

# Assessing Initiatives to Improve the Quality of Group Audits Involving Other Auditors

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# **Assessing Initiatives to Improve the Quality of Group Audits Involving Other Auditors**

## **ABSTRACT**

One of the major current concerns of regulators internationally is the quality of the auditing of multinational groups, particularly those involving the co-ordination by the principal auditor of other auditors. These concerns resulted in changes to the international auditing standard on group audits, International Standards on Auditing (hereafter ISA) 600, which are consistent with current initiatives being considered by the PCAOB. We examine audit quality pre and post ISA 600 to help inform the IAASB as to the efficacy of the ISA 600 amendments and inform the PCAOB with regard their similar initiatives under consideration. We make use of unique Australian disclosures which allow us to identify the nature and extent of involvement of other auditors in group audits. We find that the revisions to ISA 600 have contributed to an improvement in audit quality, specifically for clients of non-Big N auditors. Further, we find that the quality of MNE group audits involving other auditors from the same network is lower, and this appears not to be affected by the ISA 600 revisions. Consistent with regulatory concerns, we also examine whether there are any incremental costs for group audits involving other auditors. While we find that group audits involving other auditors are more costly, we do not find evidence of an increase in audit fees associated with these regulatory initiatives.

**Keywords:** group audits; global audit firm networks; audit quality; audit fees; regulation

## *1. Introduction*

Significant concerns have been recently raised by regulators about the quality of the auditing of multinational enterprise (MNE) groups (International Auditing and Assurance Standards Board (IAASB) [2015a, 2015b], Public Company Accounting Oversight Board (PCAOB) [2016], and the International Forum of Independent Audit Regulators (IFIAR) [2015]).<sup>1</sup> These concerns stem, in part, from the results of audit inspections where numerous examples of poor quality co-ordination and oversight of other auditors by signing auditors have been identified and commented upon by each of these regulatory and standard-setting bodies. Of particular concern are where these audits require the signing auditor (principal auditor) to co-ordinate other audit firms that are involved in providing audit evidence on individual components of the consolidated entity (component auditors<sup>2</sup>). This may involve co-ordination and evaluation of the work of other member firms within the audit network<sup>3</sup> (e.g., PwC Australia signs the audit report, whilst PwC US conducts audit work on the US component) or the use of other independent audit firms that are not members of the signing auditor's network. The concerns raised about the overall quality of the work are, in part, due to whether the signing auditor has undertaken their supervisory responsibilities to ensure that adequate attention is directed to the areas of greatest risk, and whether the signing auditor has audited a meaningful portion of the financial statements.

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<sup>1</sup> Further, IFIAR has outlined in their 2015-2017 Work Plan that "Audit quality will also be improved through further co-ordinated multi-jurisdictional inspections of group audits carried out by a number of IFIAR Members. This will provide a better understanding of group audit challenges and establish whether the current practices of the global audit networks give rise to specific audit quality risks" (IFIAR [2015]).

<sup>2</sup> Component auditor means an auditor who, at the request of the group engagement team, performs work on financial information related to a component for the group audit (ISA 600 para 9(b)).

<sup>3</sup> "Network" is defined and used in Section 290 of the IFAC Code of Ethics for Professional Accountants [2006] as "a larger structure: (a) That is aimed at co-operation, and (b) That is clearly aimed at profit or cost sharing or shares common ownership, control or management, common quality control policies and procedures, common business strategy, the use of a common brand name, or a significant part of professional resources". More detailed guidance on networks is provided in Section 290, paragraphs 16 to 26.

These concerns about group audit practices have been an on-going issue for regulators and standard-setters over the last decade. Concerns over the quality of group audits have also been highlighted by major international audit failures (e.g., Parmalat, Royal Ahold, and Satyam Corporation). As a result, in 2008 the IAASB significantly revised their group audit standard, ISA 600 (operational for audits of accounting periods ending on or after 15 December 2010), aimed at strengthening and clarifying the procedures around the conduct of group audits with the aim of enhancing their quality.

These strengthened procedures include enhancements to the nature, timing and extent of the principal auditor's procedures in obtaining an understanding of the component auditor and an extension of the principal auditor's involvement in the work of component auditors, where component auditors are involved in the group audit engagement. In particular, this is in relation to significant components<sup>4</sup> of the group, where revised ISA 600 requires further audit procedures to be performed in response to identified significant risks of material misstatement of the group financial statements.

It is essentially these initiatives on which the PCAOB has modelled their enhanced PCAOB Release No. 2016-002, "Proposed Amendments Relating to the Supervision of Audits Involving Other Auditors" of April 12, 2016. As outlined by Jay D. Hanson [2016], PCAOB Board Member, "As the release discusses in more detail, our overall approach incorporates many of the concepts currently included in International Standard of Auditing 600, Special Considerations—

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<sup>4</sup> A significant component is defined in ISA 600 revised para .9 (m) as "A component identified by the group engagement team (i) that is of individual financial significance to the group, or (ii) that, due to its specific nature or circumstances, is likely to include significant risks of material misstatement of the group financial statements."

Audits of Group Financial Statements (Including the Work of Component Auditors), but also imposes certain additional or more specific requirements”<sup>5</sup>.

Despite the importance and relevance of this issue, to date, research has not directly addressed group audit quality and the role of other auditors in the conduct of group audits<sup>6</sup>. Therefore we provide the first evidence available as to whether revised ISA 600, which is effective for audits of group financial statements for periods beginning on or after December 15, 2009 (in effect, periods ending on or after December 15, 2010), has been successful in improving group audit quality. Using the best available data, we examine whether audit quality improved after the revision of ISA 600. Specifically, we take advantage of a unique disclosure rule that requires all Australian listed companies to publicly disclose detailed audit fee information in the notes to the financial statements. This includes not only the audit fees paid to the principal audit firm, but also the audit fees paid to other member firms within the principal auditor’s network, and any audit fees paid to other independent auditors unaffiliated with the principal auditor<sup>7</sup>. We use two common proxies for audit quality which are available using Australia data: discretionary accruals and propensity to issue a going-concern opinion. We take into account the incidence of audit work undertaken by the principal and components (identifying whether they are either network or unaffiliated), and analyze our quality proxies<sup>8</sup>. We also examine audit fees, as reflective of the

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<sup>5</sup> These include: “For example, ISA 600 generally requires the "group engagement partner" to evaluate whether the group engagement team will be involved in the work of the "component auditors" to the extent necessary to obtain sufficient appropriate audit evidence. Our proposed amendments, on the other hand, more specifically require the lead auditor to determine its "sufficiency of participation" based on its relative responsibility for the areas of highest risk of material misstatement” (Hanson [2016]).

<sup>6</sup> Downey and Bedard [2015] survey the issues associated with co-ordination of group audit teams and Dee, Lulseged and Zhang [2015] examine other auditors but not from the perspective of group audits, nor changes to standards.

<sup>7</sup> The Australian disclosure is different from that provided by SEC registrants which have no categorization of audit fees by type of auditor.

<sup>8</sup> The two other types of audit quality proxies commonly used in US based academic studies, restatements or Accounting and Auditing Enforcement Releases (AAER), are not features of the Australian financial reporting environment. Further, audit firm inspection reports are not made public in Australia. As a result, discretionary accruals and going-concern issuance remain as the most relevant audit quality proxies available for analysis.

cost of the audit to the MNE client, for these various group audit arrangements, over the period of our study.

We find that the use of multiple audit firms in the audit of MNE groups in Australia is a significant issue, with 45 percent of these audits involving component auditors. This is broken down into 19 percent of these audits involving principal auditor's network and 26 percent of audits involving unaffiliated audit firms. This is not inconsistent with PCAOB data which indicates that other auditors are used in about 55 percent of audits performed by US global audit firm networks (hereafter, GAFNs) [Big Six] and about 30 percent of audits performed by non-US global network affiliate firms (PCAOB [2016]). We also find, in line with expectations, that the revision to ISA 600 resulted in a significant increase in the proportion of the group audit work undertaken by the principal auditor. This provides evidence that the revisions to this standard did impact the way that these MNE audits were undertaken, and that it is a suitable basis for a pre-post analysis in this quasi-experimental design.

Our main results are as follows. In relation to our first audit quality metric, discretionary accruals, we find an improvement in audit quality after ISA 600. This was most pronounced for non-Big 4 MNE group audits. Further, we find that for MNE group audits involving component auditors, audit quality is lower when the component auditors are from the same audit firm network, and this does not appear to be affected by the revisions to ISA 600. For our second audit quality metric, appropriateness of going-concern opinion, we find an improvement in audit quality post the revisions to ISA 600 but, as we observe a similar finding for the control group of non-MNE group audits not involving other auditors (group audits that are equivalently impacted by changes to standards and the general environment but are less impacted by the changes to ISA 600), we are unable to attribute this solely to the ISA 600 revisions. Consistent with regulatory

concerns, we also examine the incremental costs for group audits resulting from the implementation of ISA 600, through an examination of relative changes in audit pricing for the different combinations of MNE group audits, as well as a comparison with our control group. We find that group audits involving component auditors are consistently more costly than equivalent audits not involving other auditors, but we do not find evidence of an additional increase in audit fees for audits involving other auditors after the revision of ISA 600.

Collectively, our findings help inform the PCAOB regarding its recent initiatives to modify existing auditing standards pertaining to the supervision of audits involving component auditors in the US. They will also help inform the IAASB as to whether the revisions to ISA 600 have addressed concerns about the quality of group audits, and at what cost, and where current and future initiatives should be directed to further improve audit quality. Our findings, given the relative lack of transparency about identity and involvement of component auditors under most countries' current disclosure requirements, are also relevant to calls for greater disclosure of this information.

The remainder of our paper is organized as follows. Section 2 provides the relevant background for this study. In Section 3, we develop our hypotheses. Section 4 describes the method and empirical models. In Section 5, we present the descriptive statistics as well as results of the main analyses, sensitivity analyses and robustness tests. Section 6 concludes and provides suggestions for future research.

## *2. Background Information*

### 2.1 CURRENT REGULATORY CONCERNS

The quality of group audits, especially those involving the work of other auditors, is one of the current major concerns of audit regulators. This is evidenced by the fact that the international

group of audit inspectors and regulators (IFIAR) has identified it as one of their four main issues (IFIAR [2016]), and the two major regulators, the PCAOB and the IAASB both have current initiatives to try and address these concerns. In PCAOB Release No. 2016-002, the PCAOB is proposing to amend its auditing standards to strengthen the requirements that apply to audits that involve accounting firms and individual accountants outside the accounting firm that issues the audit report.

As stated by Martin F. Baumann, PCAOB Chief Auditor and Director of Professional Standards at the time of release, “We know from PCAOB oversight activities that the supervision of other auditors is an issue at some firms. That, and the fact that a majority of the audits of Fortune 500 companies use other auditors, underscores the importance of this proposal”. In particular, the PCAOB proposal identified concerns about audit quality in certain group audit situations and addresses the specific responsibilities of the lead auditor in overseeing the work of other auditors. “The proposal includes amendments to current standards and a new standard. These changes include:

- Directing the lead auditor's supervisory responsibilities to the areas of greatest risk, consistent with PCAOB risk-assessment standards.
- Making clear that, to act as lead auditor, an audit firm must itself audit a meaningful portion of the financial statements.
- Requiring more explicit procedures to prompt the lead auditor to bolster its involvement in the work of other auditors (through enhanced communication and more robust evaluation of other auditors' qualifications and work).”

This is supported on release by a quote from PCAOB Chairman James Doty [2016], “The proposal before us today comes at the matter of other auditors from a different perspective – not

one of ensuring transparency but one of ensuring appropriate involvement in that work by the lead auditor.”

These concerns are not necessarily expected to be observed in all group audits involving other auditors. As stated by Hanson [2016], there is a distinction between international networks: “many of the larger audit firms, particularly those that are part of international networks, have adopted methodologies that combine existing PCAOB standards and International Standards on Auditing. In some cases, firms have further supplemented these requirements by incorporating additional procedures, including procedures developed in response to inspection findings identified by the PCAOB or similar regulators in other parts of the world. These firms require frequent, comprehensive communications with other auditors and review of other auditors' work papers in areas of significant risk, steps which go beyond those currently required by PCAOB standards. Other firms, including those who don't follow international standards, continue to base their supervision of other auditors largely on existing PCAOB standards. As a result, the PCAOB has observed inconsistencies in practice among firms with regard to the supervision of other auditors. The proposed amendments are intended to enhance supervision over other auditors generally and bring consistency to the approaches used by firms”.

Thus we can see from these insights that the PCAOB is considering very carefully the work of the IAASB in relation to development of regulation around group audits and, in particular, the responsibilities of the principal auditor in relation to the oversight of other auditors. By way of background, we outline below the requirements contained in ISA 600 pre 2010, and the revisions that were made. ISA 600 pre-2010 consisted of a total of only 18 paragraphs and four requirements, three being considerations (whether the auditor's own participation is sufficient to be able to act as the principal auditor (para. 6); the professional competence of the other auditor

(para. 7); and the significant findings of the other auditor (para. 12)), and one being a requirement to “perform procedures to obtain sufficient appropriate audit evidence, that the work of the other auditor is adequate for the principal auditor’s purposes, in the context of the specific assignment” (para. 8).

