Audit Partner Assignments and Audit Quality in the United States

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ABSTRACT

This paper examines the demand and supply side factors associated with audit partner selection and assignment in the United States. First, we examine whether audit partner gender and experience are associated with board, audit committee and management gender and experience. Second, we investigate whether engagement audit quality varies with audit partner gender and experience controlling for selection effects. The results indicate that clients with more gender-diverse board of directors, audit committee and top management teams are more likely to have a female partner leading the audit of their company. In addition, the experience of the client's board of directors is positively associated with the experience of the lead audit partner. The audit fees model results show that female and more experienced audit partners are positively associated with audit fees. In regards to audit quality outcome models, the results provide weak evidence that audit partner gender or experience are associated with audit quality as measured by abnormal accruals and restatements. Our results shed light on the important role that partner characteristics play in the demand and supply side of audit quality. They also have implications for future research on the audit assignment process in the U.S., particularly in light of new availability of audit partner identities on the PCAOB's website through audit firm Form AP filings.

Keywords: audit partner experience, audit partner gender, audit partner selection, audit partner assignment, audit fees, audit quality, corporate governance

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I. INTRODUCTION

This paper examines whether audit partner gender and experience are associated with 1) the gender-diversity and experience levels of the board of directors and top management teams (TMT) of clients and 2) quality of the audit engagement. As such, the paper considers both the demand and supply-side factors influencing auditor contracting and audit production quality. Empirical archival research on audit partners outside the U.S. and behavioral research suggests that individual partner attributes influence the process of assigning lead audit partners to audit engagements (Chen, Peng, Xue, Yang, and Ye 2016; McCraken, Salterio, and Gibbins 2008; Owens 2016). Audit firms appear to manage the assignment of partners to engagements based on client governance and management preferences, which appear to favor certain individual characteristics and attitudes of the partner (Chen et al. 2016; McCraken et al. 2008; Owens 2016). Furthermore, prior research outside the U.S. provides evidence that individual audit partners affect audit quality (Chen, Su, Wu 2009; Taylor 2011; Gul, Wu, and Yang 2013; Wang, Yu and Zhao 2015). However, we still appear to know relatively little about the people who conduct and lead audit engagements, particularly in the U.S. (Francis 2011). This is primarily due to our inability to identify engagement partners overseeing U.S. public company audits because partners do not sign U.S. audit opinions and firms have not disclosed their identities until recently.

Internationally, a number of countries, such as Australia, Belgium, China, and Taiwan, have mandated that audit partners sign audit opinions, thereby publicly disclosing partner identity and allowing for research on audit partners in non-U.S. audit markets. We build on this research stream by examining whether audit partner gender and experience are associated with the gender-composition and experience of the boards and TMT of audit clients in the U.S. In

addition, we examine whether such audit partner attributes (i.e., gender and experience) are associated with audit quality in the U.S. environment after controlling for demand-side selection effects. Our contribution is significant because this paper is one of the first studies to examine both demand and supply-side factors of audit quality at the partner level, thereby disentangling or isolating client self-selection effects and client characteristics from audit partner effects.

From the demand side perspective of auditor partner assignment and selection, we hypothesize that more gender-diverse (experienced) boards of directors, audit committees, and TMT are positively associated with having a female (more experienced) lead audit partner. From the supply side of audit quality, given opposing theories, we offer non-directional hypotheses for audit partner gender and experience associations with audit quality after controlling for partner selection effects from our demand side models. Following Laurion, Lawrence, and Ryans (2017), this study utilizes a unique data source – SEC Comment Letter correspondence on which audit partners are copied – to link audit partners to firm-year observations. The partner gender and experience data were determined from the partners' profiles on LinkedIn.com and other websites. The final sample includes 1,191 firm-year observations with audit partner gender and 787 observations with audit partner experience for the period from 2004 to 2015, which was prior to the mandatory public disclosure of audit partner identities that began in 2017.

