WHAT IS THE RELATIONSHIP BETWEEN AUDIT PARTNER BUSYNESS AND AUDIT QUALITY?*

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Abstract

Contemporaneous studies generally find a negative relationship between audit partner busyness (APB), measured as the number of clients in an audit partner's portfolio, and audit quality. Their argument is that a busy partner does not devote sufficient time to properly audit his average client. Contrary to these studies, we argue that when busyness is optimally chosen by the partner, in equilibrium, there is no causal relationship between APB and audit quality. Using Australian data for the 1999–2010 period, we show that APB is not reliably linked to audit quality, consistent with this equilibrium theory. We argue that causality can be ascribed to the APB-audit quality relationship when accounting scandals exogenously shocked the Australian audit market during the 2002–04 period and APB likely deviated from optimum levels. Supporting this disequilibrium view, we find that higher APB reduces a partner's propensity to issue first-time going concern opinions during this period. Our evidence highlights the importance of the equilibrium condition in testing empirical associations between audit outcomes and endogenous auditor attributes, and shows that the detrimental effect of APB on audit quality is not as pervasive as contemporaneous studies suggest.

Keywords: audit partner; busyness; audit quality; equilibrium

JEL descriptors: M41, M42

1. Introduction

In response to the call from DeFond and Francis (2005) for auditing research at the individual auditor level, a growing literature demonstrates that audit outcomes are shaped by individual auditor characteristics.[1] Recent studies investigate the association between audit partner busyness (APB), that is, the number of clients in an audit partner's portfolio in a year, and audit quality. Based on the premise that an increase in APB reduces the amount of time the partner has for each client, these studies hypothesize a negative relationship between APB and audit quality. For bankrupt small and medium-sized Swedish clients, Sundgren and Svanström (2014) find that APB is negatively related to the propensity to issue a going concern opinion (GCO) before bankruptcy. For private Finnish clients, Karjalainen (2011) reports a positive relationship between the absolute value of discretionary accruals and APB, particularly regarding Big 4 audit firms and large clients. For listed Chinese firms, Gul, Ma, and Lai (2014) report a negative relationship between GCO issuance and APB and positive relations between APB and small profit reporting and financial misrepresentations alleged by the Chinese regulator.

Despite these empirical findings, the association between APB and audit quality is not clear *a priori*. Beginning with Jensen and Meckling (1976), agency theory posits that firms appoint outside independent auditors to reduce agency costs. There are also various market forces to incentivize auditors to maintain their reputation as high quality audit service suppliers (Watts and Zimmerman 1983; Ball 2009). Therefore, one must ask the penetrating questions of how could a partner in a rational world be too busy to care about his reputation and why would clients be willing to purchase audit services from a busy but presumably low quality partner?[2] In fact, there are countervailing arguments. According to DeAngelo (1981), an audit partner's independence increases with APB because he has more to lose in the event of audit failure; in addition, following the market for directorship theory of Fama (1980) and Fama and Jensen (1983), a partner's larger client base might suggest that he is perceived to be more credible in assuring the integrity of clients' accounting numbers and thus be able to attract more clients in the audit market. These theories predict a *positive* relationship between APB and audit quality. The endogenous nature of APB further complicates the interpretation of the empirical relationship

[1] These studies cover a range of individual-level auditor attributes, including tenure (Carey and Simnett 2006; Chen, Lin, and Lin 2008), economic bonding with clients (Chen, Sun, and Wu 2010), industry expertise (Chin and Chi 2009; Zerni 2012; Goodwin and Wu 2014), and demographic characteristics (Gul, Wu, and Yang 2013).

[2] We use the male pronoun throughout the paper because about 92 percent of sample audit partners were male and they signed about 94 percent of the audit reports.

between APB and audit quality. The classic theory of Demsetz and Lehn (1985) suggests that a value-maximizing shareholder has incentives to optimize the firm's ownership structure according to the firm's characteristics and needs. Therefore, the optimal ownership structure is likely to be firm specific and there may not be an observable relationship between ownership structure and firm performance. The Demsetz-Lehn (1985) theory has also been applied to explain corporate governance institutions, such as board structures (Hermalin and Weisbach 2003). In the auditor setting, one may expect that APB is endogenously determined in such a way that the level of APB in equilibrium represents the solution reached by value-maximizing auditors and clients to their resource allocation problems.

Humans have different attributes, such as different levels of risk aversion and various abilities that can affect the quality of their work. The literature regarding managerial effects has demonstrated that corporate executives exert individual-specific influences over various corporate policies (Bertrand and Schoar 2003; Dyreng, Hanlon, and Maydew 2010; Ge, Matsumoto, and Zhang 2011). Similarly, there is substantial heterogeneity in audit outcomes across individual auditors (Gul et al. 2013). These findings suggest that audit partners might have attributes correlated with both APB and audit quality. For example, busier partners might specialize in serving a larger clientele because they are skilled at handling multiple clients, and clients could be attracted to busier partners because they find that such partners have attributes that better fit their demand for audit services. As Demsetz and Lehn (1985) emphasize, inferring causality from cross-sectional correlations is problematic in this scenario: the relations between APB and audit quality, if any, could be spurious and do not necessarily have any causal interpretation.

In this paper, we examine the relationship between APB and audit quality for a sample of listed Australian clients between 1999 and 2010. In the interests of consistency with contemporaneous studies, we employ the following audit quality measures: discretionary accruals (Karjalainen 2011), beating zero profit by a small amount and the propensity to issue GCOs (Gul et al. 2014), and GCO accuracy (Sundgren and Svanström 2014).[3] With regard to these studies, our contribution is the consideration of APB as an attribute that is endogenously chosen by an audit partner according to his characteristics and thus represents an equilibrium condition. It is therefore important to control for unobservable partner characteristics that are correlated with audit quality variables. To this end, we employ the partner fixed-effect model, which controls for time-invariant

[3] Gul et al. (2014) also examine whether APB is related to the likelihood of engaging in earnings management that is caught by the Chinese regulator. In our sample, only 40 observations, less than 0.5 percent of total client years, are penalized by regulators for problematic audits.

partner attributes, such as generic ability and expertise. Evidence from all our audit quality metrics suggests that APB does not impair audit quality. Recognizing that insignificant results might have other causes, we conduct a battery of robustness tests, including considering non-linear model specifications, disaggregating variations in the types of APB into components in which the effects of APB are most likely to be observed, adding client fixed effects to the regressions and examining the moderating effects of audit office/firm size and client size. Although we cannot completely rule out a lack of time-series variation as an alternative explanation for the insignificance of the APB variable, the evidence is consistent with the endogenous nature of APB and suggests that APB in equilibrium is *not* reliably related to audit quality.

Although causality cannot be easily ascribed to relations between explanatory and explained variables when they are jointly chosen in equilibrium, it is possible to detect empirical relations between variables of interest when disequilibrium occurs following an exogenous shock (Graham, Hazarika, and Narasimham 2011). If non-trivial transaction costs impede a partner from rebalancing his client portfolio after the shock, a partner's busyness likely deviates from his optimum level. In such a disequilibrium setting, APB may causally influence audit quality. The Australian audit market during 2002–04 was characterized by such a disequilibrium. Shortly after the Enron and Arthur Andersen failures, auditors in Australia were subject to increased regulatory oversight, the introduction of mandatory partner rotation, additional audit work due to the new corporate governance rules, and the imminent implementation of International Financing Reporting Standards (IFRS). In this out-of-equilibrium setting, we find that APB is negatively associated with the propensity to issue GCOs but not with audit quality proxies based on client earnings management. Our further analyses from the sub-periods that precede and follow this disequilibrium period suggest that the negative effect of APB on GCO issuance propensity is specific to the 2002–04 period. Moreover, this negative relationship is driven by the presence of more clients in the busy season and industries other than the incumbent client's industry in the partner's portfolio, which reinforces the causal interpretation that undermined audit quality is caused by the lack of attention due to time pressure faced by a partner. Evidence from a period characterized by disequilibrium thus suggests that audit quality is impaired by APB only when it is not optimally chosen by partners after the shock to their busyness.

Our unique contribution to the auditing literature is the finding that APB's effects on audit quality hinge on whether APB is in equilibrium. The importance of the equilibrium condition in interpreting the empirical relations between accounting choices and organizational performance has long been recognized in financial reporting research (e.g., Larcker, Richardson, and Tuna 2007) and managerial accounting research (e.g., Ittner and Larcker 2001). However, research on how auditor attributes influence audit quality in equilibrium remains scarce. Although we focus on APB in this paper, our findings are germane to research on other auditor attributes. In linking an auditor attribute to auditor performance, the following questions must be considered: Is the auditor attribute of interest a choice variable? What is the equilibrium if the auditor or client makes an optimal choice? What dynamics may cause the choice to move away from equilibrium? Answering these questions is not only conceptually important in developing hypotheses but also empirically desirable in designing research to detect the association between auditor attributes and audit outcomes.

In addition to its theoretical importance, understanding APB also has normative implications. To the extent that the relation between APB and audit quality is causal, then APB should serve as a convenient indicator of audit quality for use by regulators, investors, clients, and other interested parties. For example, regulators should scrutinize companies audited by busier partners and audit firms should reduce APB when attempting to improve their performance. Indeed, drawing policy implications from their findings of a negative relation between APB and audit quality, both Gul et al. (2014) and Sundgren and Svanström (2014) suggest that it would be desirable to place an upper limit on the number of audits administered by a partner to improve audit quality.[4] Yet around the world, to our knowledge, India is the only country that has such a regulatory policy on APB.[5] In addition, our search on Google did not yield any news articles discussing the APB issue, which suggests that auditor busyness is not perceived to be a threat to audit quality by practitioners.[6] More importantly, our findings suggest

[4] For example, Gul et al. (2014, 7) argue that: "[T]hese findings have important implications for regulators who are considering placing a cap on the number of client assignments for an auditor." Sundgren and Svanström (2014, 18–9) conclude that: "Our findings imply that regulators should pay attention to these quality concerns and evaluate whether an upper limit on the number of assignments held would be an effective way of improving audit quality."

[5] In India, sections 224(1B) and 224(1C) of the Companies (amendment) Act 1974 place a limit of 20 public company clients that a partner can audit in a year. The self-regulation of APB occurs in other countries within the confines of general legislative and professional pronouncements. In Australia, paragraph 29 of the legally-binding Auditing Standard ASQC 1 *Quality Control for Clients that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements* is most relevant, but it does not explicitly regulate APB. Before the enactment of ASQC 1 in 2010, Australia had a professionally-binding quality control pronouncement beginning in 1982, with requirements similar to those in ASQC 1. Similar provisions to paragraph 29 of ASQC 1 are contained in paragraph A15 of the International Standard on Auditing *220 Quality Control for an Audit of Financial Statements*.

[6] We searched for keywords such as "audit partner", "auditor", "busyness", "busy", and their combinations and browsed up to 500 search results. In sharp contrast, anecdotal evidence suggests practitioners' concern with lower monitoring quality of

that, at least in Australia, there is no "smoking gun" evidence that higher APB impairs audit quality. Although APB is negatively related to audit quality during the disequilibrium period of 2002–04, this negative relationship disappears when equilibrium is restored, which is consistent with Ball's (2009) observation that market mechanisms work reasonably well in detecting and correcting problems that emerge in turbulence. To be socially efficient, a necessary condition for regulation is market failure (Breyer 1982). The lack of evidence regarding market failure with respect to APB thus does not support policy recommendations on curbing the number of audits performed by an audit partner. Instead, by changing the equilibrium level of APB, regulatory intervention would likely create disruption and lead to unintended consequences. For example, if certain partners who specialized in auditing a larger number of clients are banned from auditing too "many" clients, then those that have been focusing on a smaller number of clients are likely to be overloaded with too many audits, which will lead to lower audit quality. Capping the number of audits may also reduce audit partners' incentives to develop their expertise or reputation to serve a relative larger clientele according to their capabilities.

In the next section, we develop the hypotheses for APB and audit quality. Section 3 covers the research methodology, followed by a description of the data and sample statistics in Section 4. Empirical results are presented in Section 5. Section 6 concludes.

2. Hypothesis Development

Beneficial effects of APB

DeAngelo (1981) suggests that an auditor with a larger client portfolio has a stronger incentive to be more independent—and to truthfully report any irregularities discovered—because of the greater potential loss of quasi-rents to be earned from a larger client base if the auditor is caught "cheating". Although prior studies have typically used her theory to explain the difference in audit quality between Big N and non-Big N firms (see Francis 2004 for a review) or a more general relation between audit firm size and audit quality (e.g., Chan and Wu 2011), it is not limited to the audit firm as the unit of analysis. For example, Choi, Kim, Kim, and Zang (2010) use DeAngelo's (1981) theory to explain the higher audit quality of large audit offices. It may also be reasonable to expect that, at the audit partner level, a busy partner should be more independent and his audit quality should be of higher quality as a consequence. In fact, this same argument is made by DeAngelo (1981,

(Footnote continued.)
busy directors and institutional investors also show great interest in this issue (e.g., Fich and Shivdasani 2006).

191–192): "[T]he greater the number of clients, the less the wealth of the partner-in-charge of a given client depends on retaining that client. Therefore, the greater is the probability that he will report a discovered breach."

Although APB is modeled as given in DeAngelo (1981), other studies provide clues to why busyness differs across partners. The auditor specialization literature suggests that auditors gain experience/knowledge and thus build their expertise by performing more audits; as a result, expert auditors typically have a larger clientele (e.g., Craswell, Francis, and Taylor 1995). Therefore, higher APB likely represents a partner's expertise and thus higher audit quality. This view is also consistent with the director reputation hypothesis. Fama (1980) and Fama and Jensen (1983) hypothesize that market forces motivate outside directors to develop their reputations as vigilant monitors. It follows that having multiple directorships signals a director's competence, and a director's human capital for monitoring quality can be assessed by the number of directorships held.[7] Similarly, APB might be the outcome of a market for audit partner talent. Busier partners are likely to be more competent and better able to provide a higher level of audit assurance than less-busy counterparts.

Detrimental effects of APB

The attention that humans devote to a task reduces the attention that can be devoted to other tasks because of limits in our ability to process information and perform multiple tasks simultaneously (Kahneman 1973). Recognizing that "attention is a major scarce resource" (Simon 1978, 13), researchers use the Limited Attention Theory (LAT) to explain the quality of actors' decision-making under busy situations. LAT is supported by empirical evidence from a variety of tasks, including those of pharmacists (Svarstad, Bultman, and Mount 2004), nurses (Fujita, Yoshioka, and Suzuki 2004; Thompson et al. 2006), university faculty (Boice 1989), bank employees (Pugh 2001), supermarket cashiers (Rafaeli and Sutton 1990), and the processing of earnings information by equity investors in the accounting and finance literature (Hirshleifer and Teoh 2003; Hirshleifer, Lim, and Teoh 2009). LAT has also been applied in modeling managerial behavior in an organization (e.g., Radner and Rothschild 1975; Geanakoplos and Milgrom 1991; Gifford 2005). A common theme in these models is that when a manager must allocate attention across multiple projects or activities, attention inevitably limits his/her span of control because attention demands time.

