4), 119–125.

Watts, R. L. (1977). Corporate financial statements, a product of the market and political processes. *Australian Journal of Management*, *2*(1), 53–75.

Watts, R. L., & Zimmerman, J. L. (1978). Towards a positive theory of the determination of accounting standards. *The Accounting Review*, *53*(1), 112–134.

Watts, R. L., & Zimmerman, J. L. (1980). On the irrelevance of replacement cost disclosures for security prices. *Journal of Accounting and Economics*, *2*(2), 95–106. https://doi.org/10.1016/0165-4101(80)90007-5

Watts, R. L., & Zimmerman, J. L. (1983). Agency problems, auditing, and the theory of the firm: Some evidence. *The Journal of Law and Economics*, *26*(3), 613–633.

Watts, R. L., & Zimmerman, J. L. (1986). *Positive accounting theory*. SSRN https://ssrn.com/abstract=928677

Watts, R. L., & Zimmerman, J. L. (1990). Positive accounting theory: A ten year perspective. *The Accounting Review*, 131–156.

Whalen, D., Hannen, B., & Lussier, J. (2015). Audit fees and non-audit fees: A thirteen year trend. *Audit Analytics*.

Whisenant, S., Sankaraguruswamy, S., & Raghunandan, K. (2003). Evidence on the joint determination of audit and non-audit fees. *Journal of Accounting Research*, *41*(4), 721–744. https://doi.org/10.1111/1475-679X.00121

White, G. E. (1970). Discretionary accounting decisions and income normalization. *Journal of Accounting Research*, *8*(2), 260–273. https://doi.org/10.2307/2490111

Whittington, G. (1993). Corporate governance and the regulation of financial reporting. *Accounting and Business Research*, *23*(1), 311–319.

Willenborg, M. (1999). Empirical analysis of the economic demand for auditing in the initial public offerings market. *Journal of Accounting Research*, *37*(1), 225–238.

Willenborg, M. (2002). Discussion of" brand name audit pricing, industry specialization, and leadership premiums post-Big 8 and Big 6 mergers". *Contemporary Accounting Research*, *19*(1), 111.

Wines, G. (1994). Auditor independence, audit qualifications and the provision of non-audit services: A note. *Accounting & Finance*, *34*(1), 75–86.

Wines, G. (2011). Auditor independence: Shared meaning between the demand and supply sides of the audit services market? *Managerial Auditing Journal*, *27*(1), 5–40. https://doi.org/10.1108/02686901211186081

Wright, S., and A. Wright. 1997. The effect of industry experience on hypothesis generation and audit planning decisions. *Behavioral Research in Accounting, 9,* 273–294.

Wu, C. Y.-H., Hsu, H.-H., & Haslam, J. (2016). Audit committees, non-audit services, and auditor reporting decisions prior to failure. *The British Accounting Review*, *48*(2), 240–256. https://doi.org/10.1016/j.bar.2015.03.001

Xie, B., Davidson III, W. N., & DaDalt, P. J. (2003). Earnings management and corporate governance: The role of the board and the audit committee. *Journal of Corporate Finance*, *9*(3), 295–316.

Xu, H., Dao, M., & Petkevich, A. (2019). Political corruption and auditor behavior: Evidence from US firms. *European Accounting Review*, *28*(3), 513–540.

Xu, Y., Carson, E., Fargher, N., & Jiang, L. (2013). Responses by Australian auditors to the global financial crisis. *Accounting & Finance*, *53*(1), 301–338.

Yang, W. S., Chun, L. S., & Ramadili, S. M. (2009). The effect of board structure and institutional ownership structure on earnings management. *International Journal of Economics and Management*, *3*(2), 332–353.

Yates, A. (2017). *Transparency report: Our multi-layered approach to quality*. https://assets.kpmg/content/dam/kpmg/au/pdf/2017/transparency-report-2017.pdf

Yates, A. (2018). *Transparency report: Engaging and delivering audit quality and trust*. https://assets.kpmg/content/dam/kpmg/au/pdf/2018/transparency-report-2018.pdf

Ye, P., Carson, E., & Simnett, R. (2006). Threats to auditor independence: The impact of non-audit services, tenure and alumni affiliation. *Theoretical Economics Letters, 8*(5), 10–12.

Ye, P., E. Carson, and R. Simnett. 2011. Threats to auditor independence: The Impact of Relationship and Economic Bonds. *Auditing: A Journal of Practice & Theory 30*(1), 121–148.

Young, S. (1999). Some reflections on accounting adjustments and economic value added. *Journal of Financial Statement Analysis, 4*(2), 7–19.

Zaman, M., Hudaib, M., & Haniffa, R. (2011). Corporate governance quality, audit fees and non-audit services fees. *Journal of Business Finance & Accounting, 38*(1-2), 165–197. https://doi.org/10.1111/j.1468-5957.2010.02224.x

Zhang, I. X. (2007). Economic consequences of the Sarbanes–Oxley Act of 2002. *Journal of Accounting & Economics*, *44*(1/2), 74–115. https://doi.org/10.1016/j.jacceco.2007.02.002

Zhang, M. W., & Myrteza, S. (1996). The determinants of audit fees: Australian perspective. *Asian Review of Accounting*, *4*(1), 81–97.

Zhang, P. (2003). Discussion of "Independence in appearance and in fact: An experimental investigation". *Contemporary Accounting Research*, *20*(1), 115.