Consistent with expectations, the results show that clients with more gender-diverse board of directors and TMT are more likely to have a female lead audit partner on their audit engagement. The likelihood of having a female audit partner increases by 9.1 percent when a client has at least one female director *and* one female executive officer, which is of substantial economic significance. Furthermore, we find a positive relation between the experience (average age) of the board of directors and audit partner experience. A 10 percent increase in average age

of directors leads to a 4.4 percent increase in audit partner experience. The results hold when we refine our client characteristic measures to include those individuals most likely to be involved with the auditor (i.e., audit committee and CFO). The likelihood of having a female audit partner increases by 16.1 percent when a client has at least one female audit committee member *and* female CFO. For the audit quality hypotheses, we estimate audit fees, abnormal discretionary accruals, and restatement models that include partner gender and experience as independent variables and controls for the predictions of our demand-side models. The results find that female and more experienced audit partners are positively associated with audit fees, providing strong evidence against the null hypothesis. Furthermore, the results provide mixed evidence that female audit partners are associated with audit quality outcomes, as measured by several abnormal accruals metrics and restatements. Lastly, our results fail to reject the null hypothesis that audit partner experience is associated with audit quality. The instrumental variable analyses and robustness tests confirm our main results.

Our results suggest that individual partner attributes matter in the auditor assignment process in the U.S., in that companies with gender-diverse board of directors and TMT are more likely to have a female audit partner leading their audit engagement. In addition, the experience level of the board of directors is positively associated with the experience of the lead audit partner. We find similar results when we measure gender diversity at the audit committee and CFO levels. These results underscore the self-selection concerns outlined in prior research and the importance of demand-side forces influencing audit quality, particularly corporate governance characteristics such as board and management gender diversity and experience. We encourage future research to identify and examine other partner attributes that affect both the partner assignment process and audit quality.

This study is subject to several limitations. First, our sample consists of partners listed in SEC Comment Letters issued from 2004 to 2015 and having background information available online. The generalizability of results from a small sample of companies receiving an SEC Comment Letter may be questionable. Second, we implement an instrumental variables approach to mitigate the concern of potential endogeneity surrounding the incidence of female audit partners. Although our additional tests support the validity of our instrumental variables, we acknowledge that identifying reasonable instruments is challenging and that their level of quality may be questionable. Lastly, this study explores an association between gender diversity and experience of board of directors and top management teams and lead audit partners, and does not demonstrate causation. We call on future research to disentangle the supply and demand side influences of the auditor assignment process and on the audit partner and audit quality relation.

II. LITERATURE REVIEW

The Auditor Assignment Process

Section 301 of the Sarbanes-Oxley Act of 2002 requires audit committees to be directly responsible for the appointment, compensation, and oversight of the work of the external auditor (U.S. House of Representatives 2002). However, research and anecdotal evidence suggests that management has a significant say in the partner selection process for audit engagements (Dogdson, Agoglia, Bennett, and Cohen 2017; Owens 2016; Cohen, Hayes, Krishnamoorthy, Monroe, and Wright 2013). Owens (2016) interviewed five audit partners and two company executives about the auditor selection process and found that client personnel often evaluate and choose among several audit partners from the audit firm during the time of partner rotation. The client personnel learn about the partners by examining the partners' resumes and conducting interviews with the partners, and the client's preference, made known to the audit firm

leadership, has significant influence over the audit firm's audit partner assignment decision (Owens 2016). Chen et al. (2016) discuss anecdotal evidence from practice and regulators that suggests managers may successfully pressure audit firms to remove non-acquiescent audit partners. Finally, McCracken et al. (2008) perform a field study of chief financial officer-audit partner dyads and conclude that audit firms appear to manage the assignment of partners to engagements and remove partners from existing engagements based on CFO preferences.

The limited amount of research on auditor partner assignments generally supports the anecdotal evidence that management has a significant influence on the selection of the audit engagement partner. Chen et al. (2016) find that companies successfully engage in partner-level opinion shopping in the Chinese setting. They further find that partner-level opinion shopping is more likely if a company is economically important to the audit firm (Chen et al. 2016). Owens (2016) conducts two experiments using financial executives and audit committee members as participants and finds that executives with aggressive accounting preferences favor selecting less rigorous audit partners, and that strong audit committee oversight is unlikely to mitigate this selection effect. The decision regarding partner assignments is ultimately made by the audit firm. However, the anecdotal and research evidence suggests that client TMT have a strong influence on this decision.