With respect to oversight quality in the governance setting, the busyness hypothesis in the director

[7] Gilson (1990), Shivdasani (1993), Brickley, Linck, and Coles (1999), and Coles and Hoi (2003) find results consistent with the reputation hypothesis. Higher director reputation might also have occurred as the result of more experiential diversity, such as external contacts or working across different industries (Mace 1986; Keys and Li 2005).

literature suggests that holding too many directorships is detrimental to the effectiveness of corporate governance because such directors devote insufficient time and effort to monitoring managers. Findings from Core et al. (1999), Shivdasani and Yermack (1999), Fich and Shivdasani (2006), and Ahn, Jiraporn, and Kim (2010) are consistent with this "busyness hypothesis". By the same token, a higher busyness level reduces the amount of an audit partner's attention devoted to the average client in his portfolio. Although a partner can increase the size of his audit team and delegate tasks to subordinate staff, these steps may not solve the limited attention problem faced by a busy partner because supervising and coordinating the activities of subordinates also calls for additional attention. Thus, higher APB may lead to a partner's suboptimal behavior in audit judgment and decision making. Consistent with this reasoning, survey and experimental evidence demonstrates that time pressure leads to dysfunctional auditor behavior (McDaniel 1990; Malone and Roberts 1996; Otley and Pierce 1996; Willett and Page 1996).[8]

APB in equilibrium

Similar to the line of thinking in Simunic (1980), we expect an audit partner to undertake additional audits until the marginal benefits from doing another audit equal the marginal costs. The enhanced independence or reputation associated with a larger clientele should be translated into higher audit fees. A partner also benefits from a larger clientele in the form of higher personal income because audit partner compensation is linked to the size of clientele or number of clients (Knechel, Niemi, and Zerni 2013). The downside of higher APB is the smaller amount of attention devoted by the partner to his average audit work, which impairs audit quality and ultimately damages the partner's reputation capital. Because reputation is a key component of undertaking effective audit work (Watts and Zimmerman 1983), loss of reputation is costly to the auditor: auditors are more likely to lose clients when audit quality is questioned by the market. This result is observed not only in the U.S. (Blouin, Grein, and Rountree 2007) but also in Germany (Weber, Willenborg, and Zhang 2008) and Japan (Skinner and Srinavasan 2012). Whereas these studies are based on audit firm-level data, Carcello and Li (2013) show that the importance of reputation to the partners' human capital is even more prominent in a regime in which engagement partners sign audit reports.

Because a partner risks losing his future quasi rents by undertaking excessive audits, he must trade off the

[8] Nevertheless, it is worth noting that audit partners typically have more resources at their command to assist them in their work than the average director. Another important difference between partner and director busyness is that directors are employed full time in other occupations whereas auditing is the partner's occupation. Such differences suggest that the effect of busyness on auditors' work might be weaker. We thank the editor and a reviewer for pointing out these differences.

costs and benefits of additional audits in forming his optimal client portfolio. Is it possible to observe a causal relation between APB and audit quality in equilibrium? This question is familiar in corporate governance research. Demsetz and Lehn (1985) argue that the problems caused by the separation of ownership and control vary across firms and each firm evolves its unique ownership structure to solve such problems and maximize its performance; because all firms make optimal decisions, in equilibrium, ownership structure and performance are unrelated in a cross-section of firms. Following this thought, Larcker and Rusticus (2007) demonstrate that the cross-sectional data can yield literally *any* possible relation between ownership and firm performance when firms choose ownership optimally; however, absent a theory regarding how firms optimize ownership structure, such a cross-sectional relation is *not* causal. The importance of equilibrium conditions in interpreting empirical findings has been considered in studies on other types of corporate governance choices (Hermalin and Weisbach 2003).

Therefore, to interpret the cross-sectional association between APB and auditor performance or audit quality, it must be determined whether the function that links APB to audit quality is the same across different audit partners. We believe that this function is not the same. Individual characteristics affect judgment and decision making. Auditing involves professional judgment made by the individuals who perform the audits. The long-standing audit judgment and decision-making literature collectively shows that the individual characteristics of auditors affect their performance (Nelson and Tan 2005). This reasoning has been corroborated by archival evidence—audit partners exhibit heterogeneity in audit fees (Taylor 2011), audit quality (Gul et al. 2013), client composition (Amir, Kallunki, and Nilsson 2014), and industry expertise (Zerni 2012; Goodwin and Wu 2014). The heterogeneity among audit partners suggests that mapping APB to audit quality also varies by partner personal attributes. For example, auditor performance is significantly influenced by individuals' knowledge and problem-solving skills when audit task complexity increases (Bonner and Lewis 1990; Libby and Tan 1994), which indicates that partners differ in their ability to cope with the complexity associated with auditing multiple clients. Although we are not aware of archival research on how auditors determine the number of clients in their portfolios, Cahan, Jeter, and Naiker (2011) provide a clue to this question: among industry specialist auditors, some pursue a strategy of auditing a large number of clients whereas others follow a strategy of focusing on a small number of large clients. Their findings suggest that APB is an outcome of strategic choices made by partners according to their comparative advantages in auditing multiple clients.

In sum, partners with a larger number of clients might differ from others in that their marginal costs in undertaking additional audits are lower because of their superior ability or specialization in handling a large number of audits. It follows that, in equilibrium, higher APB does not necessarily result in lower audit quality. Admittedly, in the real world, some partners' APB could deviate from the optimal level such that audit quality is impaired by excessive audits. Nonetheless, given the market forces against dysfunctional auditor behavior (Ball 2009), we expect such a deviation to be random and not to have a systematic effect on audit quality. Because the directional prediction for the audit quality-APB relation is unclear, our first hypothesis is stated in the null form:

HYPOTHESIS 1**.** *In general, there is no cross-sectional relationship between APB and audit quality.*

APB out of equilibrium

The previous discussion does not indicate that we have no chance to observe a causal relation between APB and audit quality. When there is an exogenous shock and transaction costs hinder audit partners' speedy rebalancing of their client portfolios, APB is pushed out of equilibrium and does not represent partners' optimal choices made according to their attributes or specialization strategies. It follows that the causal relation between APB and audit quality can be empirically observed in such an out-of-equilibrium scenario (Coles et al. 2008; Graham et al. 2011).

We argue that one such disequilibrium period in Australia occurred from 2002 to 2004. In response to the high-profile accounting scandals and corporate collapses in the U.S. and other countries in the early 2000s, Australian securities regulators increased scrutiny and introduced new regulations. In July 2002, the Australian Securities and Investments Commission announced an increase in its corporate surveillance (Buffini 2002), and its media releases highlighted GCO issuance as a priority for its corporate surveillance activities.[9] In September 2002, the Australian government speeded up the process of adopting IFRS by endorsing January 2005 as the changeover date to IFRS in Corporate Law Economic Reform Program 9 (Corporate Disclosure: Strengthening the Financial Reporting Framework, 102). Thus, by the 2002 reporting season, auditors were aware that IFRS had to be used beginning in January 2005. In 2003, the Australian Stock Exchange (ASX) issued a set of corporate governance principles and recommendations, including those for establishing and managing a sound internal control system. Beginning in the year 2003, listed entities were required to describe the nature of their compliance with these recommendations in their annual reports, and audit partner rotation became professionally binding.

The shock of the corporate collapses of the early 2000s and the subsequent changes were largely exogenous at the auditor level. However, they could have caused partners' busyness to deviate from the

[9] See http://www.asic.gov.au/asic/ASIC.NSF/byHeadline/Auditors%20resources#1.

optimum level because the unexpected extra workload was significant. For example, auditors might be asked to assist clients to improve internal control systems to comply with new regulations. Following the mandatory rotation rules, the partner's client portfolio should be realigned. In this process, it takes time for a partner to negotiate with new clients and develop expertise to audit the new clients. Moreover, because adoption of the IFRS also required a large amount of extra auditor effort (De George, Ferguson, and Spear 2013), the partners also must adjust their optimum busyness level before the transition.

To mitigate the impact of these changes, audit firms/offices can increase the audit team size, employ more advanced audit technologies, and even add more partners. However, audit inputs may not be a perfect substitute for a partner's knowledge of the client (Benito and Paz-Ares 1997), let alone the dollar costs that deter audit firms/offices from increasing these inputs. More importantly, adjustments are not likely to be prompt because transaction costs are not trivial. For example, it takes time to recruit audit staff with the requisite skills and to train them. In a resource expansion decision, the audit firm/office must factor in the possible idle capacity in the future if the increase in workload is temporary. When new partners are added, renegotiation over the allocation of residual claims among the partners could become a lengthy process.

Therefore, following the exogenous shock, audit partners' busyness level likely deviates from the optimum and then is rebalanced—but slowly because of transaction costs—toward the new optimum. If the influences of the shock are pervasive across auditors and the rebalancing is sufficiently lengthy, then APB is not entirely a choice variable but becomes predetermined to some extent. It follows that causality can be more confidently assigned to the observed relationship between ABP and audit quality during a period of disequilibrium (Coles et al. 2008; Graham et al. 2011). We choose the year 2002 as the beginning of this disequilibrium period because Australian regulators stepped in shortly after the scandalous events of 2001–02.[10] Because most auditors should have gradually adjusted their busyness to an appropriate level by 2005, when the IFRS is implemented, the year 2004 is chosen as the final year of the disequilibrium period. Our second hypothesis is stated in the alternative form:

HYPOTHESIS 2. *During the disequilibrium period of 2002–04, there is a negative relationship between APB and audit quality.*

[10] This reasoning is also consistent with Ye, Carson, and Simnett (2011), who study the effects of auditor-client relationship bonds on auditor independence in 2002, the first post-Enron year characterized by increased scrutiny of such relationships.

3. Methodology

Experimental and audit partner/office/firm attribute variables

To test our hypotheses, we measure the experimental variable, *LBPAR*, as the natural logarithm of the number of listed clients in an audit partner's client portfolio in a year. We take the logarithm because unlogged APB (*BPAR*) is right skewed (skewness stat. = 2.756), although inferences based on *BPAR* are quite similar. We do not tabulate but discuss these results in the text if they are different from those of *LBPAR*. We control for partner-specific attributes that might be correlated with *LBPAR* and the audit quality measures, as follows.

The time spent by the partner per client likely varies by the scale of his busyness. The natural logarithm of the sum of the client sales for each partners' client portfolio (*SIZEPAR*) is included in regressions to control for scale effects.[11] Although Karjalainen (2011) and Gul et al. (2014) report no relationship between scale variables and earnings quality, Gul et al. (2014) find that scale is negatively related to the propensity to issue GCOs. We therefore do not have a directional prediction on the coefficient sign of *SIZEPAR*. In addition to the number of clients in his portfolio, a partner's independence is also determined by the relative importance of each client (DeAngelo 1981). *ICPAR* is measured as the client's audit fee divided by the sum of the audit fees from all clients of a partner-year. Although higher *ICPAR* might suggest stronger client-partner economic bonding and thus lower audit quality, the potential reputation loss in the event of audit failure is also larger for more influential clients (Reynolds and Francis 2000). Therefore, the relationship between *ICPAR* and audit quality is an empirical issue. *AGEPAR* is the partner's age, measured at the client's year-end. Sundren and Svanström (2014) report a negative relationship between partner age and audit quality and we expect the same relation to hold in our data. An indicator for female partners, *FEMPAR*, is included because females are better monitors in the corporate boardrooms than are males (Adams and Ferreira 2009), which suggests a positive relationship between *FEMPAR* and audit quality. *EXPPAR* is an indicator for industry experts, defined as partners who are the first-ranked auditor by market share in an industry-city combination for the year. We expect a positive relationship between *EXPPAR* and audit quality, which is consistent with Karjalainen (2011). *TENPAR* is the number of consecutive years that the incumbent partner has audited the client, capped at five.[12] As a result of the mixed evidence on how partner tenure influences audit quality (e.g., Carey and Simnett 2006; Chen et al. 2008),

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[11] We thank the editor and reviewers for pointing this out.

[12] We have partner data that date back to the year 1995 and our earliest sample year is 1999. The maximum tenure of a partner in 1999 is thus 5 years in our dataset. To measure the partner tenure variable on an equal footing over the entire sample period, we set a maximum value of 5 on this variable.

we do not predict the coefficient sign of *TENPAR*.[13]

Following previous studies, we also control for the following audit office/firm-level variables. Industry specialist audit offices employ audit staff with greater industry knowledge and have stronger incentives to maintain their reputations (Reichelt and Wang 2010). *EXPCN* is an indicator variable for offices that are first-ranked in an industry-city by market share and are from the first-ranked audit firms by market share in the industry nationally for the year. Audit work from large offices is of higher quality because of their greater in-house experience (Francis and Yu 2009). We measure audit office size (*SIZEOFF*) as the natural logarithm of the total audit fees paid to the audit office during the year. Both *EXPCN* and *SIZEOFF* are expected to be positively related to audit quality. Because large audit firms have stronger incentives to maintain their reputation (Francis and Wilson 1988), we include a *BIG6* indicator variable, which equals one if the audit firm is a Big 4 firm, BDO, or Pannell Kerr Forster, and zero otherwise, to control for the quality differences attributed to audit firm reputation.[14] *TENFIRM* is the number of consecutive years that the incumbent audit firm has audited the client, capped at five. According to Johnson, Khurana, and Reynolds (2002), *TENFIRM* should be positively related to audit quality.

Audit quality measures

To enhance our comparability with contemporaneous studies on APB, we measure audit quality by discretionary accruals (DAC), beating zero profit by a small amount, the propensity to issue GCOs, and GCO accuracy, that is, whether GCOs are issued to clients that subsequently went bankrupt. As noted by DeFond and Zhang (2014), these are output-based audit quality measures and are well suited for studying the supply of audit services. Moreover, these measures complement one another and evidence based on different measures "provides a more comprehensive understanding of the effect on audit quality" (DeFond and Zhang 2014, 31). Specifically, GCO issuance is directly under auditors' control and represents strong evidence regarding audit quality; however, GCOs are exclusively issued to financially distressed clients and this measure does not capture subtle variation

[13] We have considered all measurable partner-specific attributes except partner experience, which is measured as the number of years the partner has been in practice. The experience variable is strongly correlated with partner age and is redundant in that its coefficients are always insignificant in the regressions. We chose to drop the experience variable but include the partner age variable for comparability with Sundgren and Svanström (2014).

[14] By the number of clients, BDO and PKF rank just after the Big 4/5 in each of the years from 2000 to 2010. For this time period, the aggregate Big 4/5 market share in terms of the number of clients is about 52 percent and BDO and PKFs' market shares total about 13 percent, whereas the market share of the Big 4/5 in the U.S. is about 59 percent.

in audit quality. As for DAC and benchmark beating, although they are subject to measurement error and even lack of consensus regarding measurement, these measures capture within-GAAP manipulation and quality variations for a large number of firms.