The revised ISA 600 saw a considerable extension of the principal auditor’s involvement in the work of component auditors. One additional requirement was that the principal auditor be involved in the risk assessment procedures that a component auditor performs on a significant group component as well as in any further audit procedures to be performed in response to identified significant risks of material misstatement in the group financial statements. For the audit of any significant component of a group audit, it was required that the principal auditor be involved in the component auditor’s risk assessment process. It was understood that the nature, timing and extent of this involvement would be affected by the principal auditor’s understanding of the component auditor, but would include certain minimum prescribed actions (ISA 600 revised, para. 30). When significant risks of material misstatement of the group financial statements were identified in a component on which a component auditor performs the work, the principal auditor was now required to evaluate the appropriateness of the further audit procedures to be performed to respond to the identified significant risks of material misstatement of the group financial statements. Again, the principal auditor could determine whether it was necessary to be involved in the further audit procedures based on their understanding of the component auditor (ISA 600 revised, para. 30).

Further to these earlier changes, the IAASB still considers the issue of group audits, in particular those involving the work of other auditors, to be an area of concern. In December 2014 the IAASB recommenced work on one aspect of this project relating to the responsibilities of the

engagement partner in circumstances where the engagement partner is not located where the majority of audit work is performed. As a result, an IAASB Staff Audit Practice Alert on this aspect was published in August 2015 [2015a]. The issues identified form part of an Invitation to Comment on Enhancing Audit Quality in the Public Interest which was issued in December 2015 and was open for comments until May 16, 2016. The key concerns noted by the IAASB in the Invitation to Comment [2015b] are in response to the concerns of regulators and audit oversight authorities that involvement of the group engagement team in the work of the component auditors is not always adequate, particularly in instances where the group engagement partner is not located where the majority of the audit work is performed (para. 238), and audit inspection reports also raise concerns about judgments around the nature, timing and extent of the group engagement team's involvement in the work performed by component auditors (para. 239), as well as the reasons for this, which are not being clearly documented by the principal auditor.

We also note that concerns about the reliance of principal auditors on other auditors in the conduct of group audits have also been repeatedly expressed by the Australian Securities and Investments Commission (ASIC), the Australian equivalent of the PCAOB, in reporting on its audit inspection findings<sup>9</sup> (e.g., ASIC [2010], [2011], [2012], [2014], [2015]). ASIC [2015] notes that application of ISA 600 will be a key area for future inspection attention. ASIC's suggestions "included improved guidance in auditing standards on ...group audits.... We continue to encourage the IAASB to address these matters" (ASIC [2015], para 180). Consistent with this claim, both Canada (CPA Canada [2014a], [2014b]) and the UK (ICAEW [2014]) have issued

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<sup>9</sup> ASIC notes that the majority of cases identified that the concerns relate to other auditors who are members of the principal auditor's network and highlights the importance of considering the independence and competence of other auditors located in another country where there may be limited regulatory oversight of auditors and a different culture within that firm (ASIC [2011], para. 80). ASIC [2014, 32] notes that there continue to be "issues of ensuring appropriate use and reliance on other auditors in the context of group audits" including issues associated with "assessing the other auditors and reviewing their audit work".

relevant guidance to practitioners conducting group audits. Thus, regulators throughout the world are continuing to document consistent concerns about the quality of MNE group audits, particularly where auditors other than the principal auditor are involved.

## 2.2 RELATED PRIOR RESEARCH

Reflecting this increased attention, there have been some recent studies in the US examining group audits<sup>10</sup> (Glover and Wood [2014], Dee et al. [2015]). In a working paper by Glover and Wood [2014], they examine a small sample of US subsidiaries which lodge standalone accounts and find that subsidiaries have higher financial reporting quality than non-consolidated entities<sup>11</sup>. Dee et al. [2015] find that earnings response coefficients are lower and performance-adjusted discretionary accruals are higher in absolute value for companies that disclose for the first time the engaging of other auditors for a portion of the audit compared to matched firms. However, the authors acknowledge that their sample of 149 US audits where audit firms indicated that they performed work as component auditors is unrepresentative as it solely comprises audit firms which do not act as principal auditors for any SEC issuer (i.e., excludes all big and medium sized audit firms), severely limiting the generalizability of the findings. Accordingly, we believe that Australia's unique disclosure requirements represent the most appropriate setting currently available to examine the impact of MNE group audit arrangements on audit quality and pricing and address these issues of interest to audit firms, standard-setters and regulators.

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<sup>10</sup> Given their importance, it is surprising that there is little research examining the audit procedures to be undertaken as part of a group audit (Sunderland and Trompeter [2016]). For example, one key area is the determination of the extent to which various components will be examined, which will depend on the materiality for the group financial statements as a whole. However, in some of the first research undertaken in this area, Stewart and Kinney [2013] identify that the standards are silent about how these amounts should be determined and that methods being used in practice vary widely, lack theoretical support, and may either fail to meet the audit objective or do so at excessive cost.

<sup>11</sup> Glover and Wood [2014] note that in their sample of 332 firm years from 2001 to 2008 that 99 percent of the subsidiary auditors are from the same firm as the group auditor, suggesting this is a very specific sample with limited generalizability to the broader group audit setting.

So, relevant to the design of our study, it is noteworthy that ISA 600 (revised) contained 40 paragraphs of requirements and 66 paragraphs of explanatory material, a considerable extension to the four requirements contained in the preceding ISA 600. This resulted in a considerable increase in the requirements for involvement of the group auditor, a greater distinction between different types of component auditors, recognizing that reliance could not necessarily be placed on the work of the component auditor simply because they came from the same audit firm network. This provides support that this revised standard is expected to have an impact, and is suitable for examining whether its introduction had the desired impact on audit quality.

### 2.3 DETERMINANTS OF THE COMPOSITION OF THE ENGAGEMENT TEAM

Determining the composition of the engagement team to conduct a group audit can be a complex task, and needs to be agreed with the client before the start of the audit engagement. The terms of the engagement, including the use of component auditors, their required access to component information and explanations from those charged with governance and management, and the expected fees should be agreed with the client and set out in the engagement letter (ISA 600 revised, para. 14). In some situations, component auditors may be required because the principal auditor does not have local offices in a specific area where the client has material operations. Alternatively, the group auditor may have a local office, but the office faces resource constraints, and therefore, the principal auditor may be forced to use a component auditor. In other cases, a component auditor may be used because the principal auditor lacks specific local expertise (e.g., knowledge of local country tax issues).

In other situations, the governing body of a component of a client will appoint an auditor for that component. This includes situations where components of a group have a separate audit requirement (for example, a listed overseas subsidiary), or sometimes, although an audit is not

required, component management determines that there are advantages to the component's financial statements being independently audited (Carey, Simnett and Tanewski [2000]). In these situations, the principal auditor of the consolidated entity has the ability, but is not required, to use the audit evidence on which the component's audit opinion on the financial statements is based. Further, the principal auditor may outline additional testing for the component auditor to undertake (for example, where an accounting method used for the component, such as LIFO of inventory for a US subsidiary, requires an alternative accounting treatment for IFRS based consolidated accounts). Alternatively, the principal auditor may decide that the audit evidence collected by the component auditor is unreliable or does not suit their purposes, and that other audit evidence needs to be collected (ISA 600 revised, para. 3).

It is the principal auditor who determines which components of a group require audit attention. Paragraph 11 of ISA 600 (revised) states that "the group engagement partner is responsible for the direction, supervision and performance of the group audit engagement in compliance with professional standards and applicable legal and regulatory requirements, and whether the auditor's report that is issued is appropriate in the circumstances". There is, however, the potential for information asymmetry between the principal auditor (principal) and the various component auditors (agents) where the principal must determine how best to assess the quality of the service provided by the agents. In this case, making a poor decision could place the principal auditor at risk of low performance, low audit quality and higher risk of litigation. The principal auditor therefore must be able to satisfy him/herself that the use of component auditors does not result in compromised audit quality. He/she may do this either by engaging related component auditors and undertaking sufficient quality checking, through supervision, direction and evaluation of quality control processes, or by engaging unrelated component

auditors and providing potentially more extensive review of their work. In other words, the involvement of component auditors in the group audit forces the principal auditor to address this multi-layered principal-agent problem. Addressing such risks may involve greater work being undertaken by the principal auditor, getting other parts of the network to undertake additional audit work, and/or requesting additional audit work from unaffiliated auditors.<sup>12</sup>

### *3. Theory and Hypotheses Development*

This study examines whether concerns about audit quality of MNE group audits have been addressed by the revisions to ISA 600. Group audits are subject to the earlier version of ISA 600 prior to 15 December 2010 and revised ISA 600 after that time. In the first part of the analyses, our baseline group audit structure is where the principal auditor undertakes all of the work in the MNE group audit<sup>13</sup>. Next, we limit the sample to those MNE group audits involving component auditors and examine whether the type of component auditor (network member or unaffiliated auditor) matters.

#### 3.1 THE IMPACT OF REVISED ISA 600 ON MNE AUDIT QUALITY

As outlined earlier, considerably enhanced requirements are imposed on the principal auditor under the revised ISA 600. As a result of these revisions, the principal auditor is required to undertake additional effort for significant components of the group. In addition, for components that are not significant, the principal auditor is expected to perform analytical procedures at a group level, and then follow up any risks of material misstatement (ISA 600 revised, para. 28-

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<sup>12</sup> There are incentives to align auditors from a network across a group audit. Research shows takeovers commonly result in the aligning of auditors of acquirees to the auditors of acquirers over time (Anderson, Stokes and Zimmer [1993]). Closer alignment of auditors across a group audit is expected to result in lower co-ordination and monitoring costs.

<sup>13</sup> We note that while ISA 600 requires the principal auditor to accept responsibility for the entire audit engagement, the PCAOB's AU-C 600 allows the principal auditor to share responsibility for the engagement. Specifically, AU-C 600 allows the principal auditor to disclaim responsibility for a portion of the audit by simply referencing the work of the other auditor in the audit opinion for the group financial statements. This is an option available only in the US and not available in any other jurisdiction and is inconsistent with the principles of ISA 600.

.29). In addition, the principal auditor is expected to gather evidence that the consolidation process of the financial information from each of the components is appropriately undertaken (ISA 600, revised para.32-.37). Our first hypothesis therefore tests whether the increased emphasis on the role of the principal auditor and the increased requirements under the revised ISA 600 result in an improvement in audit quality for MNE group audits.

*H1a*: Audit quality is higher for multinational group audits after the revision of ISA 600.

It can be argued that the Big 4 firms have significant resources and capacity to maintain sufficient audit quality, regardless of the existence or identity of the component auditor. Specifically, while maintaining acceptable levels of quality across engagements may require additional resources for supervision, communication and co-ordination, the Big 4 firms have invested heavily in infrastructure to permit such efforts. Their methodologies and training also adapt to changes in audit requirement from international auditing standards. Further, given their visibility and heightened exposure to reputation loss and global legal liability (see for example, DeAngelo [1981]), the Big 4 firms also have strong incentives to maintain sufficient audit quality regardless of how the work is allocated, compared with non-Big 4 firms. We therefore expect that the revisions to ISA 600 will result in a smaller improvement in audit quality where the principal auditor is a Big 4 auditor. This is tested by the following hypothesis.

*H1b*: The impact of the revision of ISA 600 will result in a smaller improvement in audit quality for Big 4 MNE group audits.

### 3.2 DO THE REVISIONS TO ISA 600 HAVE AN ADDITIONAL IMPACT ON MNE AUDIT QUALITY FOR AUDITS INVOLVING OTHER AUDITORS?

As we outlined previously, many of the concerns expressed in relation to MNE group audit quality are where the audit involved the work of other auditors. The strengthened procedures in

revised ISA 600 included enhancements to the nature, timing and extent of the principal auditor's procedures in obtaining an understanding of the component auditor and an extension of the principal auditor's involvement in the work of component auditors, where used on the engagement. The component auditor may be affiliated with the principal auditor as a member of their audit firm network, or be unaffiliated with the principal auditor. However, there may be a number of impediments to maintaining a required level of audit quality when component auditors are involved, for example, in relation to co-ordination and communication (Downey and Bedard [2015]). In essence, the involvement of component auditors in a group audit creates a multi-layered principal-agent problem for the signing partner when relying on the work of the agents. In order to test the validity of the concerns of regulators and standard setters about audit quality when using component auditors and the efficacy of the revisions to ISA 600 directed at component auditors, we test the following hypothesis:

*H2a: Audit quality is higher for multinational group audits involving component auditors after the revision of ISA 600.*

The problems of potential overreliance can occur both when the component auditor is part of the principal's audit firm network, and where the component auditor is unaffiliated with the principal auditor. We outline each of these arguments in turn, commencing with some background regarding audit firm network structures and operations.

While branded (and commonly thought of) as a single entity, a global audit firm network (GAFN) is typically organized as an association of national partnerships that agree to affiliate and operate under a single global brand. In most countries, the authority to practice as an accounting firm is not granted to an international entity. Rather, that right is reserved for national firms in which local professionals have majority or full ownership. Consequently, GAFNs are

typically organized as partnerships where membership is comprised of national firms where each member firm serves its geographic area and is subject to the laws and professional regulations of the country (or countries) in which it operates (Carson [2009]). To ensure quality, the GAFNs invest heavily in training, development of audit methodologies and the maintenance of well-staffed groups of technical experts worldwide. Further, they expend considerable effort to ensure consistency across member firms. For example, when new audit methodologies are introduced, they are rolled out worldwide to all of the GAFN member firms. Such effort should result in greater uniformity across member firms. To the extent that GAFN member firms are expected to provide uniform quality audits (IAASB [2015b]), there should be no difference between the quality of work performed by members of the principal auditor and that performed by other members within the GAFN.