Audit Partner Characteristics

The vast majority of prior research on audit partner characteristics and audit outcomes takes place in reporting regimes with mandatory audit partner disclosure. Gul et al. (2013) and Cameran, Campa, and Francis (2017) provide evidence that individual partners vary systematically in their levels of audit quality in China and the United Kingdom, respectively. Knechel, Vanstraelen, and Zerni (2015) and Li, Qi, Tian, and Zhang (2017) find that the

reporting styles of partners persist over time in Sweden and China, respectively. Studies performed in Sweden and Australia find a positive association between audit fees and partner industry specialists (Zerni 2012; Goodwin and Wu 2014). Other studies out of Taiwan find that industry specialist partners provide higher quality audits, where audit quality is measured using rate of restatements, accruals, and modified audit opinions (Chin and Chi 2009; Chi and Chin 2011). Two studies, using proprietary data, find conflicting results on the relation between partner industry specialization and audit quality in the U.S. Specifically, Bell, Causholli, and Knechel (2015) use data from a Big 4 firm and find that partner industry specialization is associated with higher audit quality, and Aobdia, Siddiqui, and Vinelli (2016) use data from the PCAOB and fail to find any significant association between audit partner specialization and audit quality. Aobdia et al. (2016) do find that clients pay a fee premium for industry specialist partners in the U.S.

Sundgren and Svanstrom (2014) and Goodwin and Wu (2016) provide evidence that older partners provide lower quality audits in Sweden and Australia, respectively. However, Chi, Myers, Omer, and Xie (2017) find that audit partner experience is positively associated with audit quality for Taiwanese firms. Partner gender studies find that female audit partners provide higher quality audits (lower accruals) for, separately, Finnish, Swedish, and UK companies (Ittonen, Vahamaa, and Vahamaa 2013; Cameran et al. 2017). However, there is mixed evidence among different country audit regimes as to whether female audit partners earn higher or lower audit fees. Hardies, Breesch, and Branson (2015) find that female audit partners are associated with higher fees for Belgian audits, and Cameran et al. (2017) find that female audit partners in the UK are associated with lower audit fees than their male counterparts.

The behavioral auditing research on gender differences and decision-making also provides mixed evidence regarding gender differences in audit production. Chung and Monroe (2001) find that female audit partners are more accurate and effective information processors in complex audit tasks. O'Donnell and Johnson (2001) find that female auditors exhibit greater efficiency in their audit judgments than male auditors do. Niedermeyer, Tuten, and Niedermeyer (2003) surveyed auditors regarding the practice of audit fee lowballing and found that females find lowballing less acceptable than males. Lambert and Agoglia (2011) find that female auditors are significantly less likely than males to document work they had not completed, exhibiting more ethical behavior in response to delayed supervisor/reviewer feedback. However, Hardies, Breesch, and Branson (2011) and Hardies, Breesch, and Branson (2013) find no evidence of a gender difference in overconfidence within a sample of auditors. Also, most survey and experimental audit studies that collected gender information report that auditor judgment and decision-making did not differ based on gender (e.g., Frank and Hoffman 2014; Svanberg and Ohman 2015; Hurtt 2010; Bamber and Iyer 2007).

III. HYPOTHESES DEVELOPMENT

Corporate Governance Characteristics and Audit Partner Selection

Our first set of hypotheses focuses on certain client firm characteristics associated with the gender and experience of the audit partner. Client top management teams (TMT), board of directors, and audit firms play key roles in the auditor assignment process. The gender-diversity and experience of the client TMT and board of directors may be associated with gender and experience of the audit partner assigned to the engagement. Gender-diversity in the boardroom and executive suite has developed rather slowly in the U.S. Although women comprise roughly 47 percent of the labor force and 51 percent of management and professional occupations

(Bureau of Labor Statistics 2016), women hold only about 20 percent of corporate board seats and about 25 percent of executive/senior level management positions (Catalyst 2017; Ernst and Young 2017). Many accounting organizations recognize the importance of, and continue to advocate for, gender-diverse boards and executive teams (e.g., The AICPA Women's Initiatives Executive Committee, The Accounting Women's Society of Certified Public Accountants). In 2009, the Securities and Exchange Commission required companies to disclose whether and how they consider diversity in selecting directors.[1] The academic research provides evidence that gender-diverse boards and TMT improve firm performance (Shrader, Blackburn, and Iles 1997; Burke 2000; Richard 2000; Erhardt, Niclas, Werbel and Shrader 2003; Krishnan and Park 2005).