Discretionary accruals

The first audit quality proxy is discretionary accruals, which is used in Australian studies by Monem (2003) and Carey and Simnett (2006). For each GICS industry group and year combination with at least 20 clients, we estimate the following modified Jones (1991) model as suggested by Kothari et al. (2005):

$$TAC_t/Assets_{t-1} = b_1(1/Assets_{t-1}) + b_2(\Delta Sales_t - \Delta AR_t)/Assets_{t-1} + b_3 PPE_t/Assets_{t-1} + b_4 ROA_{t-1} + e, \quad (1)$$

where TAC_t is total accruals, or net income less net operating cash flows; $Assets_{t-1}$ is lagged total assets; $\Delta Sales_t$ is the change in operating revenue; ΔAR_t is the change in net accounts receivable; PPE_t is gross property, plant and equipment; and ROA_{t-1} is lagged net income divided by lagged total assets. The *DAC* variable is estimated as the regression residual, e, from the above model. *DAC* is trimmed at its 1st and 99th percentiles to alleviate the impact of extreme values on the results.

To examine the relationship between APB and discretionary accruals, we estimate the following OLS "cross-sectional" model (client and year subscripts are omitted):

$$DAC = \alpha + \beta LBPAR + \gamma X^A + \delta X^C + \kappa_j + \lambda_t + \varepsilon, \quad (2A)$$

where X^A are the audit partner/office/firm attribute variables, as defined above. X^C are the client attribute variables that may affect *DAC*, and their definitions, the expected coefficient signs, and supporting literature are detailed in the Appendix. Industry and year indicator variables, denoted by κ_j and λ_t, respectively, are included to control for industry and time effects on estimated *DAC*. Throughout the paper, we cluster regression standard errors by client and year, as per Gow et al. (2010).

As noted above, partners with high and low APB might also differ with respect to unobservable dimensions such as generic ability; thus, comparing audit quality between partners with different APB may capture the effect of these unobservable differences rather than the effect of APB. One approach to this potential problem of omitted variable bias is to use the method of instrumental variables and two-stage least squares regression, but we are not aware of any valid and measureable instrumental variable. Therefore, we also estimate a "fixed-effect" model by adding partner fixed effects to the "cross-sectional" Model (2A). To the extent that partner-specific attributes such as ability are time constant and captured by these partner fixed effects, the "fixed-effect" model corrects for the omitted variable bias in the "cross-sectional" model. In light of the evidence in Gul et al.

(2013), the assumption of time constant partner attributes seems reasonable. We denote the fixed-effect version of Model (2A) as (2B) and estimate the model for a sample in which the partner should audit in at least two years.

Due to the strong and dominant incentives of firm managers to overstate earnings, audit quality is more likely to be impaired when abnormal accruals are income increasing (Nelson, Elliott, and Tarpley 2002; Kim, Chung, and Firth 2003). If busier partners are less able to constrain clients' upward earnings management, as the contemporaneous APB studies argue, then the *LBPAR* coefficient should be positive in Models (2A) and (2B). However, the equilibrium view suggests that the *LBPAR* coefficient should be close to zero in these models because of the endogenous nature of APB.

Meeting zero-profit benchmark

The second audit quality measure is the incidence of small profits, also used by Carey and Simnett (2006) in an Australia setting. A ROA histogram (not reported) using two-percentage-point bands shows that approximately 7.3 (3.8) percent of the observations in the 0 to 2 (–2 to 0) percent band, whereas a curve fitted by kernel density estimation indicates that approximately 5.5 (4.6) percent of the observations are expected in that band. These statistics suggest that Australian clients manage earnings to avoid small losses. To examine the relationship between APB and the incidence of small profits, we estimate the following logistic regression:

$$SP = \alpha + \beta LBPAR + \gamma X^{A} + \delta X^{C} + \kappa_j + \lambda_t + \varepsilon. \qquad (3A)$$

Consistent with Caramanis and Lennox (2008), we define *SP* as an indicator for cases in which reported ROA (net income divided by lagged total assets) is between zero and 0.02 *and* unmanaged net income is negative *and* *DAC* are positive. Other variables are defined as those defined in Model (2A). We denote the fixed-effect counterpart to Model (3A) as (3B). The incidence of a small profit suggests that the auditor fails to constrain client's earnings management to beat the benchmark and thus represents lower audit quality. However, as explained earlier, the expected coefficient on APB depends on the equilibrium condition: if APB is exogenously determined and high APB impairs audit quality, then it is to be expected that its coefficients would be positive in Models (3A) and (3B); however, if APB is an equilibrium outcome, then its coefficients should be indistinguishable from zero in these models.

Going concern reporting

Consistent with Carcello and Neal (2003), we examine first-time GCOs. The following logistic regression model is estimated to show the relationship between APB and GCO issuance:

$$GC = \alpha + \beta LBPAR + \gamma X^{A} + \delta X^{C} + \kappa_j + \lambda_t + \varepsilon, \quad (4A)$$

where *GC* equals one if the client receives a GCO from the auditor in the current year and a clean audit opinion in the previous year, and zero otherwise. Auditor control variables are defined as above and client control variables are shown in the Appendix. The fixed-effect counterpart of Model (4A) is denoted as (4B). Although the first-time GCO is more informative of audit quality, Gul et al. (2014) do not restrict their analysis to first-time GCOs. For comparison with Gul et al. (2014), we also examine all GCOs (i.e., GCO is not conditioned on audit opinion types in the prior year) with the following logistic model:

$$GCA = \alpha + \beta LBPAR + \gamma X^{A} + \delta X^{C} + \kappa_j + \lambda_t + \varepsilon, \quad (5A)$$

where *GCA* equals one if the client receives a GCO from the auditor in the current year, and zero otherwise. The control variables of Model (5) are identical to those in Model (4), except that we also include *PRIORGC*, which is an indicator for clients that receive GCOs in the prior year, to control for the effect of prior modifications on current audit opinions. Model (5A)'s fixed-effect counterpart is denoted as (5B). In issuing a GCO, the auditor must objectively evaluate the client's financial performance. If a partner fails to exercise due care because of high APB, then the coefficients on *LBPAR* should be negative in Models (4A), (4B), (5A), and (5B). Instead, the equilibrium view suggests that APB may not be related to the propensity of issuing GCOs and its coefficients should be insignificant. Consistent with Carey and Simnett (2006), we estimate these GCO regressions on samples of distressed clients, that is, clients that report negative net income and negative net operating cash flows in the current year.

To test whether different levels of APB influence the Type II errors in going concern reporting, we estimate the GCO model on a sample of clients that go bankrupt. Following Jones and Hensher (2004), a bankrupt client is defined as one that enters voluntary administration, receivership, or liquidation within 12 months of the audit report date.[15] The Australian pronouncement ASA 570 *Going Concern* specifies 12 months

[15] Voluntary administration provides the company with breathing space so that the company's future can be decided. The appointed administrator takes control of the company and reports to creditors whether (1) the administration should end and control return to the directors, (2) a deed of company arrangement by which settlement is reached with creditors should be approved, or (3) the company be wound up (liquidated). A receiver is appointed by a secured creditor or the court when a company is in financial distress. The receiver takes control of some or all of the company's assets and then liquidates them to pay out the secured creditor's claim and returns the remaining assets to the director's control. Liquidation is the process by which a company is wound up. Unless the company is liquidated, clients can continue after "bankruptcy" and can be "bankrupt" again. Eleven (about 5 percent) of bankrupt clients are "bankrupt" twice in our sample. The inferences from the

from the audit report date as the period over which the auditor must consider the going concern assumption. The following logistic regression is estimated:

$$GCB = \alpha + \beta LBPAR + \gamma X^A + \delta X^C + \kappa_j + \lambda_t + \varepsilon, \qquad (6)$$

where the dependent variable *GCB* equals one if the client receives a GCO, and zero otherwise. We include all the control variables as in Model (5A), except that we add *BKTLAG* and *PROPNAS*, following Geiger and Rama (2006) and Sharma and Sidhu (2001), respectively (see the Appendix for definitions of these variables), and we omit *EXPCN*, *TENFIRM*, *VOLAT*, *MB*, *BUSYSEAS*, *COMPET*, *RETURN*, and *CASH* because they are not supported in the prior literature. However, inclusion of these omitted control variables makes no difference with respect to the inferences about *LBPAR*. As discussed above, we employ the partner fixed effects to control for the unobservable partner attributes on audit quality. However, the sample size for estimating the fixed-effect model is too small to be feasible. To increase the sample size, we employ an alternative sample of clients that file for bankruptcy within two years of the audit report date. Because ASA 570 specifies a 12-month period for auditors to consider the going concern assumption, tests based on this augmented sample is not on the Type II reporting errors and the results are only suggestive. We refer to these tests as "within-two-years accuracy" and the corresponding regression models as (7A) and (7B), which are not shown in the text to save space. For Models (6), (7A), and (7B), if APB increases Type II error rates or reduces accuracy, then the coefficients on *LBPAR* should be negative.

4. Data and Sample Statistics

Using the Morningstar *FinAnalysis* database, we begin with an initial sample of 18,373 ASX listed client years audited by Australian audit firms during the 1999–2010 period. All audit-related data are obtained from clients' electronic copies of annual reports downloaded from the *FinAnalysis*, the ASX, or the clients' websites, except that audit partners' age data are retrieved from the online enquiry system of *Australian Financial Review* (http://tools.afr.com/asic/search/person/person_extract.aspx).[16] Our auditor attribute variables, including the key experimental variable *LBPAR*, are measured using all 18,373 client years. Stock market data are obtained from the *Datastream* database, and all other data are retrieved from *FinAnalysis* or collected from clients' annual

(Footnote continued.)

regressions regarding APB are identical if these clients are deleted from the sample.

[16] According to Australian Corporations Act, the audit report should be signed in the names of the audit partner and the audit firm. From 1999 to 2010, about 0.2 percent of audit reports identify more than one partner. For such cases, we use the first-named partner, reading left to right or top to bottom.

reports. For the earnings management sample, clients in the financial industries are excluded because their accrual process differs significantly from industrial clients, which reduces the sample to 16,919 client years. After excluding client years with missing data, the sample comprises 8,902 client years.[17] The GCO test sample is based on 8,767 client years that report a negative net income and a negative operating cash flow in the current year.[18] After excluding clients with missing data for the control variables, the GCO test sample comprises 6,558 client years. The samples for the tests of Type II errors and accuracy of GCO reporting comprise bankrupt clients. By examining all ASX announcements up to March 31, 2012, we identify a total of 238 bankrupt client years. After dropping 11 observations with missing data, the final sample size is 227 and 465 client years for the Type II error and within-two-years accuracy analyses, respectively.

For the fixed-effect *DAC* regression (Model 2B), we require that a partner should appear in the data for at least two years, which results in a sample size of 8,757 client years. For the fixed-effect logistic regressions, we further require that a partner should have variation in the dependent variable (otherwise the partner fixed effects cannot be estimated due to the "complete separation" problem with the conditional maximum likelihood method). In these fixed-effect regressions, the sample sizes total 3,390 for *SP*, 5,440 for *CG*, 5,777 for *GCA*, and 186 for *GCB*.

Figure 1 about here

Figure 1 shows the mean APB for each of the Big 4 firms and the non-Big 4 firms as a group in Australia. There are meaningful cross-sectional variations in APB within the Big 4 audit firms and between the Big 4 and the non-Big 4 firms. The time-series variations in APB are also substantial, particularly for the non-Big 4 firms. Panels A and B of Table 1 report the descriptive statistics for the variables used in the multivariate tests for each cross-sectional sample. The *DAC* variable has a mean of about –0.026 and a standard deviation of approximately 0.214, as Panel A shows. The mean of the variable *SP* indicates that approximately 2.6 percent of the client years have small profits and the mean of the variable *GC* (*GCA*) indicates that approximately 12 (26) percent of distressed client years have a first-time GCO (GCO). The mean of partner age (*AGEPAR*) is approximately 45 years, which is close to the mean of approximately 48 years reported in Sundgren and

[17] The sample attrition occurs mainly because of (1) missing lagged variables for new listings (n = 1,666) and (2) missing current or lagged sales or PPE, most of which are mining companies in the early exploration stage (n = 5,028). We also lose 984 observations from industry years with less than 20 valid observations for fitting the modified Jones model.

[18] We also repeat our analysis on a GCO sample where client years report a negative net income *or* a negative operating cash flow. The results are qualitatively the same as those reported below.

Svanström (2014).

Table 1 about here

Panel A also reports the within-partner intraclass correlation coefficients (ICCs) for the control variables in the earnings management fixed effects sample (N = 8,757). Higher ICC values indicate lower within-partner variation. In fixed-effect regressions, low within-group variation can result in higher standard errors and imprecise estimates; thus, the coefficients of variables with higher ICCs are less likely to load significantly, *ceteris paribus* (Beck and Katz 2001; Allison 2005). We use the ICC statistics to determine whether a variable's insignificance is due to its low within-partner variation or due to its lack of economic importance for audit quality. Variable *BIG6* has the highest ICC, which is unsurprising because partners rarely change firms; *SIZEOFF* has the second highest ICC; and it is followed by *AGEPAR*. The ICC value of 0.80 for *LBPAR* suggests that low within-partner variation might lead to its coefficient becoming insignificant in the fixed-effect regressions. We mitigate this concern by separating APB into two variables and re-estimating the models in additional tests. The mean of 0.520 for *GCB* in Panel B indicates that 52 percent of bankrupt clients receive a GCO, which is close to the percentage of 51 percent reported in Sharma and Sidhu (2001) for the 1989–1996 period in Australia.

Table 2 about here

Panel A of Table 2 reports the Pearson correlation coefficients for the variables in the earnings management sample. The correlation between *LBPAR* and discretionary accruals (*DAC*) is negative and significant, and the correlation is insignificant between *LBPAR* and the small profits (*SP*) variable. The highest correlation occurs between *LBPAR* and *ICPAR* ($\rho = -0.787$), although multicollinearity does not seem to be a problem in the additional tests reported below. Consistent with Sundgren and Svanström (2014), older partners are more likely to work in smaller audit firms, as indicated by the negative correlation between *BIG6* and *AGEPAR* ($\rho = -0.127$). All controls are correlated (at the .01 level) with *LBPAR* except for *BIG6*, *SALEGRO*, *SALEVOL*, *BRUPT*, and *MB*. To save space, Panels B and C only report the correlations for the additional variables used in the going concern reporting tests. Although all GCOs (*GCA*) are negatively correlated with *LBPAR*, first-time GCOs (*GC*) and GCOs issued to bankrupt clients (*GCB*) are not reliably correlated with *LBPAR*. By contrast, Sundgren and Svanström (2014) report a negative correlation of –0.069 between *GCB* and *BPAR*.[19] In sum, the correlations between *LBPAR* and the dependent variables are not consistent with a negative

[19] A possible reason for this difference is that Sundgren and Svanström (2014) examine small and medium-sized clients. For our sample, the correlation coefficient between *BPAR* and *GCB* is –0.079 for clients with sizes below the sample median of

relation between APB and audit quality, except for that with *GCA*. The multivariate regression analysis in the next section provides more robust evidence on how APB is related to various audit quality measures.