However, if the component auditor is a member of the principal auditor's network, it is possible that the principal auditor may rely on the network's quality control and inappropriately over rely on the work undertaken by another member of the network—that is, the principal auditor may assume (rather than check) that the work of fellow network members is of a quality similar to their own. This is consistent with the potential impact of attachment bias<sup>14</sup>, which, whilst unconscious, can occur even in the face of professional mandates to be free from bias and to be professionally skeptical.

However, similar arguments may apply where the component auditor is unaffiliated with the principal auditor. In this situation, the principal auditor runs a risk when accepting responsibility

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<sup>14</sup> By attachment bias, we refer to the psychological observation that human judgments are affected by the subconscious biases that arise from the contextual relationships in which the judgments are made (Bazerman, Morgan and Loewenstein [1997]). While Bazerman et al.'s conclusion that auditors cannot conduct impartial audits due to self-serving biases is seen as resulting from repeated interactions between auditors and their clients, it is equally applicable between parts of a GAFN. While Bazerman et al.'s conclusion is called into question by King [2002], who finds that there are external pressures to neutralize such unconscious biases with clients, there are less external pressures to reduce such unconscious biases within a GAFN.

for their work conducted by another auditor because of the information asymmetry about the extent and quality of the work performed. In such cases, the principal group auditor must engage in a cost-benefit analysis to determine the appropriate extent of review and/or re-performance of audit testing. Further, different regulatory oversight in other countries, different national practices, different standards or different interpretations of standards, absent GAFN quality control processes, may contribute to lower quality auditing where unaffiliated auditors are involved. The potentially less systematic nature of the relationship between the principal and unaffiliated component auditor and the lack of established protocols for interaction between the principal and unaffiliated auditor (unlike the situation where the principal and other auditor are affiliated through the network), may also impact the amount of oversight and auditor involvement required to be undertaken by the principal auditor. It is these difficulties that have been observed by the regulators (PCAOB [2010], [2011], EAIG [2012], ASIC [2015]) and that have led to concerns commonly expressed about the quality of group audits. Overall, we acknowledge the requirement contained in ISA 600 that the principal auditor takes responsibility for the group audit irrespective of group audit structure, but at the same time identify important impediments to achieving this.

We note that ISA 600 (revised) does not distinguish explicitly between the different types of component auditors.<sup>15</sup> However it does recognize that the principal auditor's understanding of the component auditor, which impacts nature, timing and extent of audit procedures, is affected by factors such as previous experience with or knowledge of the component auditor, and the degree to which the group engagement team and the component auditor are subject to common policies and procedures (ISA 600 revised, paras A33-A35). Based on the above discussion, we

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<sup>15</sup> An early draft of the standard did distinguish between related (network) auditors and other auditors, recognizing that, in the case of a related auditor, the group engagement team will normally be able to rely on common policies and procedures on recruitment, training, advancement, auditor independence, audit methodology and quality control.

examine the following null hypothesis to test whether there are differences in audit quality depending on the type of component auditor.

*H2b*: There is no difference in audit quality for multinational group audits involving component auditors that are part of the principal's audit firm network compared to those involving unaffiliated auditors.

### 3.3 IMPACT OF REVISED ISA 600 ON GROUP AUDIT FEES

When auditing standard-setters and regulators are evaluating new or revised auditing requirements, they are required to consider the costs and the benefits. The costs of a MNE group audit include expenses related to audit effort, both on the part of the principal auditor and of any component auditors. Further, they include (potentially significant) costs related to co-ordinating the engagement which may include supervision/oversight of component auditors, reviewing the work of component auditors to ensure that it meets the quality standards of the principal auditor and re-performing that work if necessary. While we cannot necessarily observe all costs arising from the revision to ISA 600<sup>16</sup>, in Australia we can observe whether these costs are passed on to the client in the form of increased audit fees. At the same, we know from prior research that audit fees in Australia were under pressure during the period of study, especially for large MNEs (Carson et al. [2012]). Given these competing arguments, we test the following null hypothesis:

*H3*: There will be no difference in audit fees for multinational group audits after the revision of ISA 600.

#### 4. Methodology

Using a sample of Australian listed companies over the period 2006-2013, we examine differences in the audit quality and costs of group audits across different group auditor

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<sup>16</sup> While audit quality is of prime responsibility to the principal auditor, it is important to keep in mind that the principal auditor will consider the costs to the client in order to offer the engagement at an attractive (i.e. competitive) fee and to maintain an acceptable margin.

combinations, both pre and post revisions to ISA 600. We undertake this analysis for publicly listed Australian MNE groups (defined as having at least one subsidiary incorporated outside Australia). Unlike other jurisdictions, reporting guidelines in Australia require listed entities to disclose their audit fees as follows<sup>17</sup>:

- The fee paid to the principal auditor (i.e. signing auditor).
- The fee paid to audit firms related to the principal auditor (i.e., affiliated firms that are members of the principal auditor's network).
- The fee paid to other auditors (i.e., unaffiliated firms that are not members of the principal auditor's network).

This reporting requirement allows for an assessment of the portion of the engagement that has been completed by the principal auditor, other members of the principal auditor's network and unaffiliated auditors. This, in turn, presents an opportunity to test the impact of different combinations of auditors on the quality of the group audit as well as the impact on total audit costs (from the perspective of the client incurring such costs) where component auditors are engaged to complete the group audit.

As ISA 600 does not cover the conduct of joint audits (that is, where more than one audit firm signs the audit opinion), 29 instances of joint audits were initially removed from the population of ASX listed companies (16,745 firm-years remaining) to identify our group audit sample. We then deleted firm-years with missing financial information (1,632); missing share price information (837); audit opinions signed outside Australia (791); non-12 month reporting period (91); missing audit information (270) and those in the financial sector (2,102) and with missing

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<sup>17</sup> Audit fees paid to each category of auditor are required. The disclosure does not require identification of the specific network members or the name of unaffiliated audit firm/firms involved in the group audit.

prior year audit opinion data (674). Of these 10,348 firms, 2,704 had no subsidiaries, 2,881<sup>18</sup> have one or more subsidiaries located within but none outside Australia (which then comprise our control non-MNE group sample) and 4,763 have one or more foreign subsidiaries (MNE sample)<sup>19</sup>. We focus on the 4,445 MNE group audit observations over the period 2006-2013 which fall into the following categories:

- All components audited by the principal auditor: 2,438 (54.85 percent) of MNE group observations;
- Components audited by principal auditor and other members of the principal auditor's audit firm network only: 843 (18.97 percent) of MNE group observations; and
- Components audited by principal auditor and by unaffiliated auditors only: 1,164 (26.18 percent) of MNE group observations.

The percentage of the total audit fee paid to the principal auditor for group audits ranges from eight percent to 100 percent. For the 45 percent of audits involving component auditors, on average 27 percent of the total audit fee is paid to the network or unaffiliated firms. For over 91 percent of these observations the proportion of the total audit fee paid to component auditors exceeds five percent suggesting that the components we identify are material to the overall group audit<sup>20</sup>.

#### 4.1 EMPIRICAL MODELS

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<sup>18</sup> Of these, 2,737 had no component auditors and this group becomes our control group as reported in subsequent analysis.

<sup>19</sup> There were 318 firm-year observations where components were audited by the principal auditor, its network and unaffiliated auditors, these observations are eliminated from our sample as they are not able to be categorised wholly into a single category and are insufficient in number to analyse separately.

<sup>20</sup> Our reported results are not sensitive to re-coding observations with less than five percent of audit fees paid to a component auditor as having no component auditor involvement.

We utilize a quasi-experimental design constructed around the revision of ISA 600. This allows us to examine pre and post the revision of ISA 600, whether changes in audit quality have resulted from the revision of this standard.

For the analyses contained in this paper, one potentially complicating factor is selection bias. Specifically, it is possible that MNE group audits that require the efforts of component auditors (either affiliated or unaffiliated) are, in some way, systematically different from other audits. To address this, we employ a two stage approach (see, for example, Simnett, Vanstraelen and Chua [2009]). The first stage consists of a model to predict the choice of involving a component auditor (versus principal only audit) as a determinant of audit quality/fees, with the inverse mills ratios resulting from this stage (*LAMBDA*) being included in our subsequent audit quality and audit fee models. The first stage probit model is estimated as follows (omitting firm and time subscripts):

$$\begin{aligned}
 COMPONENT = & \alpha + \beta_1 LTA + \beta_2 CATA + \beta_3 QUICK + \beta_4 LEVERAGE + \beta_5 PERFORM + \\
 & \beta_6 LOSS + \beta_7 MINING + \beta_8 BIGN + \beta_9 LARGENONBIGN + \beta_{10} PCTSUBENGLISH + \\
 & \beta_{11} LSUB + \beta_{12} FOREIGN + \textit{Subsidiary Country Fixed Effects} + \textit{Industry Fixed Effects} + \\
 & \varepsilon \quad (1)
 \end{aligned}$$

Where *COMPONENT* is an indicator variable defined as involvement of a component auditor = 1, principal auditor only = 0. Following prior literature on auditor choice (Lawrence, Minutti-Meza, and Zhang [2011], Chaney, Jeter and Shivakumar [2004]), we include as control variables: client size (*LTA*), measured using the natural logarithm of total assets; client complexity measured by asset mix (*CATA*); client risk measures being short-term financial risk (*QUICK*), long-term financial risk (*LEVERAGE*), current year's operating cash flow (*PERFORM*), and current year's loss (*LOSS*). We also control for the natural log of total

subsidiaries (*LSUB*), and an indicator variable when percentage of foreign subsidiaries exceeds 25 percent (*FOREIGN*) which measure the degree of complexity and internationality in the group audit structure. In Australian studies, client industry is also specifically controlled for via an indicator variable for the mining industry (*MINING*), given the prevalence of such clients (over one-third of listed companies) and the unique nature of operations for this type of business (Carson, Simnett, Soo and Wright [2012]). Further, we include variables for the type of audit firm, *BIGN* and *LARGENONBIGN* (BDO or Grant Thornton). The instrumental variable in this model for involvement of component auditor is the percentage of total subsidiaries a client-firm has incorporated in English speaking countries (*PCTSUBSENGLISH*). If the foreign subsidiary is located in a country not using the language of the principal, there is arguably a higher likelihood that the principal will involve a component auditor. The variables are defined in Table 1. We have also included country/region fixed effects and industry fixed effects (two-digit GICS) in our selection models to control for all countries where a company's foreign subsidiaries are incorporated and for different industries.

#### INSERT TABLE 1

*4.1.1 Measures of Group Audit Quality.* To test for differences in audit quality related to group audit arrangements we use two measures: (1) discretionary accruals and (2) going-concern issuance (for the sub-sample of financially stressed firms). We utilize a quasi-experimental design constructed around the revision of ISA 600, and control for auditor choice as discussed previously. We use the cross-sectional modified Jones model (Jones [1991], Dechow, Sloan and Sweeney [1995]) to measure discretionary accruals. We follow Kothari, Leone and Wasley [2005] and Ashbaugh, LaFond and Mayhew [2003] and use performance-adjusted discretionary accruals under the premise that extreme performance impacts the accruals-generation process.

This model has been commonly used as a proxy for audit quality in the US (e.g., Francis and Michas [2013]), as well as in the international auditing literature across a range of countries (e.g. Francis, Michas and Seavey [2011], Kwon, Lim and Tan [2007], Carcello and Li [2013], Lennox, Wu and Zhang [2016]). Discretionary accruals are measured by the residual term ( $\varepsilon_{it}$ ) by industry-year (by two-digit GIC sector code with a minimum of eight firm-years per sector<sup>21</sup>) using the following model:

$$ACC_t = \alpha_0 + \alpha_1(\Delta Sales_t - \Delta REC_t) + \alpha_2 PPE_t + \alpha_3 ROA_t + \varepsilon_t \quad (2)$$

where:

*ACC* is the net profit after tax before extraordinary items less cash flows from operations;  $\Delta Sales$  is the change in net sales revenue;  $\Delta REC$  is the change in net receivables; *PPE* is net property, plant and equipment<sup>22</sup> and; *ROA* is return on assets. All variables are scaled by average total assets (except *ROA*). We also examine signed accruals (untabulated), as positive income-increasing accruals are likely to have different consequences to negative income-decreasing accruals for auditors.

The empirical model used to test H1a, H1b, H2a and H2b is in the form of a tobit model given the censored nature of the data and is specified as follows (ignoring subscripts):

$$\begin{aligned} ABSDA = & \beta_0 + \beta_1 COMPONENT + \beta_2 ADTCHANGE + \beta_3 AGE + \beta_4 INDGROWTH + \beta_5 CATA + \\ & \beta_6 QUICK + \beta_7 PERFORM + \beta_8 LTA + \beta_9 LEVERAGE + \beta_{10} LOSS + \beta_{11} PPEGROWTH \\ & + \beta_{12} MINING + \beta_{13} BIGN + \beta_{14} LARGENONBIGN + \beta_{15} LSUB + \beta_{16} FOREIGN + \\ & \beta_{17} SALES GROWTH + \beta_{18} SALES\_vol + \beta_{19} OCF\_vol + \beta_{20} LAGTOTACC + \beta_{21} MB + \end{aligned}$$

<sup>21</sup> US studies typically impose a minimum of 20 firm-years per industry sector, but due to our more limited sample size, a 20 firm-year minimum per industry would be unduly restrictive.