In his study on sex differences in network structure and access, Ibarra (1992) notes that "a widely cited explanation for women's purported exclusion or limited access to interaction networks is preference for homophily, i.e., interaction with others who are similar on given attributes such as sex, race, and education" (as referenced in Rogers and Kincaid 1981). Ibarra (1992) further explains that one theoretical perspective on homophily derives from theories of interpersonal attraction, focusing on individual preferences for relationships with similar others, to explain sex-segregation of interaction networks (Lincoln and Miller 1979; Brass 1985; Marsden 1988). Social psychological studies find bias in evaluation decisions in which parties are demographically similar (Westphal and Zajac 1995). In our setting, we would expect male-dominated and more experienced board of directors and TMT to prefer a demographically similar partner to lead their audit engagement. The audit firms will acquiesce with the client's

[1] See https://www.sec.gov/rules/final/2009/33-9089.pdf

partner selection choice assuming that the firm has a reasonable supply of such partners.[2,3] This leads to our first two hypotheses stated as follows:

> ***H1(a): Gender-diversity of boards of directors and TMT is positively associated with having a female lead audit partner.***
> ***H2(a): The experience of boards of directors and TMT is positively associated with lead audit partner experience.***

The degree of interactions between the firm and the auditors varies depending on characteristics of the people involved. The audit committee oversees the effectiveness of management's financial reporting policies (Klein 2002; Archambeault, DeZoort, and Hermanson 2008) and PCAOB Auditing Standard 1301 (formerly AS No. 16)[4] requires that the auditor communicate with the client's audit committee regarding matters related to an audit. Thus, the audit committee members have a higher degree of interaction with the auditors than other directors on the board. In top management teams, CEOs and CFOs are the main executives who make decisions that affect financial reporting and thus auditors communicate more frequently with CEOs/CFOs than with other top executives. As a result, we predict that companies with more diverse audit committees, female CEOs, and/or female CFOs are more likely to have female audit partners over male audit partners. Furthermore, we predict that companies with more experienced audit committee members, CEOs, and CFOs are more likely to have a more experienced audit partner. This leads to our next set of related hypotheses stated as follows:

> ***H1(b): Gender-diversity of audit committees, having a female CFO and/or a female CEO is positively associated with having a female lead audit partner.***
>
> ***H2(b): The experience of the audit committee members, CFO, and CEO is positively associated with lead audit partner experience.***

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[2] According to the AICPA's 2017 Accounting MOVE Project Report, women make up just 24 percent of partners and principals. This report is available at https://afwa.org/wp-content/uploads/2016/12/2017-Accounting-MOVE-Report__Pipeline-to-Finish-Line_web.pdf

[3] This supply could come from the current/closest office to the client or other offices around the U.S. Daugherty et al. (2012) note that the 5-year partner rotation rules have led to partner movement across offices and the phenomenon of partner "fly-ins" from other offices.

[4] See https://pcaobus.org/Standards/Auditing/Pages/AS1301.aspx

We caution that this study is exploring an association between gender diversity and experience of the TMT and board of directors/audit committees and the likelihood of having a female audit partner leading the audit engagement; this study is not demonstrating causation. Audit committees, particularly those with female directors, may have a strong preference and demand for a gender diverse audit team (Hardies et al. 2015). In addition, TMT and audit committees may see engaging a female lead audit partner as a signaling device that influences firm reputation and legitimacy (Farrell and Hersch 2005). The audit firms may therefore expect that a more diverse TMT and board of directors/audit committee prefer or demand a female partner to lead their audit engagement. We do not attempt to disentangle the demand and supply side effects on the partner assignment process, but rather test for an association between certain client characteristics (i.e., experience and gender diversity of TMT, board of directors, and audit committees) and the likelihood of a female partner leading the audit engagement.