5. Empirical Results

Main Tests

The four columns of numbers on the left side of Table 3 show the results from estimating the cross-sectional (2A) and fixed-effect (2B) models of *DAC*. The *LBPAR* coefficient is negative and significant at the .05 level in model (2A), which indicates that busier partners are not associated with more income-increasing earnings management. Given the client's dominating incentives of managing earnings upward and the auditor's primary concern with income-increasing earnings management (e.g., Nelson et al. 2002; Kim et al. 2003), this evidence does not support the argument that higher APB impairs audit quality. Moreover, in Model (2B), where we control for partner fixed effects, the coefficient on *LBPAR* becomes insignificant (p = 0.259). The untabulated F-test for the joint significance of the partner fixed effects is 1.144 (p = 0.007), which is consistent with the time-invariant partner attributes omitted from model (2A) explaining *DAC*. Therefore, the negative coefficient of *LBPAR* in Model (2A) is at least partly driven by some unobservable partner attributes that are correlated with APB, which casts doubt on the causal relation between APB and accrual-based earnings management. Among the control variables, we note that the *AGEPAR* and *SIZEOFF* coefficients have the expected signs and are significant at the .01 and .05 levels, respectively. Because the ICCs of these two variables are higher than that of *LBPAR* (see Table 1), the insignificant result for *LBPAR* cannot be simply attributed to its low with-partner variation. With regard to the other control variables with significant coefficients, all are consistent with expectations except for *SIZE*, *CFOVOL*, *BRUPT*, and *MB*. Chen et al. (2010) document better audit quality for more influential clients at the partner level in China as investor protection has improved in recent years, which also holds for discretionary accruals in Australia, as the negative coefficient for *ICPAR* indicates. There is no relation between *COMPET* and discretionary accruals, which is consistent with the mixed results in the literature (Boone, Khurana, and Raman 2012; Kallapur, Sankaraguruswamy, and Zang 2010).

Table 3 about here

For comparison with Karjalainen (2011), we also employ the absolute value of *DAC* (*ABSDAC*), positive *DAC* (*POSDAC*), and negative *DAC* (*NEGDAC*). Because these dependent variables are truncated at zero value,

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(Footnote continued.)
17.091 (N = 114), which is closer to their reported coefficient.

we use Tobit regressions. Untabulated results show the coefficient on *LBPAR* is positive and significant (coeff. = 0.011, p = 0.001) in *ABSDAC* regression, insignificant (coeff. = 0.014, p = 0.679) in the *POSDAC* regression, and negative and significant (coeff. = –0.074, p = 0.003) in the *NEGDAC* regression. These results are consistent with those obtained by Karjalainen (2011) using Finnish data. They also suggest that the negative coefficient on *LBPAR* in Model (2A) is primarily due to more negative discretionary accruals associated with busier partners. However, for *ABSDAC*, *POSDAC*, or *NEGDAC*, we cannot control for unobservable partner attributes by including partner fixed effects in the regressions because the fixed-effect estimators are either not obtainable or biased in the Tobit regressions.[20] With this caveat, the evidence again suggests that higher APB is not associated with more income-increasing accrual-based earnings management.

The four columns of numbers on the right side of Table 3 report the logistic regression results for tests of beating the zero profit benchmark. The *LBPAR* coefficient is insignificant in both the cross-sectional and fixed-effect regressions. However, none of the control variables with ICCs higher than that of *LBPAR* are significant, which calls into question whether the insignificance of *LBPAR* in the fixed-effect model is due to its low within-partner variation. We address this issue in the next subsection. The results for control variables in the cross-sectional regression are consistent with those in the model explaining *DAC*, except for *TENFIRM*, *SALEGRO*, *CFOVOL*, *REPLAG*, and *COMPET*. The positive coefficient for *COMPET* is consistent with Boone et al. (2012). For the fixed-effect model, the coefficients on control variables agree with those in the *DAC* fixed-effect model, except for *SALEGRO* (*AGEPAR*, *EXPCN*, *SIZEOFF*, and *CFOVOL*)*,* which is (are) negative (not significant) with respect to explaining the presence of small profits.

In the above analysis, *SP* is defined as an indicator for clients with ROA in the interval of (0, 2 percent), negative unmanaged net income, and positive *DAC*. We also repeat the analysis by redefining *SP* without conditioning on the signs of unmanaged net income and *DAC*. The untabulated results reveal that *LBPAR* has negative and significant (insignificant) coefficients in the cross-sectional (fixed-effect) model. Changing the ROA interval to (0, 1 percent) for defining *SP* does not alter our findings: the *LBPAR* coefficients are negative whether we control for the partner fixed effects or not. The overall evidence from the *SP* tests thus does not support the argument that clients have better chance to beat the zero profit benchmark when their audit partners are too "busy".

Table 4 about here

Table 4 shows the results from the going concern reporting tests. The *LBPAR* coefficient is not significant

[20] http://www.stata.com/manuals13/xtxttobit.pdf.

in any model. Of the other partner specific variables, influential clients (*ICPAR*) are more likely to receive a GCO in all but Model (4B), consistent with Chen et al. (2010). After controlling for partner fixed effects, partners with larger scale client portfolios (older partners) are more (less) likely to issue a GCO, first-time or otherwise, as indicated by the *SIZEPAR* and *AGEPAR* estimates.[21] Sundgren and Svanström (2014) reach the same conclusion for *AGEPAR* although they do not control for partner fixed effects. The ICC for *AGEPAR* is 0.90 in these two fixed-effect samples, whereas the ICC for *LBPAR* is 0.82 (0.81) in the first-time (all) GCO sample (untabulated). Because *LBPAR* has more within-partner variation than *AGEPAR,* and *AGEPAR* is highly significant in the fixed-effect models, it is difficult to attribute the insignificance of *LBPAR* to its low within-partner variation. The *FEMPAR, EXPAR*, and *TENPAR* coefficients are not significant. The significant coefficients for the other control variables are consistent with expectations except for the negative sign on *TENFIRM* in explaining first-time GCOs, and the negative and positive signs for *REPLAG* and *BUSYSEAS*, respectively, in explaining all GCOs. The positive coefficient regarding *COMPET* for all four regressions indicates higher audit quality in more concentrated markets, which is consistent with Kallapur et al.'s (2010) conclusion.

Table 5 about here

Table 5 presents the results from the tests of Type II errors and within-two-year accuracy for bankrupt clients. The *LBPAR* coefficient is not significant in any regression. Of the other partner-specific variables, older partners are less accurate within the two-year span as the negative coefficients on *AGEPAR* in Models (7A) and (7B) indicate. The positive coefficient on *EXPPAR* in Model (7B) suggests that expert partners have better within-two-year GCO accuracy after controlling for partner fixed effects. The significant coefficients for the other control variables are consistent with expectations in these regressions.

In sum, there is no evidence that APB unduly influences audit quality from the above analysis. With regard to the other partner-specific variables, a clients' influence at the partner level is generally positively associated with audit quality and partner age is generally negatively associated with audit quality. In addition, there is isolated evidence that the scale of the client portfolio and expertise are positively related to audit quality and there is no evidence that gender or tenure is related to audit quality. We next carry out additional tests to assess the robustness and sensitivity of the results.

[21] The *SIZEPAR* coefficient is marginally significant in model (5B).

Additional Tests

Econometric issues: Multicollinearity and non-linearity

LBPAR and *ICPAR* are highly correlated with a correlation coefficient of –0.787 (Table 2). As a check on whether multicollinearity unduly influences the estimates, we remove observations with *BPAR* equal to one from the samples. For such observations, *LBPAR* and *ICPAR* are perfectly correlated with one another. After removing these observations, the Pearson correlation coefficient between *LBPAR* and *ICPAR* falls from –0.787 to –0.624 in the earnings management sample (N = 7,844). Similar reductions are observed in the other samples. The coefficients on *LBPAR* are never significant in fixed-effect regressions using these new samples. We also exclude *ICPAR* from the models and re-estimate the regressions. The *LBPAR* variable is also insignificant with this specification. Multicollinearity does not appear to be the culprit of the insignificance of the *LBPAR* variable.

We control for the scale effect of partner portfolio sizes by *SIZEPAR*, which can be viewed as an alternative APB measure. Although the correlation coefficient for *SIZEPAR* with *LBPAR* is 0.221 (Table 2), there might be a concern that the effects of *LBPAR* could be partially absorbed by *SIZEPAR*. We therefore re-estimate the models treating *SIZEPAR* as the experimental APB variable and dropping *LBPAR*. As an alternative measure of partner portfolio size, we use *AFEENAFEE*, which is defined as the natural logarithm of the sum of audit and non-audit fees from a partner's client portfolio in a year. We find no evidence that *SIZEPAR* or *AFEENAFEE* are negatively related to audit quality.

To consider the possible non-linear relationship between APB and audit quality, we replace *LBPAR* by *BPAR* and the square of *BPAR* ($BPAR^2$) in the regressions. We use the unlogged variable because *LBPAR* has taken non-linearity into account in the logarithm operation. Untabulated results indicate that the coefficients on *BPAR* and $BPAR^2$ are not significant except in the "All GCOs" model, where the coefficients on *BPAR* and $BPAR^2$ are 0.042 and –0.001, respectively, and both are significant at the .10 level. This result suggests that audit quality improves with an increase in APB initially, but when APB reaches a certain point, the negative effect emerges. However, the estimates indicate that the "turning point" of the non-linear relationship is 21 clients [$-1 \times 0.042 / (2 \times -0.001)$]. For the sample used to estimate the "All GCOs" model, there are a total of 1,953 partner-years. Among these, only 40 (about 2.05 percent) have more than 21 clients in a year. Therefore, the non-linear pattern is more of a statistical artifact because it is difficult to generalize the results from these extreme cases (see Wooldridge 2005, Ch.6).

Separate APB variables

We separate the APB variable into its components by the client's industry, the number of peak-season clients or the new clients in the partner's portfolio. The purpose of this analysis is twofold. First, although we find no evidence of a negative effect of APB on audit quality, it is possible that APB impairs audit quality only in certain circumstances, for example, when APB is driven by a large number of new clients that are unfamiliar to the partner. Second, the component variables generally have lower ICCs, which mitigates the concern that the insignificance of APB variables is the result of its low within-partner variation in the fixed-effect regressions.

The first separation of APB is the number of clients in the industry of the incumbent client (*BPARIND*) and the number of clients in all other industries (*BPAROIND*). The rationale here is that auditing more clients in an industry helps a partner accumulate expertise that improves his auditing capability of the incumbent client, based on common industry features of accounting and auditing knowledge (Craswell et al. 1995). If this expertise offsets the detrimental effects of APB, then the effect of *BPAROIND* (*BPARIND*) on audit quality should be stronger (weaker). The second separation is the number of clients with a June 30 year-end (*BPARJUN*) and all other clients (*BPAROJUN*). The means for *BUSYSEAS* shown in Table 1 indicate that over 84 percent of Australian public firms have June 30 year-ends. Lopez and Peters (2011 and 2012) argue that workload compression during the audit busy season reduces audit quality, which suggests that the negative effect of *BPARJUN* on audit quality should be stronger than that of *BPAROJUN*. Finally, we separate APB into the number of new clients (*BPARNEW*) and the number of old clients (*BPAROLD*), where new clients are defined as those with a partner tenure of one. Gul et al. (2014) argue that short tenure exacerbates the detrimental effects of APB. Following this argument, we expect that *BPARNEW* is more likely to manifest its detrimental effect on audit quality than *BPAROLD*.

We measure these variables in their logged (with the letter "L" at the start of the variable name) and unlogged forms. In measuring the logged variables, cases of zero numbers are set at zero and we take the logarithm of double the number of audits for the other cases, to distinguish zero audits from one audit. For example, *LBPAROIND* is measured as $\text{Ln}(2 \times n)$, where $\text{Ln}(\bullet)$ is the natural logarithm function and n is the number of clients in industries other than that of the incumbent client (other industries); however, when n is zero for other industries, we set *LBPAROIND* equal to zero. Thus, if a partner audits no (one) clients in other industries, the value for *LBPAROIND* is zero (approximately 0.693).

The separate APB variables generally have lower ICCs than the *LBPAR* variable in the respective fixed-effect samples. There are a total of 30 new variables (5 regression models × 2 decomposed APB variables × 3 separation criteria = 30). The ICCs of 28 of these variables decrease by approximately 26 percent and the rest increase by approximately 3 percent, compared with the ICCs of *LBPAR* in the respective fixed-effect samples.[22] Despite the substantial increase in within-partner variation of these separate APB variables, untabulated regression results show that their coefficients are never significant. The most significant coefficient is for *LBPARIND* (coeff. = –0.006, $p = 0.152$) in the regression explaining discretionary accruals.

When we use the separate, unlogged APB variable, their ICCs also generally decrease vis-à-vis the *BPAR* variable in the fixed effect regressions. The ICCs of 25 of the separate APB variables decrease by approximately 33 percent, 2 increase by approximately 1 percent, and 3 do not change (at 2 decimal points), compared with the ICCs of *BPAR* in the corresponding fixed-effect samples. Using these separate variables, we observe significant results only for *BPARIND* (coeff. = –0.696, $p = 0.088$), *BPARJUN* (coeff. = –0.867, $p = 0.095$), and *BPAROLD* (coeff. = –0.817, $p = 0.098$) in the regression explaining GCO accuracy within two years. However, the significantly negative coefficients on *BPARIND* and *BPAROLD* are the opposite of the causal interpretation of busyness effect because the detrimental effect of APB should be more pronounced when a partner has more engagements in industries other than the incumbent client's industry (captured by *BPAROIND*) or more new clients (captured by *BPARNEW*). Although the marginally significant negative coefficient on *BPARJUN* is more consistent with the impairment story of APB, the lack of significant results for the corresponding logged variable indicates that a small number of extreme values of *BPARJUN* drive this result. The overall evidence from the separate APB variables casts doubt on the low within-partner variation explanation of the insignificance of APB reported in the main tests. The evidence also indicates that the influences of APB on audit quality do not appear to be pervasive, even in scenarios in which its detrimental effects are most likely to be detected.

Tenure and APB

Gul et al. (2014) report a lower (higher) likelihood of GCO issuance (reporting a small profit) for higher APB in the short-partner-tenure subsample. We conduct two tests to offer evidence on whether partner tenure affects the relationship between APB and audit quality. First, we create an indicator variable for observations where *TENPAR* is below the sample median (*SHORTPTDUM*) and interact the indicator variable with *LBPAR*. Untabulated results show that the interaction coefficients are insignificant in all the regressions. Second, for

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[22] These percentages are the medians of the percentage differences in the ICCs between the new variables and *LBPAR* for the respective fixed-effect samples. Recall that the ICC of *LBPAR* is 0.80 for the *DAC* test. Untabulated statistics show that the lowest (highest) ICC for *LBPAR* of 0.76 (0.83) occurs for the small profits (within-two-year GCO accuracy) test.

comparison with Gul et al. (2014) we replicate their models explaining GCO issuance and incidence of a small profit (SP) as closely as possible. We obtain a significantly negative coefficient for *BPAR* (coeff. = –0.017, p = 0.046) for GCO issuance and an insignificant coefficient for *BPAR* (coeff. = –0.018, p = 0.216) for incidence of a SP on samples of clients with below-sample median partner tenure. However, when fixed effects are included in the regressions, the *BPAR* coefficient in the model explaining GCO issuance becomes positive and insignificant (coeff. = 0.030, p = 0.259), and the *BPAR* coefficient in the model explaining the incidence of a SP remains insignificant (coeff. = 0.056, p = 0.132).[23] We also examine the effect of firm tenure on APB by including its interaction in the fixed-effect models. None of the coefficients on the interaction term are significant. Thus, after controlling for partner fixed effects, we find no evidence that tenure intensifies the relationship between APB and audit quality.