<sup>22</sup> We use Net Property, Plant and Equipment as we are unable to reliably calculate Gross Property, Plant and Equipment using Aspect Financials for this period.

$$\beta_{22}ANNUAL + \beta_{23}LAMBDA + + Variables\ of\ Interest + Subsidiary\ Country\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon_i \quad (3)$$

We control for the choice of a component auditor (an auditor other than the principal auditor) from our first stage model (*COMPONENT*). We also include firm-level and additional control variables to the discretionary accruals model following prior literature (e.g., Francis and Michas [2013], Francis and Yu [2009]) and include auditor change (*ADTCHANGE*), the number of years the client has been listed (*AGE*), the growth on total assets over the prior year for the industry (*INDGROWTH*), and for property plant and equipment (*PPEGROWTH*), client complexity measured by asset mix (*CATA*), short-term financial risk (*QUICK*), operating cash flow scaled by total assets (*PERFORM*), company size (*LTA*), the level of debt (*LEVERAGE*), annualized market-adjusted return (*ANNUAL*), the growth on sales over the prior year for the company (*SALESGROWTH*), the volatility of sales over the last three years (*SALES\_vol*), volatility of cash flow from operations over the last three years (*OCF\_vol*), total accruals in the prior year (*LAGTOTACC*), Market to Book Ratio (*MB*), and negative net income in the current year (*LOSS*). We also control for the natural log of subsidiaries (*LSUB*) and foreign subsidiaries (*FOREIGN*). Further, we include an indicator variable for the mining industry (*MINING*) given their specific characteristics and dominance in an Australian setting (Carson et al. [2012]). As well as Big 4 (*BIGN*), we include an indicator variable for the major non-Big 4 international networks, BDO and Grant Thornton (*LARGENONBIGN*). We have also included country fixed effects, to control for the countries where the foreign subsidiaries are incorporated, and industry fixed effects (as defined by two-digit GICS codes) in our outcome models. The inverse mills ratios are included to address the potential issue of selection bias (*LAMBDA*). The control variables are further defined in Table 1. The variables of interest in Eq. 3 are *ISA 600* (an

indicator variable for financial year ends on or after 15 December 2010) to test H1a, the interaction term *ISA600xBIGN* to test H1b and *ISA600xCOMPONENT* to test H2a across the total sample. For the sample of audits involving component auditors, *NETWORK* is used to test H2b.

We also use going-concern issuance as an additional test of audit quality. Hopwood, McKeown and Mutchler [1994] suggest that investigations of auditor reporting behavior with respect to decisions to issue a going-concern opinion should be conducted on samples that have been partitioned into stressed and non-stressed categories because auditors' decision processes are different for stressed and non-stressed companies. Consistent with this, and in line with prior research, the sample is restricted to potentially financially stressed firms, defined as firms with a current year loss (e.g. DeFond, Raghunandan and Subramanyam [2002], Geiger and Rama [2003], Carey and Simnett [2006]). The financially stressed sample with sufficient financial and audit data consists of 2,642 observations. Following prior literature (as summarized in Carson et al. [2013]), we use the following logit model to test our hypotheses. The probability to observe a going-concern modification is taken to be a function of the following variables (ignoring subscripts):

$$Pr(Y=OPINION | \mathbf{x})=F(\beta_0+ \beta_1COMPONENT + \beta_2CATA + \beta_3ADTCHANGE + \beta_4PBANK + \beta_5LTA + \beta_6LEVERAGE + \beta_7PERFORM + \beta_8CHGLEV + \beta_9CURRENT + \beta_{10}WC + \beta_{11}QUICK + \beta_{12}NEGEQ + \beta_{13}BIGN+ \beta_{14}LARGENONBIGN +\beta_{15}MINING + \beta_{16}LOPINION + \beta_{17}LSUB +\beta_{18}FOREIGN + \beta_{19}LAMBDA + + Variables of Interest + \sum\beta Subsidiary Country Fixed Effects + \sum\beta Industry Fixed Effects) \quad (4)$$

Subsequently, we add the following variables of interest to the model above: *ISA600*, *ISA600xBIGN* and *ISA600xCOMPONENT* to test hypotheses across the financially stressed group audit sample and *NETWORK* is used to test the hypothesis across the financially stressed sample of audits involving component auditors. The variables included in the model are defined in detail in Table 1. To summarize, we control for choice of component auditor from our stage one model (*COMPONENT*), auditor change (*ADTCHANGE*), the probability of bankruptcy (*PBANK*) using the Zmijewski [1984] model<sup>23</sup>; company size (*LTA*), leverage (*LEVERAGE*) and change in leverage (*CHGLEV*) since debt covenant violations are positively associated with the probability of issuing a going-concern opinion; liquidity measures that capture the availability of funds and the ability to quickly raise funds in relation to the firm's short term obligations (*CURRENT*), (*WC*), and (*QUICK*); negative shareholders' equity (*NEGEQ*); type of audit firm (*BIGN*) and (*LARGENONBIGN*); an indicator variable for mining companies (*MINING*); ); emphasis of matter/modified/qualified audit opinion in the prior year (*LOPINION*); the complexity (*LSUB*) and (*FOREIGN*); country fixed effects to control for the countries where the foreign subsidiaries are incorporated, industry fixed effects (as defined by two-digit GICS codes), and the inverse mills ratios for addressing selection bias (*LAMBDA*).

*4.1.2 Group Audit Arrangements and Audit Fees.* To examine the impact of group audit arrangements and the revision of ISA 600 on audit costs, we employ an audit fee model, which is specified as follows (ignoring subscripts):

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<sup>23</sup> The probability of bankruptcy using the Zmijewski model is calculated as: probability of bankruptcy =  $\Phi[-4.803 - 3.599(\text{return on assets}) + 5.406(\text{leverage}) - 0.100(\text{current ratio})]$ , where  $\Phi$  is the cumulative distribution function of the standard/unit normal distribution.

$$\begin{aligned}
LAF = & \alpha + \beta_1 \textit{COMPONENT} + \beta_2 \textit{LTA} + \beta_3 \textit{LSUB} + \beta_4 \textit{CATA} + \beta_5 \textit{QUICK} + \beta_6 \textit{LEVERAGE} \\
& + \beta_7 \textit{PERFORM} + \beta_8 \textit{FOREIGN} + \beta_9 \textit{OPINION} + \beta_{10} \textit{YE} + \beta_{11} \textit{LOSS} + \beta_{12} \textit{BIGN} + \beta_{13} \\
& \textit{LARGENONBIGN} + \beta_{14} \textit{MINING} + \beta_{15} \textit{GROWTH} + \beta_{16} \textit{SALESGROWTH} + \beta_{17} \textit{ABSDA} + \\
& \beta_{18} \textit{ADTCHANGE} + \beta_{19} \textit{LAMBDA} + \textit{Variables of Interest} + \textit{Subsidiary Country Fixed} \\
& \textit{Effects} + \textit{Industry Fixed Effects} + \varepsilon
\end{aligned} \tag{5}$$

The model for Australian data is derived from Craswell, Francis and Taylor [1995], Ferguson, Francis and Stokes [2003] and Carson and Fargher [2007] and controls for choice of an auditor other than the principal auditor (*COMPONENT*) as used in the first stage model, company size (*LTA*); asset growth (*GROWTH*), sales growth (*SALESGROWTH*), complexity and internationality of group audit structure (*LSUB*), (*FOREIGN*); inherent risk (*CATA*), (*QUICK*), (*LEVERAGE*);, profitability (*PERFORM*) and loss (*LOSS*); type of audit firm (*BIGN*) and (*LARGENONBIGN*); level of discretionary accruals (*ABSDA*); audit firm change (*ADTCHANGE*); an indicator variable for mining companies (*MINING*); and engagement attributes (*YE*), and emphasis of matter/modified/qualified audit opinion (*OPINION*). In line with the audit quality analysis, we include country fixed effects to control for the countries where the foreign subsidiaries are incorporated, industry fixed effects (as defined by two-digit GICS codes), and the inverse mills ratios for addressing selection bias (*LAMBDA*). The variables of interest are *ISA 600* and *ISA600xBIGN* for the total sample, and *NETWORK* for the component auditor sub-sample, and we refer again to Table 1 for detailed definitions of all the variables. To test our expectations, after modelling the auditor choice decision, we examine group audit fees which are deflated by CPI for each quarter as are total assets (consistent with Carson et al. 2012) to ensure that inflation is not the explanation for increases in audit fees over the eight year time period of our sample.

## 5. Results

Table 2 presents the descriptive statistics for all the variables in the analyses conducted in the study for the overall sample of MNE group audits, and for the key variables of interest split between, pre and post the revision of ISA 600.<sup>24</sup> Over the period 2006-2013 for our sample of group audits, the average absolute value of discretionary accruals is 10.4 percent of assets as shown in Table 2, Panel A. This Panel also demonstrates that discretionary accruals have significantly decreased from 10.7 percent pre-ISA 600 to 10.0 percent post-ISA 600 ( $t=1.979$ ,  $p<0.05$ ). Going concern opinion issuance has increased from 19.8 percent to 28.1 percent ( $t=6.538$ ,  $p<0.01$ ), a significant increase pre/post ISA 600. The natural logarithm of audit fees has significantly declined from 4.802 to 4.588 ( $t=6.003$ ,  $p<0.01$ ). In untabulated descriptives, we identify that the majority of multinational group audits are conducted wholly by the principal auditor (55 percent), with the Big 4 sub-sample having 51 percent audited wholly by the principal auditor compared to 59 percent for the non-Big 4 sub-sample. Twenty six percent of multinational group audits involve unaffiliated auditors, with 18 percent for the Big 4 sub-sample and 34 percent for the non-Big 4 sub-sample. A further 19 percent are conducted within the audit firm network, with Big 4 auditors utilizing their network (31 percent) compared to non-Big 4 auditors (seven percent). In line with the expectations of the increased work effort for the principal auditor as required by the revisions to ISA 600, Panel A demonstrates that ISA 600 is associated with an overall average increase in the work conducted by the principal auditor from 87.4 percent to 88.5 percent ( $t=2.073$ ,  $p<0.05$ ) and a corresponding decrease in the amount of

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<sup>24</sup> We separately winsorized the MNE group ( $n=4445$ ) and control group ( $n=2737$ ). The following variables are winsorized at the 1% and 99% levels: *LTA*, *CATA*, *LEVERAGE*, *PERFORM*, *LSUB*, *AGE*, *SALES**GROWTH*, *SALES\_vol*, *OCF\_vol*, *LAGTOTACC*, *MB*, *ANNUAL*, *PBANK*, *CHGLEV*, *CURRENT*, *WC*, and *LAF*. Three variables, *QUICK*, *GROWTH* and *PPEGROWTH*, are winsorized at 2.5% and 97.5% levels due to extreme skewness.

work undertaken by unaffiliated auditors. Interestingly, the amount of work undertaken by the principal auditor's network appears to be unchanged, with the significant decrease being reflected in the work undertaken by unaffiliated auditors ( $t=2.573$ ,  $p<0.01$ ). Further details of the descriptives for the sample are contained in Panel B, C, D and E (continuous variables for the total sample, going concern sample; control sample and going concern control sample) and Panel F (categorical variables for the same four samples). In Panel G, we outline the industry composition of our sample with the main industries being materials (34 percent), energy (16 percent), industrials (14 percent) and consumer discretionary (11 percent). Panel H, describes the sample composition by year, which increases from nine percent of observations in 2006 to 14 percent of observations in 2013, reflecting an increase in the number of companies listed on the ASX and the number of MNE group audits. The correlation matrix (not reported) for our control variables and variables of interest show that, as expected, large correlations are observed between measures of firm size, number of subsidiaries (local and foreign), volatility and audit fees.

#### INSERT TABLE 2

In Table 2 Panel I we outline the number of times where a MNE group has subsidiaries incorporated in a specific country or region.<sup>25</sup> The largest countries where MNE subsidiaries are incorporated are US (1,635 MNEs, 36.78 percent of our MNE sample), UK (1,225 MNEs, 27.56 percent) and New Zealand (1,048 MNEs, 23.58 percent). In our subsequent analysis, we control for country of incorporation for each of the subsidiaries for our MNE groups (i.e. each has at

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<sup>25</sup> We aggregate countries into regions where there are less than 100 observations for that country. The regions we use are United Kingdom and Ireland (other than United Kingdom), Central Asia, Pacific (other than Papua New Guinea and New Zealand), South America (other than Chile and Brazil), Asia (other than Japan, Philippines, Thailand, India, Indonesia, Malaysia, China, Hong Kong and Singapore), Central America (other than British Virgin Islands), Africa (other than Ghana, Namibia, Mauritius and South Africa) and Europe (other than Sweden, Spain, France, Netherlands, Germany and United Kingdom).

least one country fixed effect other than Australia) as well as an industry fixed effect for each MNE group.