Partner Audit Quality Effects Controlling for Self-Selection Effects

Our next set of hypotheses pertains to the associations between audit partner gender and experience and audit quality. Audit judgment and decision making (JDM) research suggests that individual auditor attributes, such as expertise, ability, risk profile, cognitive style, and independence, affect audit quality (see Nelson and Tan 2005 for review of prior studies). We consider two individual auditor characteristics, gender and experience, in our analyses assuming that they are associated with the aforementioned auditor attributes relevant in auditor JDM.

Lennox and Wu (2017) provide a convincing argument that endogeneity can be a problem for empirical archival partner audit quality studies because the client-partner alignment process is unlikely to be random. For example, risk-averse, well-managed companies may be a preferred match for female and more experienced partners, from both the partner's and the company's perspectives. Nonetheless, we are able to offer an improved research design over

prior research by controlling for self-selection effects examined in our demand-side research questions. We examine the association between these audit partner characteristics and audit quality after controlling for the demand and need for such partner characteristics from the board of directors and TMT.

Research from other disciplines finds that males and females make decisions differently; there are gender differences in knowledge, skills, abilities, preferences, and behavior. For example, female executives tend to be more diligent, more conservative, less overconfident and less tolerant of risk than males (e.g., Palvia, Vahamaa, and Vahamaa 2015; Huang and Kisgen 2013; Peni and Vahamaa 2010; Eagly and Carli 2003). Consistent with this research, several accounting studies document audit quality differences between male and female partners. Ittonen et al. (2013) use a sample of Finnish and Swedish firms and find that female audit engagement partners are associated with smaller abnormal accruals, thereby implying that female auditors may have a constraining effect on earnings management. Hardies et al. (2015) find a female audit fee premium using a sample of Belgian firms, and conclude this result exists because of gender differences in knowledge, skills, abilities, preferences, and behavior or due to supply-side factors. Cameran et al. (2017) find that auditor partner identification in the UK is informative in explaining outcome variation in audits, and they document a positive association between female partners and audit quality. However, the authors point out that the overall amount of variance explained by the identified personal auditor characteristics is small, which suggests that other (unknown) partner characteristics drive the inter-partner differences.

An alternative explanation of a partner gender effect on audit quality could be attributable to audit firms discriminating against females (Lennox and Wu 2017). Specifically, audit female partners, on average, must be 'better' than the average male partner because females have to be

better than their male counterparts to achieve promotion to the partner level to overcome potential discrimination from their firms (Pillsbury, Capozzoli, and Ciampa 1989; Trapp, Hermanson, and Turner 1989; Anderson, Johnson, and Reckers 1994).

In summary, both audit JDM and archival research studies provide mixed evidence regarding partner characteristics and audit quality. Absent sufficient consistent prior research on gender and audit quality to warrant the formation of a directional hypothesis, we do not predict that female (male) auditors provide higher quality audits than their male (female) counterparts. Formally stated, our hypothesis on partner gender is as follows:

H3: There is no association between audit partner gender and audit quality.

Next, we discuss our hypothesis regarding the relation between audit partner experience and audit quality. The theory of learning-by-doing suggests that increased experience reduces the cost of performing a task, and thus improves performance (Arrow 1962; Anzai and Simon 1979). Several accounting research studies support this theory in various settings. For example, more experienced analysts issue more accurate forecasts and are less likely to issue over-optimistic forecasts for firms with high accruals (Clement 1999; Drake and Myers 2011). Tubbs (1992) finds that experiment participants with more auditing experience recall more errors, particularly atypical errors, than those with less experience. Other studies conduct experiments that find that experience limits the auditors' reliance on overly favorable management information and moderates the diluting effect of irrelevant information on auditors' judgments (Kaplan, O'Donnell, and Arel 2008; Shelton 1999). Lastly, Chi et al. (2017) find a positive association between audit partner pre-client and client-specific experience and audit quality using data from Taiwan.

In contrast, the career development literature, which divides careers into four stages: exploration, establishment, maintenance, and disengagement (Schein 1971; Gould 1978; Super 1980) finds that workers generally perform lower quality work during the disengagement phase (i.e., time leading up to retirement) (Cron, Dubinsky, and Michaels 1988; Sundgren and Svanstrom 2014). This is consistent with predictions from economic analytical models, which posit that implicit contracts linking today's performance to future wages are less important in later career stages, and that older managers are less motivated in the later years of their careers when the market is no longer assessing their type and value (Rosenbaum 1984; Holmstron 1999). A few accounting studies, performed in non-U.S. settings, support the negative disengagement phase effect on audit quality. Sundgren and Svanstrom (2014) find a negative association between auditor age and the propensity to issue a going-concern opinion for a sample of auditors in the Swedish audit environment, where litigation against auditors is rare and most of the audits are not performed by audit partners.[5] Goodwin and Wu (2016) include a partner-age control variable in their models and find a negative association between partner age and audit quality for a sample of Taiwanese auditors.