Auditing resources, client complexity, and client effects

To provide further evidence regarding the effect of APB on audit quality, we carry out three more tests. First, we examine whether this effect varies with the level of resources available to a partner by including the interactions of *LBPAR* and *SIZEOFF* and *LBPAR* and *BIG6* in the models. Second, to examine whether the relationship between APB and audit quality depends on client complexity, we interact *LBPAR* with *SIZE*, and then with an indicator for clients in the top 5 percentile sorted by total assets of all listed clients in a year.[24] Partners working in large offices/firms command more resources in performing audits, and auditing more complex clients requires more effort. Thus, detrimental effects of APB could be observed only in smaller audit offices/firms or with complex clients. However, untabulated results show that none of the coefficients on these interaction terms is significant.

A second source of omitted variable bias might arise from unobservable client attributes. We therefore include client fixed effects along with partner fixed effects in the models as our third test. We do not estimate the client fixed-effect model for the GCO Type II error or within-two-year accuracy tests because small sample

[23] In these regressions, the *BPAR* coefficient is also insignificant when first-time GCOs are used, whether fixed effects are included or not.

[24] Client firm size of the Australian listed client population is heavily skewed to the right: the total assets of clients in the top 5 percentile represent about 92 percent of the total assets of all listed clients during the sample period, which suggests that the relationship between complexity and size may not be linear. One problem with using the top 5 percentile cutoff is that busy partners audit smaller clients and there is a lack of variation in the interaction variable. We therefore also use the top 25 percentile as an alternative cutoff and find that the results are qualitatively the same as those discussed below.

sizes preclude meaningful analyses. For all other regressions, the *LBPAR* coefficient is not significant.

APB and audit quality in the disequilibrium period of 2002–04

In the preceding analysis, we cannot reject the null of Hypothesis 1, which states that APB is not related to audit quality cross-sectionally. This conclusion is consistent with the argument that APB is endogenously determined with audit quality and in equilibrium there is no relationship between the two (Demsetz and Lehn 1985). Hypothesis 2 predicts that the relationship between APB and audit quality can be empirically detected when there is disequilibrium and partners' busyness level deviates from the optimum. We argue that the public accounting profession in Australia during 2002–04 is in such a disequilibrium state as a consequence of unexpected extra audit work following a series of exogenous changes. To provide evidence to support to this argument, we estimate the following regression:

$$BPAR_t = \alpha + \beta BPAR_{t-1} + \varepsilon \tag{8}$$

If APB is stable over time, then the β coefficient should be close to unity in model (8). For a sample of partners who perform at least one audit in each year, we estimate model (8) for three periods: pre-disequilibrium (1999–2001), disequilibrium (2002–04), and post-disequilibrium (2005–10). For these periods, untabulated results indicate that the β estimates are 0.960, 1.110, and 0.957, respectively. The β coefficient for the disequilibrium period is significantly different from those for the pre- or post-disequilibrium periods at the .01 level, whereas there is no significant difference between the pre- and post-disequilibrium period coefficients (p = 0.960). This evidence suggests a structural change in APB during the disequilibrium period, which is consistent with the argument that audit partners rebalanced their busyness level in this period. Moreover, the higher β for the disequilibrium period indicates that partners are significantly busier during this period than other periods, on average.

Is the APB-audit quality relation different in the disequilibrium period compared with the other periods? Following Graham et al. (2011), we estimate the fixed-effect models of (2B), (3B), (4B), and (5B) on the three periods.[25] For both the pre- and post-disequilibrium periods, untabulated results show that none of the *LBPAR* coefficients are significant. For the disequilibrium period of 2002–04, the *LBPAR* coefficient is –0.961 and significant at the .10 level in Model (4B), which explains first-time GCO issuance. This indicates that APB *causes* partners to reduce the likelihood of first-time GCO issuance when their APB level likely deviates from

[25] We do not estimate the GCO Type II error (Model 6) or within-two-year accuracy (Model 7B) because these tests are based on bankrupt clients and the sample size is too small to estimate the regressions for each of the three time periods.

optimum subsequent to the exogenous shock. However, we find that *LBPAR* is not statistically significant in other models. Thus, Hypothesis 2 is partially supported by the data.

To shed more light on the causal effect of APB on audit quality, we estimate the model using the separate APB variables that are based on client industry, busy season, and partner tenure. For the industry separation, only the coefficient for the number of audits in other industries is significant (*LBPARIND*: coeff. = 0.020, p = 0.941 and *LBPAROIND*: coeff. = –0.701, p = 0.078). For the busy season separation, only the coefficient for the number of clients with June year-ends is significant (*LBPARJUN*: coeff. = –1.030, p = 0.054 and *LBPAROJUN*: coeff. = –0.226, p = 0.549). However, for the partner tenure separation, neither of the coefficients is significant (*LBPAROLD*: coeff. = –0.279, p = 0.504 and *LBPARNEW*: coeff. = –0.196, p = 0.448). These results are broadly consistent with the causal interpretation of the relationship between APB and audit quality in a disequilibrium state: with too many audits concentrated in the busy season or too many clients in industries other than that of the incumbent client, a partner is less able to cope with the difficult decision of issuing a first-time GCO to distressed clients due to time constraints and the fact that he has limited attention to allocate across clients in his portfolio. These results indicate that the effects of APB may not be pervasive but are limited to the more difficult tasks faced by auditor partners. Moreover, these significant results for the 2002–04 period also suggest that the insignificance of *LBPAR* in the tests based on the full sample period is not due to its low within-partner variation but instead reflects the lack of economic influence over audit quality when APB is in equilibrium.

6. Discussion and Conclusion

Auditors in most countries are relatively free to choose how many clients they audit. However, recent studies (Karjalainen 2011; Gul et al. 2014; Sundgren and Svanström 2014) find that audit quality might be impaired when a partner audits a large number of clients and may not exercise due care for each client, which might imply that there should be regulatory measures concerning the number of audits performed by a partner. As opposed to these studies, we argue that the association between partner busyness and audit quality depends on the equilibrium condition for busyness. Following Demsetz and Lehn (1985) and subsequent corporate governance studies, such as Hermalin and Weisbach (2003), notably, we hypothesize that observed busyness levels likely represent optimal client portfolio choices made by each partner according to his own attributes—such as the partner's capabilities in handling the complexity of auditing multiple clients—and that there is no causal relationship between APB and audit quality in equilibrium. We test this hypothesis on a sample of publicly listed clients in Australia between 1999 and 2010 by employing audit quality measures used by the aforementioned studies, that is, discretionary accruals, small profits, and the propensity to issue (and the accuracy in issuing) GCOs. Consistent with the equilibrium view, we find that APB does not have a significant effect on these audit quality measures, particularly after we control for time-invariant unobservable partner attributes with partner fixed effects. These results are robust to a battery of additional tests.

Nevertheless, exogenous events might drive a partner’s busyness level out of equilibrium. After the accounting scandals and corporate collapses in the early 2000s, the Australian auditing profession experienced unprecedented regulatory changes. As non-trivial transaction costs impede speedy rebalancing of client portfolios, a partner’s actual busyness level deviates from the optimum after the shock. We hypothesize that APB may causally influence audit quality in the disequilibrium period of 2002–04 in Australia. Consistent with this disequilibrium view, we find that busier partners are significantly less likely to issue first-time GCOs to distressed clients during this period. Moreover, the negative effect of APB is only observed in the disequilibrium period.

We use the ICC statistics to determine whether the insignificance of the APB variable is caused by low within-partner variation or the absence of economic effect on audit quality. As noted above, the ICCs of APB are frequently lower (suggesting more variation) than those of control variables that load with significant coefficients, and we observe a negative effect of APB on the propensity to issue first-time GCOs to distressed clients in the disequilibrium period. Despite these observations, APB is relatively stable over time, which reduces the power of tests in the partner fixed-effect models. We therefore cannot completely rule out poor time-series variation in partner busyness as a competing explanation for insignificance of the APB variable. Subject to this caveat, our findings highlight the importance of the equilibrium condition in testing the association between audit outcomes and auditor attributes, such as APB, which are endogenous choices made by partners.

Why do contemporaneous studies find a negative relationship between APB and audit quality? We conjecture that such a result likely reflects the nature of samples used in different studies. Karjalainen (2011) and Sundgren and Svanström (2014) sample from private or small and medium-sized companies. Relying less on public financing channels, such firms likely have a low demand for high quality financial reporting and auditing (Ball and Shivakumar 2005). On the supply side, as Reynolds and Francis (2000) and Hope and Langli (2010) note, low quality audits of small/private clients have a weaker effect on auditor reputation because these clients are not so visible to market participants. This result indicates that a partner might offer low quality audits to a large number of small/private clients because of lower marginal costs.[26] The negative association between APB and audit quality in Karjalainen (2011) and Sundgren and Svanström (2014) might capture such a client-auditor matching. However, such an association stems from clients' low demand for high quality audit services rather than busyness with a large number of audits impairing quality. Gul et al. (2014) draw their sample from Chinese public clients. Generally, Chinese clients have a low demand for high quality audits due to the transitional and emerging nature of China's capital market (Piotroski and Wong 2012). Moreover, amid changing institutions and fast growth, supply and demand in China's audit market may not have reached equilibrium.[27] The dynamic Chinese setting suggests that Gul et al.'s (2014) finding could be a manifestation of the disequilibrium results, as we argue in this paper. Such a finding, however, cannot be extrapolated to an equilibrium setting.

To policy makers, the takeaway message of this study is that market mechanisms and self-regulation of the audit profession function well in curbing the detrimental effects of partner busyness in Australia. Such detrimental effects are not the norm—they are observed only during the disequilibrium period and dissipate when equilibrium is reestablished. We see no evidence of market failure and thus no need for a regulation of the number of audits an audit partner can undertake. Although research findings from one country must be interpreted with caution when applied to other countries, we believe that evidence from the public firm sector in Australia is more generalizable to mature audit markets in common-law countries such as the U.S. and the U.K. Offering stronger protection to investors (La Porta, Lopez-de-Silanes, Shleifer, and Vishny 1997; Siems 2008), common-law-based countries, including Australia, are more homogenous in financial reporting practices (Leuz, Nanda, and Wysocki 2003) and audit market structure (Francis, Khurana, and Pereira 2003), which suggests that findings from Australia will likely hold in these markets.

There is a paucity of research on the determinants of audit partners' busyness level. For example, what are the strategies that a partner follows in forming his portfolio according to his characteristics? How does the busyness level of a partner evolve when he gradually builds reputation capital? What are the penalties on a

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[26] Here, "low-quality" does not imply sub-optimality or economic inefficiency. The low-quality arises from the client's low demand for quality or the auditor's high (but unnecessary) costs of supplying quality (Ball and Shivakumar 2005).

[27] For example, DeFond, Wong, and Li (2000) find that large Chinese auditors improve independence but experience a significant loss of market shares immediately after the enactment of new independent auditing standards. The dynamics of China's audit market can also be inferred from its exponential growth. From 2002 to 2012, the annual revenues of the largest 100 Chinese audit firms increased from RMB4.43 billion to 34.45 billion (http://www.cicpa.org.cn/column/swszhpm).

partner's reputational capital when low quality audits are discovered by the market? Without a clear understanding of the determinants of the audit partner busyness level, it is difficult to infer how busyness level, as chosen by audit partners, causally affects audit outcomes in equilibrium. We leave such questions to future research.

Appendix: Client-specific control variables used in regression models

	Variable Definition	Expedited sign and supporting literature			
		Models (2) and (3)		Models (4), (5), (6), and (7)	
SIZE	= The natural logarithm of total assets at year-end.	(–)	Becker, DeFond, Jiambalvo, and Subramanyam (1998)	(–)	Carey and Simnett (2006)
DEBT	= Total liabilities divided by total assets at year-end, with the maximum values winsorized at the 99th percentile.	(+)	Godfrey and Koh (2003)	(+)	Francis and Yu (2009)
LOSS	= An indicator variable that equals to one if earnings before tax and abnormal items are negative, and zero otherwise.	(–)	Francis and Yu (2009)	(+)	Francis and Yu (2009)
SALESGRO	= Change in sales divided by sales in the prior year, capped at a maximum value of two.	(+)	Menon and Williams (2004); Hribar and Nichols (2007)		
SALEVOL	= Standard deviation of sales divided by total assets of the current and prior two years.	(+)	Carey and Simnett (2006); Hribar and Nichols (2007)		
CFO	= Operating cash flows divided by lagged total assets at year-end.	(–)	Carey and Simnett (2006); Hribar and Nichols (2007)		
CFOVOL	= Standard deviation of CFO for the current and prior two years.	(+)	Carey and Simnett (2006)		
BRUPT	= Zmijewski's (1984) bankruptcy score for the year, winsorized at its 1st and 99th percentiles.	(+)	Francis and Yu (2009)	(+)	Carey and Simnett (2006)
VOLAT	= Standard deviation of the monthly stock returns for the year, winsorized at its 99th value.	(+)	Francis and Yu (2009)	(+)	Francis and Yu (2009)
MB	= The natural logarithm of the market to book value of equity at yearend, and negative market value of equity to book value of equity ratios are recoded to 0.001 prior to taking the logarithm.	(+)	Francis and Yu (2009)	(+)	Francis and Yu (2009)
REPLAG	= The natural logarithm of the number of days from the client's year-end to its earnings announcement date.	(+)	Krishnan and Yang (2009)	(+)	Francis and Yu (2009)
BUSYSEAS	= An indicator variable that equals to one if the client has a June 30 year-end, and zero otherwise.	(+)	Lopez and Peters (2011)	(–)	Lopez and Peters (2011)
DIVPAYER	= An indicator variable that equals to one if the client paid dividends in the year, and zero otherwise.	(–)	Sant and Cowan (1994)		
COMPET	= Herfindahl-Hirschman Index, computed as: $\sum_{i=1}^{N}(\frac{s_i}{S})^2$, where N is the total number of audit offices in a city, s_i is the size of client's incumbent audit office, and S is the size of the city	(?)	Boone, Khurana, and Raman (2012); Kallapur,	(?)	Boone, Khurana, and Raman (2012); Kallapur,

		Expedited sign and supporting literature	
Variable	Definition	Models (2) and (3)	Models (4), (5), (6), and (7)
	market. Office and city market size are measured by audit fees for each year.	Sankaraguruswamy and Zang (2010)	Sankaraguruswamy and Zang (2010)
RETURN	= Annual returns adjusted for dividends and capitalization changes measured over the client's year.		(–) Carey and Simnett (2006)
CASH	= Cash plus short term investments divided by total assets at year-end.		(–) Francis and Yu (2009)
PRIORGC	= An indicator variable that equals to one if the client received a going concern notification in its audit report in the prior year, and zero otherwise.		(+) Francis and Yu (2009)
BKTLAG	= The natural logarithm of the number of days from the audit report date to the bankruptcy date.		(–) Geiger and Rama (2006)
PROPNAS	= Client's non-audit fees divided by the sum of the client's non-audit and audit fees for the year.		(–) Sharma and Sidhu (2001)

Note:
The dependent variables in Models (2) and (3) are discretionary accruals and the presence of small profits, respectively. Models (4), (5), (6), and (7) use the presence of GCOs as the dependent variables.