In Table 3, we report our first stage model, for the choice of including a component auditor as an indicator variable for our MNE group audits. As discussed previously, we carefully control for country fixed effects based on the locations of the subsidiaries (as shown in Table 2, Panel H) and for industry fixed effects. We observe that the use of component auditors (Table 3, Column 1) is associated with larger clients (*LTA*) with higher complexity (*CATA*) and short-term financial risk (*QUICK*), as well as higher numbers of local (*LSUB*) and foreign subsidiaries (*FOREIGN*) and clients audited by BDO or Grant Thornton (*LARGENONBIGN*). Our instrumental variable capturing the percentage of subsidiaries located in English speaking countries (*PCTSUBSENGLISH*) is negative and significant at the 5 percent level.

#### INSERT TABLE 3

In Table 4, we present our analyses for the second stage discretionary accruals model, firstly outlining our results for MNE group audits (n=4,445) for *ISA 600* and *COMPONENT* (Column 1). We then split our sample between the pre-ISA 600 (n=2,524) period and the post-ISA 600 (n=1,921) period (Columns 2 and 3 respectively). We include the interaction term *COMPONENTxISA600* (Column 4) and *NETWORK* in Column 5. We analyse our control group of non-MNE groups not involving component auditors (Column 6) and analyse the impact of relative impact of ISA 600 on audits only involving component auditors in Columns 7 and 8 with a focus on clients of Big N firms (Columns 9 and 10)<sup>26</sup>. The variables of interest in Table 4 are the indicator variables *ISA600* (H1a), *ISA600xBIGN* (H1b), *ISA600xCOMPONENT* (H2a) and *NETWORK* (H2b).

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<sup>26</sup> Income-increasing and income-decreasing discretionary accruals are also calculated but are not tabulated for clarity of exposition and are discussed in our results section.

In Table 4, Column 1 we observe that ISA 600 is associated with an improvement in audit quality for absolute value of discretionary accruals ( $t=-2.004$ ,  $p<0.05$ ), providing support for H1a. In Columns 2 and 3 we split the sample into pre and post ISA 600 where the sign of the coefficient on *COMPONENT* switches from positive in the pre period to negative in the post period ( $t=1.502$ ,  $p=0.068$ , one-tailed) in supportive (but weak) evidence that discretionary accruals declined for MNE groups using component auditors as a result of ISA600. In examining H1b (Column 4), consistent with expectations, we find when combined with the main effect, that the improvement in audit quality is less significant for Big N audits ( $ISA600 \times BIGN$ ,  $t=1.892$ ,  $p<0.10$ ). In Column 6, we employ a sample of non-MNE group audits not involving component auditors as a control group that are equivalently impacted by other changes to auditing standards and the general economic environment but are less affected by the changes to ISA 600. We do not find that ISA 600 has impacted discretionary accruals for our control group. This strengthens our conclusions on H1a and H1b that the improvement in discretionary accruals is related to the changes brought about by the revisions to ISA 600.

In examining H2a (involvement of component auditors), Table 4 Column 5 shows that there is no additional improvement in audit quality for MNE audits involving component auditors post the ISA 600 improvement. However, in examining H2b, which compares network versus unaffiliated in a sub-sample of audits involving component auditors (Column 7), we find support for regulatory concerns in our MNE group audits sample where the variable *NETWORK* is significantly positive for absolute discretionary accruals ( $t=1.792$ ,  $p<0.10$ ), indicating that there is lower audit quality where network auditors are involved. Furthermore, the interaction variable  $ISA600 \times NETWORK$  is not significant in Column 8. This suggests that the concerns of regulators regarding audit quality of group audits involving networks are warranted and that these concerns

have not been fully addressed by the implementation of the revised ISA 600. Consistent with H1a, we also find in this subsample of group audits with a component auditor an overall improvement in audit quality after ISA 600 ( $t=-1.778$ ,  $p<0.10$ ). An analysis of Big N component audits in Column 9, supports the results reported in Column 4 showing no overall improvement in audit quality due to ISA 600 for this group of audits, and provides further evidence of lower quality associated with Big N audits involving networks ( $t=2.098$ ,  $p<0.05$ ). Column 10 confirms that there is no change in audit quality for these audits.

#### INSERT TABLE 4

In our second test related to audit quality (presented in Table 5), we consider a financially stressed sub-sample of loss-making group audits. We note that while the population of MNE group audits are large and generally financially healthy, our analysis includes the period of the financial crisis in Australia. We outline similar analyses as for discretionary accruals being MNE group audits (Column 1), pre-ISA 600 and post-ISA 600 (Columns 2 and 3 respectively), an analysis of impact of Big N (Column 4), MNE group audits where *COMPONENT* is interacted with *ISA600* (Column 5), non-MNE groups not involving component auditors (Column 6), and a sub-sample of audits involving component auditors (Columns 7 and 8). The major findings in Table 5 demonstrate a significant improvement in audit quality after the revision of ISA 600 for all MNEs ( $t=3.469$ ,  $p<0.01$ ). However, we also find a similar result in our control group (Column 6 where  $t=2.677$ ,  $p<0.01$ ). In relation to *NETWORK* and *COMPONENT*, we do not find evidence of a differential impact on audit reporting outcomes pre and post ISA 600. We also do not find evidence to support a differential impact of ISA 600 related to type of principal audit firm.

#### INSERT TABLE 5

In Table 6, we present our analysis of audit fees, being MNE group audits (Column 1), impact of Big N (Column 2), impact of ISA600 on component audits (Column 3), and impact of ISA600 on networks audits (Columns 4 and 5) and control group (Column 6). The descriptive statistics for the variables included in the audit fee model are reported in Table 2. We use a standard audit fee model with an additional variable for the choice of a component auditor. In all cases, we find a large economically significant increase in audit fees associated with the choice of a component auditor (*COMPONENT*,  $t=11.69$ ,  $p<0.01$ ). Then, we investigate whether audit fees for group audits increased as a result of the revised ISA 600. Table 6 shows that ISA 600 has not resulted in an increase in costs to clients for group audits, providing no evidence that any increase in audit costs resulting from additional effort under revised ISA 600 was passed onto clients, failing to support H3. In fact, potentially surprisingly, we find that group audit costs for MNE audits have actually fallen after the revisions to ISA 600 ( $t=-4.669$ ,  $p<0.01$ ). This is additionally more significant for Big N clients (Column 2,  $t=-1.903$ ,  $p<0.10$ ) and is consistent with the finding of Carson et al. [2012] on similar Australian data, who found that the Big 4 audit fee premium actually decreased for the large MNEs, reflecting the competitive nature of this part of the market. In Columns 4 and 5, for the component auditor sample, we do not find evidence that there is any difference in audit fees charged when a network auditor is used compared to an unaffiliated auditor. This is consistent with a competitive audit market for multinational clients, where the audit work for components can be performed by either networks or unaffiliated auditors. Our control group also shows that there is no significant change in audit fees associated with the ISA 600 revision period, providing evidence that the decrease in audit fees post-ISA 600 is associated with Big N MNEs.

INSERT TABLE 6

## 5.1 CONTROL GROUP

Even though we use a pre-post design, it is possible that the results that we observe are due to other factors impacting quality and costs (including other revised standards, legislative impacts and changes in the economic environment). As discussed throughout the analysis, to mitigate the concern that our results may be driven by factors other than the revision to ISA 600, we take the closest comparison group which, while subject to ISA 600, is not affected by the additional requirements related to principal's supervision and responsibilities related to the use of component auditors. These are groups of companies in Australia which do not have MNE operations, nor involve the use of component auditors. Over the period of 2006-2013, we identify 2,737 non-MNE group audits not involving component auditors, and we run the equivalent analyses for our measures of audit quality and audit cost. As reported in Table 4, Column 6, we find the revision of ISA 600 had no effect on audit quality as measured using absolute value discretionary accruals for our control group. In Table 5, Column 6, we do identify an ISA 600 effect for our control group, which suggests that there has been an increase in going-concern modifications for all Australian companies. The analysis of audit fees in Table 6, Column 6 supports our findings in relation to no increase in audit fees due to ISA 600.

## 5.2 OTHER ANALYSES AND SENSITIVITY ANALYSES

In our analyses reported to date we have used an indicator variable to identify the inclusion of other auditors in the group audit. This is justified on the basis that such auditors will only be used in MNE audits for situations involving significant components, or requiring significant audit work. As we note earlier, for over 91 percent of observations involving component auditors, the proportion of the total audit fee paid to component auditors exceeds five percent suggesting that component auditors are involved in a material amount of the group audit. As an additional

analysis we also replace *NETWORK* with *NETWORK(%)*, a continuous variable based on the audit fees paid to the network as a percentage of total group audit fees. Our results remain qualitatively the same, except that *NETWORK(%)* is now just below conventional levels of significance in analysis consistent with Table 4, Column 7 ( $p=0.082$ , one-tailed).

We also examine separately signed accruals, as positive income-increasing accruals are likely to have different consequences to negative income-decreasing accruals for auditors. In examining H1a, ISA 600 is only significant for the income-decreasing accruals ( $t=1.758$ ,  $p<0.10$ ). In examining H2a (involvement of component auditors), we only find support for the income-decreasing accruals ( $t=3.233$ ,  $p<.01$ ), indicating that there is lower audit quality for these types of group audits. We find that this result is in both the pre-ISA 600 period, and the post-ISA 600 period, indicating that there is further improvement that can still occur for network auditors compared with other MNE group audits not involving component auditors.

Although we have controlled for the country of incorporation of subsidiaries in all of our analyses, we recognize that the choice of network versus unaffiliated auditor can also be a function of the location of the offices of the principal auditor. We therefore separately run our discretionary accruals analysis for the Big 4 audit firms only (Table 4, Column 9), as these firms have a physical presence in all significant locations. We find that for MNEs using a component auditor with a Big 4 signing auditor, that network auditors have significantly higher discretionary accruals ( $t=2.098$ ,  $p<0.05$ ), suggesting that the issues around audit quality associated with use of network auditors is not related to their physical presence and availability.

As noted earlier we recognise that the financial crisis coincides with part of our pre-ISA 600 period. This is a risk to our analysis if the improvement in audit quality post-ISA 600 is attributable to this event. As sensitivity analysis we drop the years of 2007-2008 and rerun our

analysis. Our results are qualitatively the same. It should also be recognised that the financial crisis did not impact Australia as hard as other countries, with Australia recording no bank failures and no significant decrease in Gross Domestic Product.

#### *6. Conclusions and Future Research*

Significant concerns have been raised by regulators about the quality of the auditing of MNE groups, in particular audits requiring the work of component auditors. To address these concerns, revisions have been made to ISA 600, aimed at strengthening group audit procedures and enhancing the quality of group audits. It is essentially these initiatives on which the PCAOB has modelled their Release No. 2016-002 of April 12, 2016. We make use of unique Australian disclosures to investigate the impact of the revised ISA 600 on the group audit arrangements, audit quality and audit fees for such MNE groups and to inform the standard-setting initiatives of the PCAOB.

We find that there is evidence to suggest that ISA 600 has increased the audit effort undertaken by principal auditors, consistent with increased responsibilities for principal auditors in the revised standard. We note that this has been at the expense of a decline in the relative use of unaffiliated auditors after the implementation of the revised ISA 600. We further document that audit quality improved after the implementation of ISA 600, and this appears to be most pronounced for the non-Big 4 auditors. Additionally, we find that there are audit quality issues for MNE group audits involving network component auditors, and this appears not to be affected by the ISA 600 revisions. This suggests that the revision of ISA 600 is not yet entirely working as intended for all groups of clients and auditors. For our second audit quality metric, appropriateness of going-concern opinion, we find an improvement in audit quality post the revisions to ISA 600, but as we observe a similar finding for our control group of non-MNE

group audits not involving component auditors, we are unable to attribute this improvement to the revisions. In examining the costs of these revisions we find that while group audits involving component auditors are more costly, there is no evidence of an increase in audit fees attributable to the revision of ISA 600.

Our findings also highlight that a maintained assumption in the auditing research literature, that the audit firm which signs the audit opinion on these group financial statements has conducted the audit of all the entities within the group, should be viewed with caution as we document that for 45 percent of MNE groups, component auditors outside the principal auditor are involved. This maintained assumption could lead to potentially erroneous conclusions as the quality of the financial statements has been assumed to be directly related to the identity of the firm signing the audit opinion.

Our findings have implications for both regulators and the auditing profession, including the PCAOB and IAASB who are currently contemplating changes to group audit requirements. In line with the changes to the principal auditors' work effort in revised ISA 600, we find that principal auditors are more involved and undertake more work when working with MNE clients involving component auditors. The identified improvement in audit quality outlined above related to these changes also provides evidence relevant for the PCAOB to consider changes to their standards which are aligned with this earlier revision by the IAASB to ISA 600. Our findings also suggest that there is further room for improvement in relation to group audits involving network auditors and it is in this area that the IAASB may wish to direct its current revision efforts.

While our research has benefitted from the unique Australian disclosures regarding the amount of fees paid to component auditors, our ability to comment further is limited by the fact

that the exact identity of the component auditors is not identified in the standard audit report. As we outlined earlier, it has been proposed by both the IAASB [2012] and the PCAOB [2015] that this be rectified. Our findings on variation in audit quality for different group audit arrangements are consistent with the suggestion that such disclosures would be informative to investors and users of the financial statements.