Unlike the audit environments in other countries, the highly regulated and litigious U.S. audit environment may incentivize partners in the U.S. to provide high quality audits during their near retirement years, and lessen the negative disengagement phase effect on audit quality. U.S. audit partners face intense regulatory pressure to perform high quality audits resulting from the PCAOB inspection process. The PCAOB has the authority to impose penalties on individual auditors for substandard audits, including a censure, monetary penalties, and a bar on an

[5] Sundgren and Svanstrom (2014) point out that the statutory audit requirement in Sweden follows that certified auditors will, on average, be in charge of a large number of audit assignments, and that around 35 percent of the certified auditors hired by the largest Swedish audit firms are partners.

individual's association with PCAOB registered accounting firms.[6] In addition, audit firms have implemented many policies to promote and support PCAOB inspection compliance, including having inspection outcomes influence the evaluation and compensation of audit partners (Johnson, Keune, and Winchel 2017).

In addition to regulatory risk, U.S. audit partners must manage significant litigation risk resulting from the notoriously litigious U.S. society. Engagement partners have been held responsible by the courts for their participation in public audits (Reid and Furr Youngman 2017). For example, plaintiff shareholders named individual auditors in lawsuits concerning the audits of Worldcom, Tyco International Ltd., and Xerox (In re Worldcom Securities Litigation 2005; In re Tyco Securities Litigation 2003; Pall v. KPMG LLP 2006). Consistent with the anecdotal evidence, Khurana and Raman (2004) find that litigation risk drives audit quality for U.S. audit firms as compared to firms located in other English-speaking countries – Canada, Australia, and the U.K.

Lastly, audit partners of the Big 4 accounting firms often have ample employment opportunities at the time of their forced retirement at a relatively early age. With a shortage of experienced accountants in general, recently retired partners from the Big 4 firms are a windfall for firms with more flexible retirement policies (MacBride 2007). Thus, the employment market may still be assessing the value of the Big 4 U.S. audit partners during their near retirement years and act as a mitigating force against the negative disengagement phase effect. In sum, the high regulatory and litigation risks faced by U.S. audit partners along with their desire to maintain a strong professional reputation may lessen the negative disengagement phase effect on audit quality in the U.S. audit environment. Based on the above competing theories, we offer no

[6] See https://pcaobus.org/Enforcement/Pages/default.aspx/

directional prediction of the association between audit partner experience and audit quality. Formally stated, our hypothesis on partner experience is as follows:

H4: Audit quality does not vary with audit partner experience.

IV. RESEARCH DESIGN

Audit Partner Data Collection Process

Companies that receive an SEC comment letter respond to the questions posed by the SEC in the comment letters (Cassell, Dreher, and Myers 2013). When the company responds to the SEC comment letter, it sometimes copies the audit engagement partners in the correspondence letter (Laurion et al. 2017). We search the Audit Analytics SEC Comment Letter database for comment letters that copy a Big 4 audit partner.[7] Our sample includes only Big 4 audit partners due to the high cost of hand-collection and to avoid any potential confounding effects of audit firm size (Big 4 vs. non-Big 4) in the audit quality models (Eshleman and Guo 2014). A comment letter response may copy one or multiple audit partners. For responses with multiple partners copied, we select the first partner listed assuming that he or she is the current lead engagement partner. We then search online for the partner's gender and bachelor's degree year, with the main source of partner background information being LinkedIn.com, audit firm websites, and other websites noting the partner's background information.

Sample Selection

Details concerning the sample selection for our main empirical tests are described in Panels A and B of Table 1. We identify 8,130 unique letters (on comment letter key in Audit Analytics) in which the client companies copied their audit partners in correspondence with the

[7] We access the Audit Analytics SEC Comment Letter database directly from auditanalytics.com. Comment letters related to filings made after August 1, 2004, along with the responses by the firms, are publicly available through the SEC. Thus, the Audit Analytics SEC Comment Letters database begins with letters issued after August 1, 2004.