References

Adams, R., and D. Ferreira. 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics* 94 (2): 291–309.

Ahn, S., P. Jiraporn, and Y. Kim. 2010. Multiple directorships and acquirer returns. *Journal of Banking and Finance* 34 (9): 2011–26.

Allison, P. 2005. *Fixed Effects Regression Methods for Longitudinal Data: Using SAS®*. SAS® Institute Inc., Cary, NC.

Amir, A., J. Kallunki, and H. Nilsson. 2014. The association between individual audit partners' risk preferences and the composition of their client portfolios. *Review of Accounting Studies* 19 (1): 103–33.

Ball, R. 2009. Market and political/regulatory perspectives on the recent accounting scandals. *Journal of Accounting Research* 47 (2): 277–323.

Ball, R., and L. Shivakumar. 2005. Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics* 39 (1): 83–128.

Beck, N., and J. Katz. 2001. Throwing out the baby with the bath water: A comment on Green, Kim and Yoon. *International Organization* 55 (2): 487–95.

Becker, C., M. DeFond, J. Jiambalvo, and K. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15 (1): 1–24.

Benito, A., and C. Paz-Ares. 1997. Mandatory rotation of company auditors: A critical examination. *International Review of Law and Economics* 17 (1): 31–61.

Bertrand, M., and A. Schoar. 2003. Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics* 118 (4): 1169–208.

Blouin, J., B. Grein, and B. Rountree. 2007. An analysis of forced auditor change: The case of former Arthur Andersen clients. *The Accounting Review* 82 (3): 621–50.

Boice, R. 1989. Procrastination, busyness, and bingeing. *Behavior Research and Therapy* 27 (6): 605–11.

Bonner, S., and B. Lewis. 1990. Determinants of auditor expertise. *Journal of Accounting Research* 28 (Supplement): 1–20.

Boone, J., I. Khurana, and K. Raman. 2012. Audit market concentration and auditor tolerance for earnings management. *Contemporary Accounting Research* 29 (4): 1171–203.

Breyer, S. 1982. *Regulation and Its Reform*. Harvard University Press, Cambridge, MA.

Brickley, J., J. Linck, and J. Coles. 1999. What happens to CEOs after they retire: New evidence on career concerns, horizon problems and CEO incentives. *Journal of Financial Economics* 52 (3): 81–104.

Buffini, F. 2002. Chairman heed ASIC's wake-up call. *Australian Financial Review*, September 25, John Fairfax Group, Sydney.

Cahan, S., D. Jeter, and V. Naiker. 2011. Are all industry specialist auditors the same? *Auditing: A Journal of Practice & Theory* 30 (4): 191–222.

Caramanis, C., and C. Lennox. 2008. Audit effort and earnings management. *Journal of Accounting and Economics* 45 (1): 116–38.

Carcello, J., and C. Li. 2013. Costs and benefits of requiring an engagement partner signature: Recent experience in the United Kingdom. *The Accounting Review* 88 (5): 1511–46.

Carcello, J., and T. Neal. 2003. Audit committee characteristics and auditor dismissals following "new" going-concern reports. *The Accounting Review* 78 (1): 95–117.

Carey, P., and R. Simnett. 2006. Audit partner tenure and audit quality. *The Accounting Review* 81 (3): 653–76.

Chan, K., and D. Wu. 2011. Aggregate quasi rents and auditor independence: Evidence from audit firm mergers in China. *Contemporary Accounting Research* 28 (1): 175–213.

Chen, C., C. Lin, and Y. Lin. 2008. Audit partner tenure, audit firm tenure, and discretionary accruals: Does long auditor tenure impair earnings quality? *Contemporary Accounting Research* 25 (2): 415–45.

Chen, S., S. Sun, and D. Wu. 2010. Client importance, institutional improvements, and audit quality in China: An office and individual auditor level analysis. *The Accounting Review* 85 (1): 127–58.

Chin, C., and H. Chi. 2009. Reducing restatements with increased industry expertise. *Contemporary Accounting Research* 26 (3): 729–65.

Choi, J., C. Kim, J. Kim, and Y. Zang. 2010. Audit office size, audit quality and audit pricing. *Auditing: A Journal of Practice & Theory* 29 (1): 73–97.

Coles, J., and C. Hoi. 2003. New evidence on the market for directors: Board membership and Pennsylvania Senate Bill 1310. *Journal of Finance* 58 (1): 197–230.

Coles, J., N. Daniel, and L. Naveen. 2008. Boards: Does one size fit all? *Journal of Financial Economics* 87 (2): 329–56.

Core, J., R. Holthausen, and D. Larcker. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51 (3): 371–406.

Craswell, A., J. Francis, and S. Taylor. 1995. Auditor brand name reputations and industry specializations. *Journal of Accounting and Economics* 20 (3): 297–322.

De George, E., C. Ferguson, and N. Spear. 2013. How much does IFRS cost? IFRS adoption and audit fees. *The Accounting Review* 88 (2): 429–62.

DeAngelo, L. 1981. Auditor size and audit quality. *Journal of Accounting and Economics* 3 (3): 189–99.

DeFond, M., and J. Francis. 2005. Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice and Theory* 24 (Supplement): 5–30.

DeFond, M., T. Wong, and S. Li. 2000. The impact of improved auditor independence on audit market concentration in China. *Journal of Accounting and Economics* 28 (3): 269–305.

DeFond, M., and J. Zhang. 2014. A review of archival auditing research. *Journal of Accounting and Economics*: forthcoming.

Demsetz, H., and K. Lehn. 1985. The structure of corporate ownership: Causes and consequences. *Journal of Political Economy* 93 (6): 1155–77.

Dyreng, S., M. Hanlon, and E. Maydew. 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85 (4): 1163–1189.

Fama, E. 1980. Agency problems and the theory of the firm. *Journal of Political Economy* 88 (2): 288–307.

Fama, E., and M. Jensen. 1983. Separation of ownership and control. *Journal of Law and Economics* 26 (2): 301–25.

Fich, E., and A. Shivdasani. 2006. Are busy boards effective monitors? *Journal of Finance* 61 (2): 689–724.

Francis, J. 2004. What do we know about audit quality? *The British Accounting Review* 36 (3): 345–68.

Francis, J., I. Khurana, and R. Pereira. 2003. The role of accounting and auditing in corporate governance and the development of financial markets around the world. *Asia-Pacific Journal of Accounting and Economics* 10 (1): 1–30.

Francis, J., and M. Wilson. 1988. Auditor changes: A joint test of theories relating to agency costs and auditor differentiation. *The Accounting Review* 63 (4): 663–82.

Francis, J., and M. Yu. 2009. Big 4 office size and audit quality. *The Accounting Review* 84 (5): 1521–52.

Fujita, S., E. Yoshioka, and S. Suzuki. 2004. A study of factors concerning incidents of nurses: Analysis of the relationship between busyness and nurses incidents. *Hospital Administration* 41 (1): 47–54.

Ge, W., D. Matsumoto, and J. Zhang. 2011. Do CFOs have styles of their own? An empirical investigation of the effect of individual CFOs on financial reporting practices. *Contemporary Accounting Research* 28 (4): 1141–79.

Geanakoplos, J., and P. Milgrom. 1991. A theory of hierarchies based on limited managerial attention. *Journal of* *the Japanese and International Economies* 5 (3): 205–25.

Geiger, M., and D. Rama. 2006. Audit firm size and going-concern reporting accuracy. *Accounting Horizons* 20 (1): 1–17.

Gifford, S. 2005. Limited attention as the bound on rationality. *The B.E. Journal of Theoretical Economics* 5 (1): Art. 5.

Gilson, S. 1990. Bankruptcy, boards, banks, and blockholders: Evidence on changes in corporate ownership and control when clients default. *Journal of Financial Economics* 27 (2): 355–87.

Godfrey, J., and P. Koh. 2003. The association between firms' public finance issues and earnings management. *Accounting Research Journal* 16 (2): 102–16.

Goodwin, J., and D. Wu. 2014. Is the effect of industry expertise on audit pricing an office-level or a partner-level phenomenon? *Review of Accounting Studies*: forthcoming.

Gow, I., G. Ormazabal, and D. Taylor. 2010. Correcting for cross-sectional and time-series dependence in accounting research. *The Accounting Review* 85 (2): 483–512.

Graham, J., S. Hazarika, and K. Narasimham. 2011. Corporate governance, debt, and investment policy during the great depression. *Management Science* 57 (12): 2083–100.

Gul, F., M. Ma, and K. Lai. 2014, Auditing multiple public clients, partner-client tenure and audit quality. Working paper, available at: http://dx.doi.org/10.2139/ssrn.2156399.

Gul, F., D. Wu, and Z. Yang. 2013. Do individual auditors affect audit quality? Evidence from archival data. *The Accounting Review* 88 (6): 1993–2023.

Hermalin, B., and M. Weisbach. 2003. Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review*, Federal Reserve Bank of New York April: 7–26.

Hirshleifer, D., S. Lim, and S. Teoh. 2009. Driven to distraction: Extraneous events and underreaction to earnings news. *Journal of Finance* 64 (5): 2289–325.

Hirshleifer, D., and S. Teoh. 2003. Limited attention, information disclosure, and financial reporting. *Journal of Accounting and Economics* 36 (1–3): 337–86.

Hope, O., and J. Langli. 2010. Auditor independence in a private firm and low litigation risk setting. *The Accounting Review* 85 (2): 573–605.

Hribar, P., and D. Nichols. 2007. The use of unsigned earnings quality measures in tests of earnings management. *Journal of Accounting Research* 45 (5): 1017–53.

Ittner, C., and D. Larcker. 2001. Assessing empirical research in managerial accounting: A value-based management perspective. *Journal of Accounting and Economics* 32 (1–3): 349–410.

Jensen, M., and W. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial and Economics* 3 (4): 305–60.

Johnson, V., I. Khurana, and J. Reynolds. 2002. Audit firm tenure and the quality of accounting earnings. *Contemporary Accounting Research* 19 (4): 637–60.

Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29 (2): 193–228.

Jones, S., and D. Hensher. 2004. Predicting firm financial distress: A mixed logit model. *The Accounting Review* 79 (4): 1011–38.

Kahneman, D. 1973. *Attention and Effort*. Prentice-Hall Inc., Englewood Cliffs, NJ.

Kallapur, S., S. Sankaraguruswamy, and Y. Zang, 2010. Audit market concentration and audit quality. Working paper, available at: http://dx.doi.org/10.2139/ssrn.1546356.

Karjalainen, J. 2011. Audit partner specialization and earnings quality of privately-held companies. Working paper, available at: http://dx.doi.org/10.2139/ssrn.1766437.

Keys, P., and J. Li. 2005. Evidence on the market for professional directors. *Journal of Financial Research* 28 (4): 575–89.

Kim, J., R. Chung, and M. Firth. 2003. Auditor conservatism, asymmetric monitoring, and earnings management. *Contemporary Accounting Research* 20 (2): 323–59.

Knechel, W., L. Niemi, and M. Zerni. 2013. Empirical evidence on the implicit determinants of compensation in Big 4 audit partnerships. *Journal of Accounting Research* 51 (2): 349–87.

Kothari, S., A. Leone, and C. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1): 163-97.

Krishnan, J., and J. Yang. 2009. Recent trends in audit report and earnings announcement lags. *Accounting Horizons* 23 (3): 265-88.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny. 1997. Legal determinants of external finance. *Journal of Finance* 52 (3): 1131–50.

Larcker, D., S. Richardson, and I. Tuna. 2007. Corporate governance, accounting outcomes, and organizational performance. *The Accounting Review* 82 (4): 963–1008.

Larcker, D., and T. Rusticus. 2007. Endogeneity and empirical accounting research. *European Accounting Review* 16 (1): 207–15.

Leuz, C., D. Nanda, and P. Wysocki. 2003. Earnings management and investor protection: An international comparison. *Journal of Financial Economics* 69 (3): 505–27.

Libby, R., and H. Tan. 1994. Modeling the determinants of auditor expertise. *Accounting, Organizations, and Society* 19 (8): 701–16.

Lopez, D., and G. Peters. 2011. Auditor workload compression and busy season auditor switching. *Accounting Horizons* 25 (2): 357–80.

Lopez, D., and G. Peters. 2012. The effect of workload compression on audit quality. *Auditing: A Journal of Practice & Theory* 31 (4): 139–65.

Mace, M. 1986. *Directors: Myth and Reality*. Harvard University Press, Boston, MA.

Malone, C., and R. Roberts. 1996. Factors associated with the incidence of reduced audit quality behavior. *Auditing: A Journal of Practice & Theory* 15 (2): 49–64.

McDaniel, L. 1990. The effects of time pressure and audit program structure on audit performance. *Journal of Accounting Research* 28 (2): 267–85.

Menon, K., and D. Williams. 2004. Former audit partners and abnormal accruals. *The Accounting Review* 79 (4): 1095–118.

Monem, R. 2003. Earnings management in response to the introduction of Australian gold tax. *Contemporary Accounting Research* 20 (4): 747–74.

Nelson, M., and H. Tan. 2005. Judgment and decision making research in auditing: A task, person, and interpersonal interaction perspective. *Auditing: A Journal of Practice & Theory* 24 (Supplement): 41–71.

Nelson, M., J. Elliott, and R. Tarpley. 2002. Evidence from auditors about managers' and auditors' earnings management decisions. *The Accounting Review* 77 (Supplement): 175–202.

Otley, D., and B. Pierce. 1996. Audit time budget pressure: Consequences and antecedents. *Accounting, Auditing and Accountability Journal* 9 (1): 31–58.

Piotroski, J., and T. Wong. 2012. Institutions and information environment of Chinese listed firms. In J. Fan, R. Morck, and B. Yeung, ed.: *Capitalizing China*. University of Chicago Press, Chicago, IL.

Pugh, S. 2001. Service with a smile: Emotional contagion in the service encounter. *The Academy of Management Journal* 44 (5): 1018–27.

Radner, R., and M. Rothschild. 1975. On the allocation of effort. *Journal of Economic Theory* 10 (3): 358–76.

Rafaeli, A., and R. Sutton. 1990. Busy stores and demanding customers: How do they affect the display of positive emotion? *The Academy of Management Journal* 33 (3): 623–37.

Reichelt, K., and D. Wang. 2010. National versus office-specific measures of auditor industry expertise and effects on client earnings quality. *Journal of Accounting Research* 48 (3): 647–86.

Reynolds, J., and J. Francis. 2000. Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting and Economics* 30 (3): 375–400.

Sant, R., and A. Cowan. 1994. Do dividends signal earnings? The case of omitted dividends. *Journal of Banking and Finance* 18 (6): 1113–33.

Sharma, D., and J. Sidhu 2001. Professionalism vs. commercialism: The association between non-audit services (NAS) and audit independence. *Journal of Business, Finance and Accounting* 28 (5): 595–629.

Shivdasani, A. 1993. Board composition, ownership structure, and hostile takeovers. *Journal of Accounting and Economics* 16 (1–3): 167–98.