It is also recognized by the IAASB [2015b] that MNE audits involving the work of component auditors who are situated in overseas jurisdictions continue to be an issue. It does however appear that the revisions to ISA 600 which we examined are the major changes, with the further areas of concern suggested being the “strengthening” or “clarifying” requirements contained in the revised ISA 600. There are, however, continuing concerns about the extent of the group engagement team’s involvement in the work of the component auditor (IAASB [2015b] paras 235-243).

Our study is subject to the following limitations. We acknowledge that discretionary accruals and going-concern issuance are only two of the possible aspects of audit quality that could be examined (DeFond and Zhang [2014]). However, other commonly employed measures (such as restatements) are not available for Australian firms. We also acknowledge that it is challenging to address endogeneity. Further, while we control for the jurisdictions in which the subsidiaries are incorporated, it is not clear to what extent our results hold in other settings. Australia has a relatively strong institutional setting in terms of investor protection, enforcement and public oversight. Given that we find audit quality differences in the Australian setting, it is likely that the differences in audit quality may even be larger for group audits conducted in countries with relatively weaker institutions and enforcement to ensure audit quality. This could be addressed in future research, for example, as data becomes available under the new PCAOB rules.

Furthermore, as time develops, it will be interesting to investigate how public disclosure of group audit arrangements in audit reports impacts both audit quality and user perceptions of audit quality across the globe.

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**TABLE 1**  
*Variable Descriptions*

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*ABSDA* is absolute value of discretionary accruals scaled by average total assets;  
*ADTCHANGE* is an indicator variable, 1 if there is an audit firm change, 0 otherwise;  
*AGE* is the number of years the client firm has been listed on the ASX;  
*ANNUAL* is the annualized market-adjusted return;  
*BIGN* is an indicator variable, 1 if the audit firm is a Big 4 auditor, 0 otherwise;  
*CATA* is the ratio of current assets to total assets;  
*CHGLEV* is calculated as the change in leverage;  
*COMPONENT* is an indicator variable, 1 if any audit fees are paid to an auditor other than the principal auditor, 0 otherwise;  
*CURRENT* is calculated as current assets divided by current liabilities;  
*FOREIGN* is an indicator variable for the proportion of foreign subsidiaries greater than 25%, 0 otherwise;  
*GICS Sector* variables are industry indicator variables;  
*GROWTH* is calculated as  $\text{Total Assets}_t / \text{Total Assets}_{t-1}$ ;  
*INDGROWTH* is calculated as  $\sum \text{Total Assets}_{i,t} / \sum \text{Total Assets}_{i,t-1}$  by two-digit GIC code;  
*ISA600* is an indicator variable, 1 if year end is on or after 15 December 2010, otherwise zero;  
*LAF* natural log of the sum of total audit fees paid to the principal auditor, network auditor and unaffiliated auditors (\$ thousands), Consumer Price Index adjusted;  
*LAGTOTACC* is calculated as total accruals in year (t-1);  
*LARGENONBIGN* is an indicator variable, 1 if audit firm is BDO or Grant Thornton, 0 otherwise;  
*LEVERAGE* is the ratio of total liabilities to total assets;  
*LOSS* is an indicator variable, 1 for a loss in the current year, 0 otherwise;  
*LSUB* is the natural log of the number of subsidiaries;  
*LOPINION* is an indicator variable, 1 for a qualified, modified or emphasis of matter opinion in the prior year, 0 otherwise;  
*LTA* is calculated as natural log of Consumer Price Index adjusted total assets at year end (\$ millions);  
*MB* is the market to book ratio at year end;  
*MINING* is an indicator variable, 1 if client firm is in the mining industry, 0 otherwise;  
*NEGEQ* is an indicator variable, 1 where total equity is negative, 0 otherwise;  
*NETWORK* is an indicator variable, 1 where audit fees only paid to the network are greater than zero, 0 otherwise;  
*NETWORK (%)* is a continuous variable based on the audit fees paid to the network as a percentage of total group audit fees;  
*OCF\_vol* is the volatility of cash flow from operations over the last three years;  
*OPINION* is an indicator variable, 1 for a qualified, modified or emphasis of matter opinion, 0 otherwise;  
*PBANK* is the probability of bankruptcy calculated using the Zmijewski model;  
*PCTSUBSENGLISH* is the percentage of total subsidiaries incorporated in an English speaking country (official or de jure);  
*PERFORM* is calculated as operating cash flow scaled by total assets;  
*PPEGROWTH* is calculated as percentage change in gross property plant and equipment;  
*PRINCIPAL* is an indicator variable, 1 if all of the audit fees are paid to the principal auditor, 0 otherwise;  
*PRINCIPAL (%)* the audit fees paid to the principal auditor as a percentage of total group audit fees;  
*QUICK* is the ratio of current assets less inventories to current liabilities;  
*SALES\_vol* is the volatility of sales calculated over the last three years;  
*SALESGROWTH* is calculated as sales in current year less sales in previous year divided by previous year's sales;  
*UNAFFILIATED (%)* the percentage of audit fees charged by unaffiliated auditors as a percentage of total group audit fees;  
*WC* is calculated as working capital divided by total assets;  
*YE* is an indicator variable, 1 if a non-June fiscal year end, 0 otherwise;  
*2006, 2007, 2008, 2009, 2010, 2011, 2012* and *2013* are year indicator variables.

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**TABLE 2**  
*Descriptive Statistics*

<b>Panel A: Key variables of interest</b>				
Variables	(1)	(2)	(3)	Test of Difference (2) vs (3) t-value
	Total Sample (n=4,445) Mean/S.D.	Pre-ISA600 (n=2,524) Mean/S.D.	Post-ISA600 (n=1,921) Mean/S.D.	
<i>ABSDA</i>	0.104 (0.117)	0.107 (0.119)	0.100 (0.116)	1.979**
<i>OPINION</i>	0.234 (0.423)	0.198 (0.398)	0.281 (0.450)	-6.538***
<i>LAF</i>	4.710 (1.187)	4.802 (1.213)	4.588 (1.141)	6.003***
<i>PRINCIPAL (%)</i>	0.879 (0.182)	0.874 (0.187)	0.885 (0.174)	-2.073**
<i>NETWORK (%)</i>	0.053 (0.135)	0.053 (0.136)	0.053 (0.135)	-0.025
<i>UNAFFILIATED (%)</i>	0.068 (0.148)	0.073 (0.156)	0.061 (0.136)	2.573***

  

<b>Panel B: Continuous variables</b>						
Variables	Total Sample (n=4,445)					
	Mean	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile
<i>ABSDA</i>	0.10	0.01	0.03	0.06	0.13	0.26
<i>AGE</i>	11.96	3	6	10	19	23
<i>ANNUAL</i>	0.09	-0.69	-0.48	-0.11	0.33	1
<i>CATA</i>	0.43	0.1	0.21	0.39	0.61	0.84
<i>CHGLEV</i>	0.01	-0.12	-0.04	0	0.05	0.16
<i>CURRENT</i>	5.82	0.66	1.19	2.17	5.58	14.64
<i>INDGROWTH</i>	1.12	0.97	1.02	1.08	1.19	1.33
<i>LAF</i>	4.71	3.35	3.79	4.51	5.41	6.39
<i>LAGTOTACC</i>	-0.10	-0.34	-0.14	-0.05	0.00	0.08
<i>LEVERAGE</i>	0.33	0.03	0.09	0.27	0.51	0.66
<i>LSUB</i>	2.08	0.69	1.39	1.95	2.64	3.69
<i>LTA</i>	3.99	1.56	2.49	3.62	5.23	6.95
<i>MB</i>	2.47	0.40	0.75	1.49	2.89	5.41
<i>NETWORK (%)</i>	0.05	0.00	0.00	0.00	0.00	0.23
<i>OCF_vol</i>	0.09	0.01	0.02	0.05	0.11	0.21
<i>PBANK</i>	0.11	0.00	0.00	0.00	0.03	0.41
<i>PCTSUBSENGLISH</i>	0.86	0.50	0.80	1.00	1.00	1.00
<i>PERFORM</i>	-0.09	-0.42	-0.15	-0.02	0.08	0.16
<i>PPEGROWTH</i>	0.92	-0.43	-0.16	0.03	0.41	1.72
<i>PRINCIPAL (%)</i>	0.88	0.59	0.79	1.00	1.00	1.00
<i>QUICK</i>	5.12	0.49	0.90	1.76	5.35	14.43
<i>SALES_vol</i>	0.14	0.00	0.00	0.05	0.18	0.39
<i>SALESGROWTH</i>	1.16	-0.55	-0.07	0.00	0.18	0.85
<i>UNAFFILIATED (%)</i>	0.07	0.00	0.00	0.00	0.02	0.29
<i>WC</i>	0.21	-0.08	0.04	0.17	0.38	0.63

**TABLE 2—continued**

<b>Panel C: Continuous variables</b>						
Variables	Going Concern Sample (n=2,642)					
	Mean	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile
<i>CATA</i>	0.42	0.08	0.17	0.36	0.64	0.90
<i>CHGLEV</i>	0.03	-0.12	-0.03	0.01	0.07	0.22
<i>CURRENT</i>	7.78	0.56	1.27	3.59	9.02	18.70
<i>LEVERAGE</i>	0.26	0.02	0.05	0.13	0.36	0.66
<i>LSUB</i>	1.64	0.69	1.10	1.61	2.08	2.56
<i>LTA</i>	2.99	1.23	1.94	2.86	3.80	4.95
<i>PBANK</i>	0.16	0	0	0	0.08	0.93
<i>PERFORM</i>	-0.22	-0.61	-0.29	-0.11	-0.03	0.02
<i>QUICK</i>	7.11	0.44	1.04	3.39	8.91	18.68
<i>WC</i>	0.23	-0.13	0.04	0.20	0.45	0.72
<b>Panel D: Continuous variables</b>						
Variables	Control Sample (n=2,737)					
	Mean	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile
<i>ABSDA</i>	0.11	0.01	0.03	0.07	0.14	0.27
<i>AGE</i>	10.83	3	5	8	18	23
<i>ANNUAL</i>	0.15	-0.68	-0.47	-0.13	0.36	1.14
<i>CATA</i>	0.40	0.09	0.18	0.35	0.57	0.84
<i>INDGROWTH</i>	1.12	0.97	1.02	1.09	1.23	1.35
<i>LAGTOTACC</i>	-0.09	-0.36	-0.14	-0.04	0.01	0.11
<i>LEVERAGE</i>	0.28	0.02	0.05	0.19	0.43	0.66
<i>LSUB</i>	1.24	0	0.69	1.10	1.79	2.48
<i>LTA</i>	3.33	1.22	2.07	3.14	4.36	5.66
<i>MB</i>	2.27	0.43	0.74	1.37	2.67	5.16
<i>OCF_vol</i>	0.09	0.01	0.02	0.05	0.12	0.23
<i>PERFORM</i>	-0.09	-0.40	-0.15	-0.04	0.05	0.15
<i>PPEGROWTH</i>	0.99	-0.43	-0.17	0.04	0.45	1.60
<i>QUICK</i>	6.73	0.49	0.96	2.60	8.08	18.15
<i>SALESGROWTH</i>	1.47	-0.85	-0.03	0.00	0.15	0.94
<i>SALES_vol</i>	0.13	0	0.00	0.02	0.17	0.44
<b>Panel E: Continuous variables</b>						
Variables	Going Concern Control Sample (n=1,837)					
	Mean	10 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile
<i>CATA</i>	0.40	0.08	0.17	0.33	0.60	0.90
<i>CHGLEV</i>	0.02	-0.10	-0.03	0.003	0.06	0.20
<i>CURRENT</i>	9.31	0.66	1.54	4.43	10.77	22.75
<i>LEVERAGE</i>	0.22	0.02	0.03	0.09	0.30	0.60
<i>LSUB</i>	1.01	0	0	1.10	1.61	2.08
<i>LTA</i>	2.72	0.93	1.74	2.59	3.56	4.54
<i>PBANK</i>	0.13	0.000	0.000	0.000	0.03	0.70
<i>PERFORM</i>	-0.20	-0.53	-0.25	-0.09	-0.03	-0.002
<i>QUICK</i>	8.56	0.53	1.31	4.34	10.72	22.67
<i>WC</i>	0.25	-0.08	0.06	0.20	0.44	0.75

**TABLE 2—continued**

<b>Panel F: Categorical variables</b>				
	Total Sample (n=4,445)	Going Concern Sample (n=2,642)	Control Sample (n=2,737)	Going Concern Control Sample (n=1,837)
Variables	Mean			
<i>ADTCHANGE</i>	0.1	0.12	0.09	0.10
<i>BIG4</i>	0.5	0.37	0.39	0.30
<i>COMPONENT</i>	0.45	0.39	N.A.	N.A.
<i>FOREIGN</i>	0.77	0.87	N.A.	N.A.
<i>ISA600</i>	0.43	0.46	0.39	0.41
<i>LARGENONBIGN</i>	0.17	0.21	0.22	0.25
<i>LOPINION</i>	0.16	0.25	0.19	0.25
<i>LOSS</i>	0.59	1	0.67	1
<i>MINING</i>	0.34	0.46	0.5	0.62
<i>NEGEQ</i>	0.02	0.03	0.02	0.03
<i>NETWORK</i>	0.19	0.12	N.A.	N.A.
<i>OPINION</i>	0.23	0.36	0.24	0.33
<i>PRINCIPAL</i>	0.55	0.61	1	1
<i>UNAFFILIATED</i>	0.26	0.27	N.A.	N.A.
<i>YE</i>	0.15	0.12	0.10	0.08

  

<b>Panel G: Industry composition</b>	
GICS Industry Group	% of Total Sample
ENERGY	16.31
MATERIALS	33.88
INDUSTRIALS	13.79
CONSUMER DISCRETIONARY	11.14
CONSUMER STAPLES	1.44
HEALTH	10.28
INFORMATION TECHNOLOGY	9.29
TELECOMMUNICATIONS	1.69
UTILITIES	2.18
TOTAL	100.00

  

<b>Panel H: Sample composition by year</b>	
Years	% of Total Sample
2006	9.07
2007	10.37
2008	12.35
2009	12.35
2010	14.13
2011	14.06
2012	13.77
2013	13.90
TOTAL	100.00

TABLE 2—continued

Panel I: Countries of incorporation of MNE subsidiaries		
Country/Region	Frequency	Proportion of MNEs with at least one subsidiary
United States	1635	36.78%
United Kingdom <sup>1</sup>	1225	27.56%
New Zealand	1048	23.58%
Singapore	715	16.09%
Hong Kong	605	13.61%
Europe – Other <sup>2</sup>	505	11.36%
China	422	9.49%
Africa – Other <sup>3</sup>	406	9.13%
Canada	378	8.50%
Malaysia	362	8.14%
Central America – Other <sup>4</sup>	326	7.33%
British Virgin Islands	316	7.11%
Indonesia	316	7.11%
South Africa	296	6.66%
Asia – Other <sup>5</sup>	262	5.89%
Germany	260	5.85%
India	203	4.57%
Papua New Guinea	200	4.50%
Netherlands	199	4.48%
Central Asia – Other <sup>6</sup>	185	4.16%
South America – Other <sup>7</sup>	185	4.16%
Brazil	182	4.09%
Thailand	167	3.76%
Pacific – Other <sup>8</sup>	165	3.71%
Mauritius	153	3.44%
France	144	3.24%
Chile	143	3.22%
Spain	136	3.06%
Philippines	133	2.99%
Namibia	125	2.81%
Sweden	112	2.52%
Ghana	102	2.29%

<sup>1</sup> Includes Channel Islands, England, Guernsey, Ireland, Isle of Man, Jersey, Northern Ireland, Scotland and United Kingdom.

<sup>2</sup> Includes Austria, Belgium, Bosnia, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Georgia, Gibraltar, Greece, Hungary, Italy, Lithuania, Luxembourg, Macedonia, Malta, Montenegro, Norway, Poland, Portugal, Romania, Russia, Siberia, Slovakia, Slovak Republic, Slovenia, Serbia, Switzerland, Turkey and Ukraine.

<sup>3</sup> Includes Algeria, Angola, Botswana, Burkina Faso, Burundi, Cameroon, Congo, Ethiopia, Gabon, Gambia, Guinea, Kenya, Ivory Coast, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Tanzania, Uganda, Zambia and Zimbabwe.

<sup>4</sup> Includes Antigua, Bahamas, Barbados, Belize, Bermuda, British Anguilla, Cayman Islands, Costa Rica, Dominican Republic, El Salvador, Honduras, Jamaica, Mexico, Netherlands Antilles, Panama, Puerto Rico, Trinidad and Turks and Caicos Islands.

<sup>5</sup> Includes Bangladesh, Brunei, Cambodia, East Timor, Korea, Kyrgyz Republic, Laos, Macau, Mongolia, Pakistan, Sri Lanka, Taiwan, and Vietnam.

<sup>6</sup> Includes Afghanistan, Bahrain, Egypt, Iran, Iraq, Israel, Jebel Ali Free Zone, Kazakhstan, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates and Uzbekistan.

<sup>7</sup> Includes Argentina, Bolivia, Colombia, Ecuador, Guyana, Paraguay, Peru, Uruguay, and Venezuela.

<sup>8</sup> Includes American Samoa, Cook Islands, Fiji, New Caledonia, Samoa, Solomon Islands, Tonga, Western Samoa and Vanuatu.

Variables are defined in Table 1.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10. All tests are two-tailed.

**TABLE 3***Choice of Component Auditor Model: First Stage Model (Probit)*

Variables	(1)
	Total Sample (n=4,445) Coeff. (z-value)
<i>LTA</i>	0.104*** (3.615)
<i>CATA</i>	0.444*** (3.223)
<i>QUICK</i>	-0.00872** (-2.199)
<i>LEVERAGE</i>	-0.0139 (-0.102)
<i>PERFORM</i>	0.0953 (0.855)
<i>LOSS</i>	-0.0580 (-0.757)
<i>MINING</i>	0.0905 (0.879)
<i>BIGN</i>	-0.0293 (-0.347)
<i>LARGENONBIGN</i>	0.186** (2.084)
<i>PCTSUBSENGLISH</i>	-0.404** (-2.044)
<i>LSUB</i>	0.134** (2.440)
<i>FOREIGN</i>	0.629*** (6.584)
<i>CONSTANT</i>	-1.274*** (-4.922)
INDUSTRY FIXED EFFECTS	YES
COUNTRY FIXED EFFECTS	YES
Pseudo R-squared	0.124

Variables are defined in Table 1.

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.10. All tests are two-tailed.

All models are estimated using robust standard errors and clustered at firm level.

**TABLE 4**  
*Discretionary Accruals Models (Absolute Values)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total Sample	Pre-ISA600	Post-ISA600	Total Sample	Total Sample	Control Group	Component Sample	Component Sample	Big N	Big N
	(n=4,445)	(n=2,524)	(n=1,921)	(n=4,445)	(n=4,445)	(n=2,737)	(n=2,007)	(n=2,007)	Component Sample (n=1,091)	Component Sample (n=1,091)
Variables	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)
<i>ISA600</i> (H1a)	-0.00702** (-2.004)			-0.0133** (-2.461)	-0.00445 (-0.923)	0.00423 (0.959)	-0.00876* (-1.778)	-0.0125* (-1.776)	0.000429 (0.0732)	-0.00477 (-0.467)
<i>ISA600xBIGN</i> (H1b)				0.0128* (1.892)						
<i>ISA600xCOMPONENT</i> (H2a)					-0.00571 (-0.843)					
<i>NETWORK</i> (H2b)							0.00863* (1.792)	0.00481 (0.773)	0.0114** (2.098)	0.00811 (1.157)
<i>ISA600xNETWORK</i>								0.00883 (0.974)		0.00808 (0.685)
<i>COMPONENT</i>	-0.00234 (-0.637)	0.00264 (0.559)	-0.00858 (-1.502)	-0.00235 (-0.641)	0.000129 (0.0279)					
<i>ADTCHANGE</i>	-0.00427 (-0.766)	-0.00665 (-0.858)	-0.00252 (-0.320)	-0.00429 (-0.772)	-0.00430 (-0.771)	0.00117 (0.166)	-0.0117 (-1.548)	-0.0118 (-1.568)	-0.0100 (-0.890)	-0.0102 (-0.909)
<i>AGE</i>	3.89e-05 (0.160)	-0.000463 (-1.394)	0.000509 (1.436)	3.11e-05 (0.128)	3.77e-05 (0.155)	0.000159 (0.473)	-4.04e-06 (-0.0125)	-1.72e-05 (-0.0528)	-1.03e-05 (-0.0262)	-2.60e-05 (-0.0659)
<i>INDGROWTH</i>	0.00660 (0.725)	0.0198* (1.730)	-0.0287 (-1.445)	0.00687 (0.757)	0.00661 (0.727)	0.00329 (0.204)	0.0189 (1.373)	0.0190 (1.376)	-0.00619 (-0.400)	-0.00630 (-0.408)
<i>CATA</i>	0.0296** (2.321)	0.0329** (2.339)	0.00856 (0.389)	0.0293** (2.306)	0.0300** (2.358)	0.0252* (1.851)	0.0358*** (2.644)	0.0358*** (2.647)	0.0483*** (2.773)	0.0484*** (2.780)
<i>QUICK</i>	-0.000698** (-2.143)	-0.00106*** (-2.598)	-0.000180 (-0.380)	-0.000696** (-2.141)	-0.000703** (-2.162)	-0.000285 (-0.947)	-0.00102*** (-2.628)	-0.00103*** (-2.646)	-0.000854* (-1.656)	-0.000865* (-1.666)
<i>PERFORM</i>	-0.0556*** (-4.653)	-0.0681*** (-4.837)	-0.0419** (-2.162)	-0.0554*** (-4.639)	-0.0555*** (-4.641)	-0.0437** (-2.356)	-0.0310* (-1.740)	-0.0311* (-1.752)	-0.00552 (-0.207)	-0.00528 (-0.198)
<i>LTA</i>	-0.0137*** (-5.379)	-0.0131*** (-4.678)	-0.0167*** (-4.562)	-0.0138*** (-5.443)	-0.0136*** (-5.382)	-0.0106*** (-4.364)	-0.0115*** (-4.898)	-0.0116*** (-4.946)	-0.0118*** (-4.789)	-0.0119*** (-4.808)
<i>LEVERAGE</i>	0.0422*** (4.050)	0.0269** (2.044)	0.0568*** (3.351)	0.0427*** (4.106)	0.0423*** (4.059)	0.0552*** (3.309)	0.0171 (1.122)	0.0166 (1.092)	0.0394* (1.687)	0.0383 (1.636)
<i>LOSS</i>	-0.0120** (-2.191)	-0.00981 (-1.327)	-0.0197** (-2.355)	-0.0121** (-2.208)	-0.0119** (-2.182)	-0.0149** (-2.108)	0.000555 (0.0712)	0.000411 (0.0527)	-0.00235 (-0.246)	-0.00249 (-0.261)
<i>PPEGROWTH</i>	-0.000322 (-0.677)	0.000269 (0.431)	-0.00103 (-1.506)	-0.000333 (-0.701)	-0.000323 (-0.679)	0.000791 (1.038)	-0.000342 (-0.501)	-0.000367 (-0.537)	0.000283 (0.246)	0.000295 (0.257)
<i>MINING</i>	-0.00970 (-1.543)	-0.0190** (-2.228)	0.00292 (0.321)	-0.00958 (-1.522)	-0.00955 (-1.517)	0.00500 (0.669)	-0.00595 (-0.668)	-0.00596 (-0.669)	-0.00470 (-0.494)	-0.00486 (-0.509)
<i>BIGN</i>	0.00187 (0.417)	-0.00126 (-0.210)	0.00768 (1.102)	-0.00340 (-0.636)	0.00194 (0.433)	-0.00208 (-0.336)	-0.00551 (-0.871)	-0.00525 (-0.828)		
<i>LARGENONBIGN</i>	-0.00352 (-0.563)	-0.00183 (-0.241)	-0.0105 (-0.995)	-0.00293 (-0.467)	-0.00333 (-0.535)	-0.0227*** (-3.803)	-0.0148* (-1.944)	-0.0145* (-1.911)		
<i>LSUB</i>	0.00758** (2.131)	0.0125*** (3.251)	-0.00101 (-0.161)	0.00745** (2.098)	0.00770** (2.176)	0.00239 (0.771)	0.00782* (1.921)	0.00796* (1.955)	0.00765 (1.612)	0.00775 (1.627)
<i>FOREIGN</i>	0.00830 (0.690)	0.0114 (0.929)	-0.00620 (-0.350)	0.00784 (0.654)	0.00851 (0.709)		0.00247 (0.415)	0.00262 (0.439)	0.00626 (0.996)	0.00651 (1.030)
<i>SALESGROWTH</i>	0.000378 (1.501)	-0.000112 (-0.448)	0.00156*** (2.846)	0.000371 (1.472)	0.000378 (1.501)	0.000229* (1.790)	0.000374 (1.273)	0.000372 (1.265)	0.000196 (0.736)	0.000188 (0.706)
<i>SALES_vol</i>	0.00777 (0.773)	-0.00182 (-0.170)	0.0298 (1.569)	0.00777 (0.770)	0.00791 (0.787)	-0.0200 (-1.413)	0.00264 (0.189)	0.00232 (0.166)	0.00195 (0.150)	0.00168 (0.129)
<i>OCF_vol</i>	0.227***	0.221***	0.234***	0.226***	0.226***	0.250***	0.282***	0.282***	0.310***	0.311***

	(7.719)	(5.981)	(5.278)	(7.684)	(7.713)	(6.691)	(5.490)	(5.493)	(6.316)	(6.369)
<i>LAG_TOTACC</i>	-0.0185*	-0.0281**	-0.00418	-0.0182*	-0.0184*	-0.0116	-0.00753	-0.00740	0.0127	0.0128
	(-1.837)	(-2.068)	(-0.299)	(-1.812)	(-1.828)	(-0.955)	(-0.499)	(-0.491)	(0.724)	(0.730)
<i>MB</i>	0.00171**	0.00118	0.00304**	0.00170**	0.00173**	0.00444***	0.00128	0.00126	0.000290	0.000252
	(2.244)	(1.401)	(2.111)	(2.228)	(2.264)	(3.381)	(1.246)	(1.223)	(0.276)	(0.241)
<i>ANNUAL</i>	-0.000879	-7.79e-05	-0.00322	-0.000919	-0.000888	-0.000831	0.000659	0.000715	-0.00128	-0.00110
	(-0.351)	(-0.0247)	(-0.893)	(-0.368)	(-0.355)	(-0.290)	(0.171)	(0.185)	(-0.313)	(-0.268)
<i>LAMBDA</i>	0.00819	0.0176	-0.0197	0.00793	0.00861					
	(0.323)	(0.632)	(-0.643)	(0.314)	(0.341)					
<i>INTERCEPT</i>	0.104**	0.0877*	0.188**	0.108**	0.102**	0.0994***	0.0882***	0.0899***	0.0926***	0.0954***
	(2.073)	(1.747)	(2.503)	(2.165)	(2.035)	(4.275)	(3.808)	(3.871)	(3.354)	(3.405)
COUNTRY FIXED EFFECTS	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES
INDUSTRY FIXED EFFECTS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Variables are defined in Table 1.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10. All tests are two-tailed.