Shivdasani, A., and D. Yermack. 1999. CEO Involvement in the selection of new board members: An empirical analysis. *Journal of Finance* 54 (5): 1829–53.

Siems, M. 2008. Shareholder protection around the World (Leximetric II). *Delaware Journal of Corporate Law* 33 (1): 111–47.

Simon, H. 1978. Rationality as process and as product of thought. *American Economic Review* 68 (2): 1–16.

Simunic, D. 1980. The pricing of audit services: Theory and evidence. *Journal of Accounting Research* 18 (1): 161–90.

Skinner, D., and S. Srinavasan. 2012. Audit quality and auditor reputation: Evidence from Japan. *The Accounting Review* 87 (5): 1737–65.

Sundgren, S., and T. Svanström. 2014. Auditor-in-charge characteristics and going concern reporting. *Contemporary Accounting Research*: forthcoming.

Svarstad, B., D. Bultman, and J. Mount. 2004. Patient counseling provided in community pharmacies: Effects of state regulation, pharmacist age, and busyness. *Journal of the American Pharmacists Association* 44 (1): 22–9.

Taylor, S. 2011. Does audit fee homogeneity exist? Premiums and discounts attributable to individual partners. *Auditing: A Journal of Practice &* Theory 30 (4): 249–72.

Thompson, D., K. O’Leary, E. Jensen, S. Scott-Findlay, L. O’Brien-Pallas, and C. Brooks. 2006. The relationship between busyness and research utilization: It is about time. *Journal of Clinical Nursing* 17 (4): 539–48.

Watts, R., and J. Zimmerman. 1983. Agency problems, auditing, and the theory of the firm: Some evidence.

Journal of Law and Economics 26 (3): 613–33.

Weber, J., M. Willenborg, and J. Zhang. 2008. Does auditor reputation matter? The case of KPMG Germany and ComROAD AG. *Journal of Accounting Research* 46 (4): 941–72.

Willett, C., and M. Page. 1996. A survey of time budget pressure and irregular auditing practices among newly qualified UK Chartered Accountants. *British Accounting Review* 28 (2): 101–20.

Wooldridge, J. 2005. *Introductory Econometrics: A Modern Approach*. South-Western College Publishing, Cincinnati, OH.

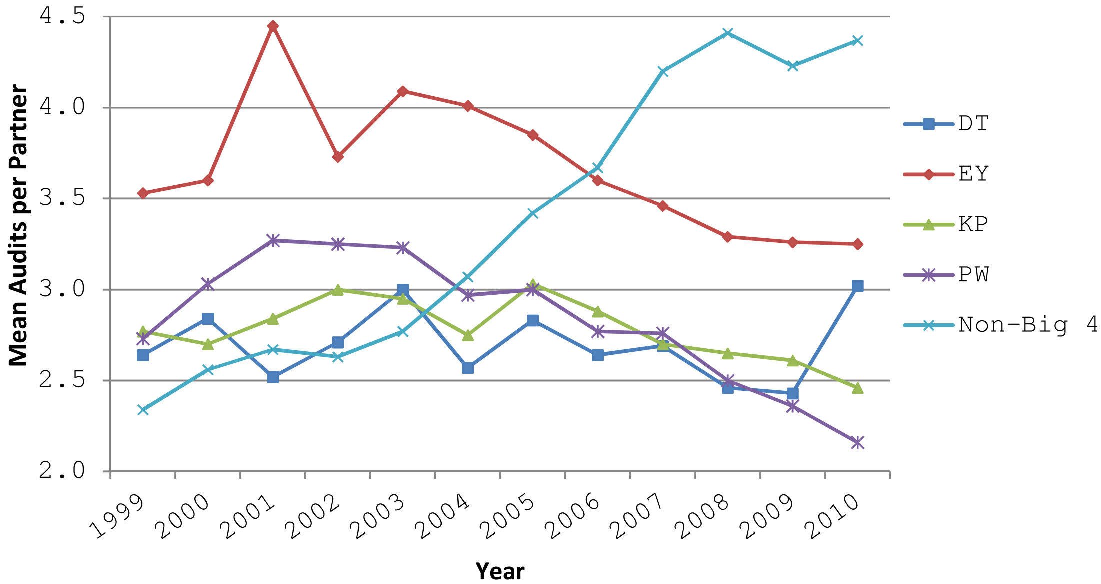
Ye, P., E. Carson, and R. Simnett. 2011. Threats to auditor independence: The impact of relationship and economic bonds. *Auditing: A Journal of Practice &* Theory 30 (1): 121–48.

Zerni, M. 2012. Audit partner specialization and audit fees: Some evidence from Sweden. *Contemporary Accounting Research* 29 (1): 312–40.

Zmijewski, M. 1984. Methodological issues related to the estimation of financial distress prediction models. *Journal of Accounting Research* 22 (Supplement): 59–82.

FIGURE 1

Mean Audits per Partner for Individual Big 4 and Non-Big 4 Audit Firms: 1999–2010



Notes:

DT = Deloitte Touche Tohmatsu. EY = Ernst and Young. KP = KPMG. PW = PricewaterhouseCoopers. Arthur Andersen is not shown because it appears only up to 2001.

TABLE 1
Descriptive Statistics of Variables Used in Regression Models

Panel A: Earnings management and going concern reporting samples

	Earnings Management Sample (N = 8,902*)				Going Concern Sample (N = 6,558)		
Variables	Mean	Median	Std. Dev.	ICC	Mean	Median	Std. Dev.
DAC	–0.026	–0.008	0.214				
ABSDAC	0.142	0.084	0.162				
POSDAC	0.125	0.075	0.141				
NEGDAC	–0.158	–0.094	0.177				
SP	0.026	0	0.158				
GC					0.117	0	0.321
GCA					0.263	0	0.440
BPAR	7.002	5.000	7.401	0.84	10.450	7	10.237
LBPAR	1.532	1.609	0.909	0.80	1.928	1.946	0.944
SIZEPAR	19.114	19.292	2.331	0.72	17.990	18.350	2.680
ICPAR	0.349	0.216	0.328	0.54	0.203	0.094	0.265
AGEPAR	45.558	44.784	7.607	0.89	45.329	44.296	8.097
FEMPAR	0.062	0	0.241	-	0.061	0	0.239
EXPPAR	0.118	0	0.322	0.35	0.059	0	0.235
TENPAR	2.826	3	1.484	0.17	2.685	2	1.432
EXPCN	0.121	0	0.326	0.27	0.066	0	0.248
SIZEOFF	15.025	15.197	2.019	0.90	14.377	14.422	1.915
BIG6	0.700	1	0.458	0.97	0.563	1	0.496
TENFIRM	3.920	5	1.394	0.20	3.564	4	1.472
SIZE	17.735	17.478	2.171	0.47	16.027	15.986	1.559
DEBT	0.394	0.382	0.261	0.21	0.254	0.121	0.290
LOSS	0.483	0	0.500	0.26	0.984	1	0.126
SALEGRO	0.200	0.072	1.083	0.10			
SALEVOL	0.281	0.125	0.417	0.11			
CFO	–0.050	0.021	0.371	0.13			
CFOVOL	0.162	0.070	0.295	0.09			
BRUPT	–3.502	–3.965	3.461	0.05	–3.088	–3.983	5.501
VOLAT	0.181	0.148	0.129	0.16	0.248	0.214	0.141
MB	0.246	0.402	1.658	0.09	0.194	0.542	2.158
REPLAG	4.183	4.127	0.282	0.25	4.362	4.382	0.289
BUSYSEAS	0.844	1	0.363	0.23	0.900	1	0.300
DIVPAYER	0.402	0	0.490	0.34			
COMPET	0.248	0.238	0.090	0.71	0.236	0.231	0.083
RETURN				0.01	0.138	–0.213	1.234
CASH				0.19	0.329	0.235	0.291
PRIORGC				0.12	0.229	0	0.420

(The table is continued on the next page.)

TABLE 1 (Continued)

Panel B: Going concern Type II errors sample (N = 227)

Variables	Mean	Median	Std. Dev.
GCB	0.520	1	0.501
BPAR	7.013	5	6.870
LBPAR	1.540	1.609	0.926
SIZEPAR	18.695	18.843	2.249
ICPAR	0.366	0.254	0.325
AGEPAR	44.224	44.932	10.619
FEMPAR	0.048	0	0.215
EXPPAR	0.110	0	0.314
TENPAR	2.617	2	1.379
SIZEOFF	14.730	14.666	2.024
BIG6	0.648	1	0.479
SIZE	17.203	17.091	2.127
DEBT	0.587	0.612	0.315
LOSS	0.740	1	0.440
BRUPT	–1.149	–2.433	6.512
REPLAG	4.309	4.317	0.348
PRIORGC	0.304	0	0.461
BKTLAG	5.155	5.375	0.698
PROPNAS	0.252	0.209	0.228

Notes:

ICC is within-partner intraclass correlation coefficient measured using the *loneway* command in STATA®. The ICC is calculated using the earnings management fixed-effect model sample (N = 8,757). Variable *FEMPAR* does not have a valid ICC because there is no within-partner variation in this variable.

[*] There is a total of 4,148 (4,754) observations for positive discretionary accruals or *POSDAC* (negative discretionary accruals or *NEGDAC*).

Definitions of dependent variables:

DAC = Discretionary accruals measured using the Kothari et al. (2005) method. *ABSDAC* = Absolute value of *DAC*. *POSDAC* = Positive *DAC*. *NEGDAC* = Negative *DAC*. *SP* = 1 if unmanaged net income is negative and *DAC* is positive, and reported ROA (net income divided by lagged total assets) is between zero and 0.02, and 0 otherwise. *GC* = 1 if the client receives a GCO from the auditor in the current year and a clean audit opinion in the previous year, and 0 otherwise. *GCA* = 1 if the client receives a GCO from the auditor in the current year, and 0 otherwise. *GCB* = 1 if the client receives a GCO from the auditor and files for bankruptcy within 12 months of the audit report date, and 0 otherwise.

Definitions of auditor-related independent variables:

BPAR = Number of listed clients in an audit partner's client portfolio in a year. *LBPAR* = Natural logarithm of *BPAR*. *SIZEPAR* = Natural logarithm of the sum of the clients' sales for each partners' client portfolio for the year. *ICPAR* = Client's audit fee divided by the sum of the audit fees from all of the partners' clients for the year. *AGEPAR* = Partner's age, measured at the client's year-end. *FEMPAR* = 1 if the audit partner is female, and 0 otherwise. *EXPPAR* = 1 if a partner is the first-ranked auditor by market share in an industry in a city, and 0 otherwise. *TENPAR* = The number of consecutive years to the current year that the incumbent partner has audited the client, capped at five. *EXPCN* = 1 if the office is the first-ranked in an industry by market share and the office is from the first-ranked audit firm by market share in the industry nationally, and 0 otherwise. *SIZEOFF* = Natural logarithm of the total audit fees paid to the audit office during the year. *BIG6* = 1 if the audit firm is a Big 4 firm, BDO, or Pannell Kerr Forster, and 0 otherwise. *TENFIRM* = The number of consecutive years to the current year that the incumbent audit firm has audited the client, capped at five.

See the Appendix for definitions of client-related independent variables.

TABLE 2
Correlation Matrices

Panel A: Correlation matrix for earnings management sample (N = 8,902)

Variables	*DA*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) *SP*	0.098*												
(2) *LBPAR*	–0.041*	–0.018											
(3) *SIZEPAR*	0.013	0.016	0.221*										
(4) *ICPAR*	0.022	0.010	–0.787*	–0.225*									
(5) *AGEPAR*	0.003	0.017	–0.093*	0.042*	0.082*								
(6) *FEMPAR*	0.010	–0.004	–0.071*	–0.006	0.046*	–0.184*							
(7) *EXPPAR*	0.018	–0.007	–0.105*	0.194*	0.164*	0.064*	0.035*						
(8) *TENPAR*	0.002	0.014	0.051*	0.050*	–0.021	0.222*	–0.081*	–0.018					
(9) *EXPCN*	–0.002	–0.001	–0.104*	0.214*	0.089*	0.034*	0.005	0.251*	–0.004				
(10) *SIZEOFF*	0.001	–0.004	0.035*	0.577*	–0.085*	–0.095*	0.087*	0.030*	–0.076*	0.305*			
(11) *BIG6*	–0.009	0.001	–0.021	0.449*	–0.035*	–0.127*	0.101*	0.129*	–0.059*	0.243*	0.705*		
(12) *TENFIRM*	0.008	–0.010	–0.054*	0.124*	0.063*	0.016	0.035*	0.051*	0.328*	0.046*	0.138*	0.163*	
(13) *SIZE*	0.089*	0.040*	–0.219*	0.554*	0.344*	0.073*	0.020	0.250*	0.014	0.235*	0.464*	0.344*	0.164*
(14) *DEBT*	–0.127*	0.044*	–0.210*	0.195*	0.236*	0.036*	–0.014	0.105*	–0.001	0.088*	0.115*	0.104*	0.006
(15) *LOSS*	–0.170*	–0.109*	0.236*	–0.338*	–0.274*	–0.049*	–0.013	–0.121*	–0.046*	–0.108*	–0.214*	–0.183*	–0.115*
(16) *SALEGRO*	0.042*	–0.010	0.010	0.046*	–0.005	–0.023	0.001	0.002	–0.025	–0.013	0.025	0.011	–0.018
(17) *SALEVOL*	–0.005	0.017	–0.014	0.056*	0.022	0.001	–0.006	–0.006	–0.017	–0.021	–0.023	–0.024	–0.071*
(18) *CFO*	–0.109*	0.017	–0.122*	0.224*	0.156*	0.015	0.014	0.072*	0.054*	0.073*	0.152*	0.159*	0.084*
(19) *CFOVOL*	0.003	–0.012	0.105*	–0.107*	–0.114*	–0.033*	–0.020	–0.060*	–0.050*	–0.071*	–0.106*	–0.097*	–0.063*
(20) *BRUPT*	–0.350*	–0.021	–0.006	–0.039*	–0.004	0.014	–0.009	0.001	–0.037*	–0.010	–0.032*	–0.030*	–0.052*
(21) *VOLAT*	–0.056*	–0.022	0.171*	–0.254*	–0.187*	–0.041*	–0.032*	–0.096*	–0.051*	–0.111*	–0.201*	–0.161*	–0.116*
(22) *MB*	0.086*	–0.063*	0.028	0.050*	–0.024	–0.006	0.017	0.017	–0.004	0.012	0.050*	0.039*	0.030*
(23) *REPLAG*	–0.085*	–0.009	0.210*	–0.286*	–0.199*	–0.033*	–0.041*	–0.143*	0.004	–0.115*	–0.266*	–0.187*	–0.091*
(24) *BUSYSEAS*	–0.029*	–0.016	0.072*	–0.128*	–0.066*	–0.006	–0.041*	–0.051*	0.008	–0.026	–0.119*	–0.102*	–0.021
(25) *DIVPAYER*	0.065*	0.003	–0.265*	0.373*	0.319*	0.064*	0.005	0.168*	0.045*	0.152*	0.266*	0.208*	0.136*
(26) *COMPET*	0.015	0.013	–0.230*	–0.051*	0.177*	0.022	0.025	0.276*	–0.035*	0.042*	–0.140*	0.025	0.030*

(The table is continued on the next page.)