All models are estimated using robust standard errors and clustered at firm level.

**TABLE 5**  
*Going-Concern Models for Financially Stressed Samples*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Financially Stressed Sample	Pre-ISA600 Financially Stressed Sample	Post-ISA600 Financially Stressed Sample	Financially Stressed Sample	Financially Stressed Sample	Control Group: Financially Stressed	Component Only Financially Stressed Sample	Component Only Financially Stressed Sample
	(n=2,642)	(n=1,425) <sup>1</sup>	(n=1,206)	(n=2,642)	(n=2,642)	(n=1,837)	(n=1,032)	(n=1,032)
Variables	Coef. (z-value)	Coef. (z-value)	Coef. (z-value)	Coef. (z-value)	Coef. (z-value)	Coef. (z-value)	Coef. (z-value)	Coef. (z-value)
<i>ISA600</i> (H1a)	0.406*** (3.469)			0.361** (2.504)	0.464*** (3.459)	0.355*** (2.677)	0.324 (1.578)	0.302 (1.270)
<i>ISA600xBIGN</i> (H1b)				0.129 (0.556)				
<i>ISA600xCOMPONENT</i> (H2a)					-0.148 (-0.646)			
<i>NETWORK</i> (H2b)							-0.0364 (-0.141)	-0.0761 (-0.259)
<i>ISA600xNETWORK</i>								0.0776 (0.204)
<i>COMPONENT</i>	0.145 (1.214)	0.259 (1.587)	0.0171 (0.0937)	0.144 (1.203)	0.216 (1.371)			
<i>CATA</i>	-1.179 (-1.451)	-0.671 (-0.722)	-0.762 (-0.583)	-1.192 (-1.466)	-1.172 (-1.446)	-2.023*** (-2.879)	-1.261 (-1.323)	-1.260 (-1.320)
<i>ADTCHANGE</i>	0.401** (2.384)	0.318 (1.343)	0.538** (2.199)	0.402** (2.390)	0.402** (2.389)	-0.0488 (-0.233)	0.516** (1.977)	0.514** (1.969)
<i>PBANK</i>	0.789*** (2.711)	1.251*** (3.071)	0.328 (0.675)	0.785*** (2.696)	0.795*** (2.733)	1.361*** (3.851)	0.642 (1.297)	0.639 (1.289)
<i>LTA</i>	-0.719*** (-4.126)	-0.566*** (-3.905)	-0.563** (-2.248)	-0.724*** (-4.140)	-0.714*** (-4.096)	-0.257*** (-3.829)	-0.392*** (-4.161)	-0.393*** (-4.164)
<i>LEVERAGE</i>	-1.058* (-1.888)	-1.319* (-1.712)	-0.220 (-0.278)	-1.047* (-1.872)	-1.045* (-1.861)	0.492 (0.854)	-0.555 (-0.686)	-0.561 (-0.694)
<i>PERFORM</i>	-1.199*** (-4.602)	-1.004*** (-2.695)	-1.143*** (-2.790)	-1.198*** (-4.589)	-1.198*** (-4.605)	-0.756** (-2.047)	-1.083** (-2.530)	-1.085** (-2.535)
<i>CHGLEV</i>	0.00796 (0.0170)	-0.00761 (-0.0128)	-0.216 (-0.295)	-0.00152 (-0.00324)	0.00778 (0.0166)	0.489 (1.148)	0.803 (1.136)	0.798 (1.130)
<i>CURRENT</i>	0.0384** (2.197)	0.0355 (1.512)	0.0365 (1.445)	0.0385** (2.200)	0.0383** (2.195)	0.0385* (1.733)	0.00880 (0.276)	0.00883 (0.276)
<i>WC</i>	-3.110*** (-4.518)	-2.850*** (-2.948)	-3.473*** (-3.602)	-3.104*** (-4.508)	-3.104*** (-4.519)	-0.584 (-0.876)	-2.381** (-2.371)	-2.385** (-2.374)
<i>QUICK</i>	-0.0620** (-2.161)	-0.0788** (-2.036)	-0.0547 (-1.300)	-0.0620** (-2.161)	-0.0620** (-2.166)	-0.0699** (-2.191)	-0.0269 (-0.591)	-0.0269 (-0.591)
<i>NEGEQ</i>	0.588 (1.073)	1.654* (1.667)	0.0277 (0.0336)	0.588 (1.074)	0.576 (1.052)	-1.384** (-2.253)	1.389 (1.628)	1.388 (1.625)
<i>BIGN</i>	0.266** (2.025)	0.311* (1.699)	0.286 (1.465)	0.205 (1.215)	0.267** (2.037)	-0.157 (-0.958)	-0.0406 (-0.161)	-0.0374 (-0.149)
<i>LARGENONBIGN</i>	0.223 (1.039)	0.660*** (2.831)	0.264 (0.760)	0.222 (1.036)	0.229 (1.065)	0.326* (1.947)	0.198 (0.749)	0.199 (0.756)
<i>MINING</i>	-0.284 (-1.597)	-0.0462 (-0.180)	-0.273 (-1.137)	-0.284 (-1.595)	-0.279 (-1.569)	-0.313 (-1.494)	0.0440 (0.162)	0.0445 (0.163)
<i>LOPINION</i>	1.798*** (13.56)	1.702*** (8.500)	1.901*** (9.631)	1.795*** (13.51)	1.798*** (13.57)	2.060*** (12.12)	1.874*** (7.985)	1.876*** (7.937)
<i>LSUB</i>	-0.0469 (-0.469)	0.0930 (0.583)	0.0929 (0.565)	-0.0489 (-0.489)	-0.0441 (-0.439)	0.117 (1.235)	0.141 (0.869)	0.142 (0.870)
<i>FOREIGN</i>	-1.557** (-2.159)	-1.404** (-2.264)	0.152 (0.189)	-1.575** (-2.178)	-1.539** (-2.133)	-1.539** (-2.133)	0.481 (1.036)	0.484 (1.038)
<i>LAMBDA</i>	-3.339** (-2.496)	-2.813** (-2.294)	-0.882 (-0.670)	-3.369** (-2.513)	-3.311** (-2.475)			
<i>INTERCEPT</i>	7.080** (2.442)	5.514** (2.299)	2.252 (0.674)	7.175** (2.467)	6.976** (2.404)	-0.0289 (-0.0866)	0.0988 (0.158)	0.108 (0.173)
COUNTRY FIXED EFFECTS	YES	YES	YES	YES	YES	NO	YES	YES
INDUSTRY FIXED EFFECTS	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.342	0.367	0.340	0.342	0.342	0.295	0.349	0.349

Variables are defined in Table 1.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10. All tests are two-tailed.

All models are estimated using robust standard errors and clustered at firm level.

<sup>1</sup> The sample of n=2,642 overall is not reflected in the sub-period samples (a total of 2,631). Eight observations are excluded in the post-ISA 600 sample due to perfect collinearity with having subsidiaries located in France and 3 are excluded due to all observations in GICS 30 (Consumer Staples) having non-going concern opinions

**TABLE 6**  
*Audit Fee Models*

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Sample	Total Sample	Total Sample	Component	Component	Control
	(n=4,445)	(n=4,445)	(n=4,445)	Sample	Sample	Group
	(n=2,007)	(n=2,007)	(n=2,737)			
Variables	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)
<i>ISA600</i> (H3)	-0.0717*** (-4.669)	-0.0439** (-2.086)	-0.0759*** (-3.671)	-0.0730*** (-3.339)	-0.0650** (-2.249)	-0.0252 (-1.294)
<i>ISA600x</i> BIGN		-0.0562* (-1.903)				
<i>ISA600x</i> COMPONENT			0.00933 (0.320)			
<i>NETWORK</i>				0.0501 (1.450)	0.0582 (1.427)	
<i>ISA600x</i> NETWORK					-0.0189 (-0.448)	
<i>COMPONENT</i>	0.276*** (11.69)	0.276*** (11.71)	0.272*** (9.603)			
<i>LTA</i>	0.358*** (22.95)	0.359*** (22.98)	0.358*** (22.96)	0.349*** (23.61)	0.349*** (23.63)	0.288*** (21.96)
<i>LSUB</i>	0.121*** (5.577)	0.123*** (5.611)	0.121*** (5.579)	0.0965*** (3.419)	0.0963*** (3.411)	0.136*** (7.915)
<i>CATA</i>	0.341*** (4.929)	0.343*** (4.957)	0.340*** (4.930)	0.230*** (3.163)	0.230*** (3.162)	0.366*** (6.516)
<i>QUICK</i>	-0.0100*** (-6.003)	-0.0100*** (-6.029)	-0.0100*** (-6.005)	-0.0100*** (-5.431)	-0.0100*** (-5.426)	-0.009*** (-5.707)
<i>LEVERAGE</i>	0.345*** (7.662)	0.343*** (7.622)	0.345*** (7.652)	0.331*** (5.407)	0.332*** (5.434)	0.318*** (6.035)
<i>PERFORM</i>	-0.141*** (-3.835)	-0.141*** (-3.849)	-0.141*** (-3.835)	-0.146*** (-2.763)	-0.145*** (-2.747)	-0.0510 (-1.309)
<i>FOREIGN</i>	0.118 (1.572)	0.120 (1.606)	0.117 (1.570)	-0.0009 (-0.0199)	-0.00122 (-0.0278)	
<i>OPINION</i>	0.129*** (5.705)	0.129*** (5.706)	0.129*** (5.715)	0.135*** (4.149)	0.135*** (4.151)	0.126*** (4.388)
<i>YE</i>	0.0474 (1.239)	0.0487 (1.276)	0.0471 (1.231)	0.0102 (0.235)	0.0107 (0.248)	0.00929 (0.187)
<i>LOSS</i>	-0.0273 (-1.010)	-0.0269 (-0.992)	-0.0274 (-1.015)	-0.0066 (-0.198)	-0.00626 (-0.187)	-0.0866*** (-2.833)
<i>BIGN</i>	0.331** (10.73)	0.354*** (10.18)	0.331*** (10.72)	0.225*** (4.820)	0.224*** (4.818)	0.364*** (11.67)
<i>LARGENONBIGN</i>	0.0412 (1.161)	0.0389 (1.096)	0.0409 (1.155)	-0.0711* (-1.701)	-0.0718* (-1.715)	0.0422*** (1.285)
<i>MINING</i>	-0.0230 (-0.593)	-0.0234 (-0.604)	-0.0232 (-0.599)	-0.0490 (-0.877)	-0.0490 (-0.877)	-0.0557 (-1.286)
<i>GROWTH</i>	-0.0586*** (-7.124)	-0.0583*** (-7.083)	-0.0587*** (-7.125)	-0.0565*** (-4.237)	-0.0567*** (-4.245)	-0.0662*** (-6.311)
<i>SALESGROWTH</i>	-0.000708 (-0.759)	-0.000679 (-0.731)	-0.000708 (-0.759)	-0.00183 (-1.285)	-0.00182 (-1.275)	-0.0006 (-0.826)
<i>ABSDA</i>	0.133* (1.820)	0.138* (1.887)	0.133* (1.823)	0.254** (2.210)	0.256** (2.219)	0.0672 (0.841)
<i>ADTCHANGE</i>	-0.0485** (-2.061)	-0.0484** (-2.060)	-0.0485** (-2.059)	-0.0653** (-1.964)	-0.0650* (-1.953)	-0.0916*** (-3.135)
<i>LAMBDA</i>	0.236 (1.537)	0.238 (1.556)	0.235 (1.535)			
<i>INTERCEPT</i>	1.989*** (6.746)	1.967*** (6.670)	1.992*** (6.777)	2.824*** (27.27)	2.820*** (27.13)	2.630*** (34.541)
COUNTRY FIXED EFFECTS	YES	YES	YES	YES	YES	NO
INDUSTRY FIXED EFFECTS	YES	YES	YES	YES	YES	YES
Adjusted R-Squared	0.874	0.874	0.874	0.885	0.885	0.774

Variables are defined in Table 1.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10. All tests are two-tailed.

All models are estimated using robust standard errors and clustered at firm level.