TABLE 2 (Continued)

	Variables	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
(14)	*DEBT*	0.228*												
(15)	*LOSS*	–0.563*	–0.192*											
(16)	*SALEGRO*	0.060*	0.001	–0.064*										
(17)	*SALEVOL*	–0.046*	0.234*	–0.084*	0.096*									
(18)	*CFO*	0.402*	0.090*	–0.466*	0.044*	0.027*								
(19)	*CFOVOL*	–0.230*	–0.014	0.176*	0.079*	0.355*	–0.421*							
(20)	*BRUPT*	–0.195*	0.480*	0.224*	–0.035*	0.039*	–0.271*	0.133*						
(21)	*VOLAT*	–0.438*	–0.078*	0.420*	–0.030	0.055*	–0.297*	0.184*	0.126*					
(22)	*MB*	0.060*	–0.273*	–0.074*	0.057*	–0.035*	0.007	0.032*	–0.330*	–0.066*				
(23)	*REPLAG*	–0.446*	–0.125*	0.425*	–0.032*	–0.017	–0.215*	0.116*	0.140*	0.283*	–0.103*			
(24)	*BUSYSEAS*	–0.180*	–0.043*	0.095*	0.026	0.018	–0.081*	0.069*	0.026	0.068*	0.016	0.119*		
(25)	*DIVPAYER*	0.628*	0.223*	–0.654*	–0.006	–0.004	0.361*	–0.209*	–0.121*	–0.464*	0.087*	–0.436*	–0.080*	
(26)	*COMPET*	0.027	0.057*	–0.054*	0.008	0.013	0.035*	–0.016	0.021	–0.044*	–0.010	–0.073*	–0.009	0.067*

Panel B: Correlation matrix for going concern reporting sample (N = 6,558)

	Variables	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	GC	–0.023	0.006	0.038*	–0.024	0.003	0.000	–0.050*	0.003	0.021	0.014	–0.050*	–0.041*
	GCA	–0.056*	–0.021	0.063*	–0.007	–0.020	–0.004	–0.046*	–0.020	0.014	–0.006	–0.032	–0.186*
(27)	*RETURN*	0.043*	–0.007	–0.042*	0.021	–0.030	–0.037*	0.026	–0.025	–0.034*	–0.020	0.015	0.037*
(28)	*CASH*	0.125*	–0.036*	–0.138*	0.023	0.040*	–0.063*	–0.027	0.013	0.035*	–0.061*	–0.040*	–0.259*
(29)	*PRIORGC*	–0.025	–0.043*	0.031	0.015	–0.029	–0.011	–0.051*	–0.042*	–0.009	–0.026	–0.028	–0.195*

	Variables	(14)	(15)	(20)	(21)	(22)	(23)	(24)	(26)	(27)	(28)	(29)
	GC	0.150*	0.012	0.151*	–0.009	–0.036*	0.019	0.009	0.026	–0.126*	–0.125*	-
	GCA	0.353*	0.027	0.331*	0.040*	–0.168*	0.036*	0.039*	0.048*	–0.149*	–0.210*	0.461*
(27)	*RETURN*	–0.125*	0.025	–0.127*	0.381*	0.224*	0.012	–0.003	–0.018	-	-	-
(28)	*CASH*	–0.228*	0.032*	–0.051*	0.060*	0.206*	–0.102*	0.066*	–0.050*	0.110*	-	-
(29)	*PRIORGC*	0.259*	0.017	0.240*	0.113*	–0.140*	0.064*	0.047*	0.019	–0.010	–0.098*	-

(The table is continued on the next page.)

TABLE 2 (Continued)

Panel C: Correlation matrix for going concern reporting Type II errors sample (N = 227)

	Variables	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)
	GCB	–0.022	–0.116	–0.047	0.014	0.053	–0.141	–0.024	0.069	0.011
(30)	*BKTLAG*	0.064	0.036	0.017	–0.068	0.016	0.093	0.102	0.053	–0.054
(31)	*PROPNAS*	–0.066	0.240*	0.031	–0.086	0.033	0.146	–0.027	0.145	0.130

	Variables	(13)	(14)	(15)	(20)	(23)	(29)	(30)	(31)
	GCB	–0.218*	0.311*	0.355*	0.197*	0.110	0.348*	–0.143	–0.206*
(30)	*BKTLAG*	0.147	–0.021	–0.143	–0.113	–0.065	0.109	-	–0.034
(31)	*PROPNAS*	0.233*	–0.071	–0.133	–0.111	–0.067	–0.184*	-	-

Notes:

The table shows Pearson correlation coefficients for the variables used in regression analysis. The variables are defined in Table 1 and the Appendix.

* denotes two-tailed significance at the .01 level.

TABLE 3
Regression Results for Discretionary Accruals and Small Profits

		Discretionary Accruals (*DAC*)				Small Profits (*SP*)			
		Cross-sectional		Fixed-effect		Cross-sectional		Fixed-effect	
Variable		(Model 2A)		(Model 2B)		(Model 3A)		(Model 3B)	
LBPAR	?	–0.012	(0.018)	–0.008	(0.259)	–0.171	(0.211)	–0.063	(0.812)
SIZEPAR	?	–0.002	(0.372)	0.002	(0.395)	–0.058	(0.238)	–0.072	(0.399)
ICPAR	?	–0.039	(0.010)	–0.048	(0.001)	–0.968	(0.014)	–1.321	(0.015)
AGEPAR	+	0.001	(0.927)	0.074	(0.001)	0.010	(0.288)	0.456	(0.596)
FEMPAR	–	0.004	(0.606)			0.066	(0.831)		
EXPPAR	–	0.008	(0.293)	0.005	(0.555)	–0.271	(0.309)	–0.496	(0.124)
TENPAR	?	0.000	(0.995)	–0.001	(0.535)	0.053	(0.321)	0.068	(0.275)
EXPCN	–	–0.007	(0.140)	–0.013	(0.082)	–0.071	(0.764)	–0.298	(0.277)
SIZEOFF	–	–0.001	(0.575)	–0.010	(0.038)	–0.012	(0.850)	0.263	(0.151)
BIG6	–	–0.005	(0.534)	–0.015	(0.562)	–0.085	(0.719)	0.419	(0.803)
TENFIRM	–	–0.001	(0.644)	0.001	(0.779)	–0.095	(0.076)	–0.002	(0.981)
SIZE	–	0.003	(0.063)	0.004	(0.038)	0.168	(0.004)	0.265	(0.001)
DEBT	+	0.041	(0.035)	0.036	(0.002)	1.203	(0.002)	1.217	(0.009)
LOSS	–	–0.102	(0.001)	–0.107	(0.001)	–2.492	(0.001)	–2.301	(0.001)
SALEGRO	+	0.007	(0.114)	0.007	(0.001)	–0.051	(0.020)	–0.367	(0.003)
SALEVOL	+	0.003	(0.701)	0.002	(0.741)	0.092	(0.589)	0.137	(0.542)
CFO	–	–0.204	(0.001)	–0.212	(0.001)	–1.103	(0.001)	–1.229	(0.001)
CFOVOL	+	–0.039	(0.066)	–0.040	(0.001)	–0.435	(0.349)	–0.357	(0.372)
BRUPT	+	–0.027	(0.001)	–0.027	(0.001)	–0.105	(0.001)	–0.147	(0.001)
VOLAT	+	–0.014	(0.638)	–0.018	(0.363)	–0.655	(0.376)	–0.822	(0.301)
MB	+	–0.006	(0.008)	–0.006	(0.001)	–0.214	(0.001)	–0.247	(0.001)
REPLAG	+	0.007	(0.473)	–0.015	(0.165)	0.611	(0.029)	0.599	(0.162)
BUSYSEAS	+	–0.014	(0.111)	0.011	(0.298)	–0.039	(0.828)	–0.060	(0.889)
DIVPAYER	–	–0.022	(0.015)	–0.022	(0.002)	–1.052	(0.001)	–1.234	(0.001)
COMPET	?	0.029	(0.477)	0.022	(0.646)	1.532	(0.021)	–0.515	(0.760)
Intercept	?	0.012	(0.869)			–7.857	(0.001)		
Industry indicators		Yes		Yes		Yes		Yes	
Year indicators		Yes		Yes		Yes		Yes	
Adj. R^2/Pseudo R^2		0.225		0.300		0.032		0.026	
Partner fixed effects		No		Yes		No		Yes	
N		8,902		8,757		8,902		3,390	

Note:

The table presents OLS regression results for discretionary accruals (*DAC*) and logistics regression results for the small profits (*SP*). The two-tailed *p*-values are shown in parentheses. Coefficients and *p*-values less than 0.001 are shown as 0.001. Regressions are estimated with robust standard errors clustered by client and year as per Gow et al. (2010). See Table 1 and the Appendix for the definitions of the independent variables.

TABLE 4
Regression Results for Going Concern Reporting

		First-time GCOs (*GC*)				All GCOs (*GCA*)			
		Cross-sectional		Fixed-effect		Cross-sectional		Fixed-effect	
Variable		(Model 4A)		(Model 4B)		(Model 5A)		(Model 5B)	
LBPAR	?	0.057	(0.429)	–0.133	(0.400)	0.003	(0.965)	0.090	(0.539)
SIZEPAR	?	0.021	(0.384)	0.112	(0.006)	0.014	(0.499)	0.059	(0.111)
ICPAR	?	0.487	(0.058)	0.308	(0.406)	0.469	(0.039)	0.700	(0.049)
AGEPAR	–	–0.004	(0.496)	–0.530	(0.001)	–0.001	(0.875)	–0.156	(0.001)
FEMPAR	+	0.009	(0.960)			–0.149	(0.346)		
EXPPAR	+	–0.191	(0.323)	0.089	(0.714)	–0.183	(0.280)	0.194	(0.381)
TENPAR	?	–0.046	(0.170)	–0.037	(0.366)	–0.008	(0.774)	0.001	(0.984)
EXPCN	+	0.078	(0.656)	0.286	(0.190)	–0.085	(0.588)	0.198	(0.337)
SIZEOFF	+	0.051	(0.168)	0.024	(0.832)	0.108	(0.001)	0.107	(0.300)
BIG6	+	–0.006	(0.961)	0.439	(0.421)	–0.079	(0.464)	0.612	(0.183)
TENFIRM	+	–0.070	(0.021)	–0.083	(0.029)	–0.023	(0.386)	–0.021	(0.544)
SIZE	–	–0.119	(0.001)	–0.166	(0.001)	–0.344	(0.001)	–0.454	(0.001)
DEBT	+	0.729	(0.001)	0.923	(0.001)	1.398	(0.001)	1.765	(0.001)
LOSS	+	0.395	(0.282)	0.234	(0.548)	0.766	(0.020)	0.853	(0.028)
BRUPT	+	0.042	(0.001)	0.038	(0.001)	0.062	(0.001)	0.056	(0.001)
VOLAT	+	0.500	(0.147)	0.418	(0.269)	0.422	(0.161)	0.442	(0.198)
MB	+	0.110	(0.001)	0.113	(0.001)	0.036	(0.053)	0.055	(0.009)
REPLAG	+	0.011	(0.939)	0.147	(0.394)	–0.236	(0.070)	–0.262	(0.097)
BUSYSEAS	–	0.122	(0.387)	–0.038	(0.822)	0.298	(0.017)	0.309	(0.046)
COMPET	?	1.034	(0.049)	2.524	(0.024)	1.224	(0.010)	2.174	(0.036)
RETURN	–	–0.575	(0.001)	–0.545	(0.001)	–0.316	(0.001)	–0.340	(0.001)
CASH	–	–1.742	(0.001)	–1.897	(0.001)	–2.603	(0.001)	–3.155	(0.001)
PRIORGC	+					1.964	(0.001)	1.501	(0.001)
Intercept	?	–2.657	(0.931)			1.777	(0.888)		
Industry indicators		Yes		Yes		Yes		Yes	
Year indicators		Yes		Yes		Yes		Yes	
Pseudo R^2		0.077		0.084		0.307		0.265	
Partner fixed effects		No		Yes		No		Yes	
N		6,558		5,440		6,558		5,777	

Note:

The table presents logistics regression results for going concern reporting. The two-tailed *p*-values are shown in parentheses. Coefficients and *p*-values less than 0.001 are shown as 0.001. Regressions are estimated with robust standard errors clustered by client and year as per Gow et al. (2010). See Table 1 and the Appendix for the definitions of the independent variables.

TABLE 5

Regression Results for Type II Errors and Within-Two-Years Accuracy of Going Concern Reporting

		Type II Errors (*GCB*)		Within-Two-Years Accuracy (*GCB*)			
		Cross-sectional		Cross-sectional		Fixed-effect	
Variable		(Model 6)		(Model 7A)		(Model 7B)	
LBPAR	?	–0.039	(0.917)	–0.060	(0.802)	–3.161	(0.441)
SIZEPAR	?	0.075	(0.581)	0.033	(0.720)	–0.915	(0.467)
ICPAR	?	0.352	(0.775)	0.534	(0.497)	3.513	(0.510)
AGEPAR	–	–0.010	(0.568)	–0.024	(0.070)	–3.540	(0.001)
FEMPAR	+	0.739	(0.452)	–0.578	(0.405)		
EXPPAR	+	–0.568	(0.429)	0.018	(0.970)	7.800	(0.051)
TENPAR	?	0.114	(0.449)	0.112	(0.254)	0.266	(0.637)
SIZEOFF	+	0.088	(0.574)	0.155	(0.166)	–1.124	(0.575)
BIG6	+	0.433	(0.472)	–0.081	(0.842)	8.901	(0.993)
SIZE	–	–0.249	(0.107)	–0.332	(0.001)	–0.163	(0.690)
DEBT	+	2.911	(0.001)	2.325	(0.001)	10.040	(0.046)
LOSS	+	2.345	(0.001)	1.569	(0.001)	5.956	(0.019)
BRUPT	+	–0.051	(0.175)	–0.025	(0.344)	–0.152	(0.237)
REPLAG	+	–0.007	(0.991)	0.322	(0.528)	3.709	(0.189)
PRIORGC	+	1.439	(0.006)	1.573	(0.001)	0.413	(0.820)
BKTLAG	–	–0.616	(0.045)	–0.515	(0.004)	–0.825	(0.244)
PROPNAS	–	–1.696	(0.070)	–0.992	(0.121)	–3.737	(0.239)
Intercept	?	2.382	(0.632)	3.292	(0.361)		
Industry indicators		Yes		Yes		Yes	
Year indicators		Yes		Yes		Yes	
Pseudo R^2		0.421		0.413		0.451	
Partner fixed effects		No		No		Yes	
N		227		465		186	

Note:

The table presents logistics regression results for Type II errors and within-two-years accuracy of going concern reporting. The Type II errors (within-two-years accuracy) regression is based on clients that file for bankruptcy within (12 months) two years of the audit report date. The two-tailed *p*-values are shown in parentheses. Coefficients and *p*-values less than 0.001 are shown as 0.001. Regressions are estimated with robust standard errors clustered by client and year as per Gow et al. (2010). See Table 1 and the Appendix for the definitions of the independent variables.