SEC spanning from 2004 to 2015 (letter dates). We match response letters to fiscal years following Laurion et al. (2017). Specifically, the date of the comment letter response is taken as the service date for the copied partner.[8] We utilize the Compustat annual file to assign fiscal years to the service date of the partner (which is the date of the response letter). We remove foreign-based companies (1,954), companies copying a non-Big 4 audit firm (1,792), and financial companies (1,028, SIC codes in the 6000s). We keep the first correspondence letter in which a company copies a Big 4 audit partner per year, and thus drop 1,557 duplicate letters in the same client-year. We are left with 1,799 observations at this point.

Next, for the sample used in gender diversity analyses, we delete 186 observations not included in Compustat, 143 observations with missing director/executive gender (audit committee/CEO/CFO gender) information and board characteristics (board independence and board size), and 279 observations with missing control variables (segments, foreign sales, returns, and other control variables). This yields a sample of 1,191 firm-year observations for the audit partner gender based tests. The gender sample selection is described in panel A of Table 1.

***** Insert Table 1 here *****

Separately, as shown in Table 1, Panel B, for the audit partner experience analyses, we were unable to hand-collect the year the audit partners earned their bachelor or master degree for 758 client-year observations.[9] We use the number of years since audit partners earned their degrees to proxy for audit partner experience, assuming that individuals began working as

[8] For each company (audit client) listed in the Audit Analytics Comment Letter database, we first identified the fiscal year end using Compustat. Then based on the fiscal year end, we reviewed all of the comment letter correspondences from the client to the SEC for each fiscal year end, selecting the first letter in each fiscal year on which audit partner(s) were copied ("People Copied" field). We then examined the rest of the comment letter correspondences in that fiscal year, noting if any other audit partner names were copied. Our analyses use the first partner copied in a fiscal year assuming that the first partner is the lead engagement partner.

[9] For a few individuals, we found the master's degree year but not the bachelor's degree. We deduced the bachelor's year using the master's degree year.

auditors shortly after graduation.[10] For the partner experience sample selection, we drop observations not covered by Compustat (3), observations with missing director/executive age (audit committee/CEO/CFO age) and board characteristics (97), and observations with missing control variables (154). This yields a sample of 787 firm-year observations for the audit partner experience base tests (panel B of Table 1). We winsorize all continuous variables at the top and bottom 1 percent of their Compustat distributions to mitigate the effects of extreme values.

Panel C of Table 1 presents information on the composition of our sample client-year observations broken down by industry, using the Fama and French 12 industry classification system (Fama and French 1993). A large portion of sample observations (34.17 percent: 407 out of 1,191) comes from the Business Equipment industry. Given the variation in industry representation, we include industry fixed effects throughout our analyses to control for potentially confounding effects of industry clustering. In Panel C, we also present mean values of female audit partner incidence (*FEMALE_PTNR*), female director incidence (*FEMALE_DIR*), female executive officer incidence (*FEMALE_EXE*), female audit committee member incidence (*FEMALE_AC*), female CEO (*FEMALE_CEO*), and female CFO (*FEMALE_CFO*) across industries. In the Wholesale, Retail and Some Services industry, 19.38 percent of audit partners are female, while no audit partners are female in the Consumer Durables industry of our sampled observations. Companies in the Utilities and Telephone & Television Transmission industries have the highest levels of gender diversity in the boardroom while companies in Utilities and Healthcare, Medical Equipment & Drugs industries have the highest levels of gender diversity in executive teams. Regarding the audit committee, companies in Telephone & Television Transmission and Chemicals & Allied Products industries tend to have the highest levels of gender diversity in their audit committees. In our sample, 8.33 percent of companies in the Non-

[10] Most of the partners in our sample graduated and became CPAs in the pre-150-hour requirement regime.

durable Consumer Goods industry have female CEOs while 21.71 percent of companies in the Wholesale, Retail, and Some Services industry have female CFOs. Overall, gender diversity among industries varies greatly.

With respect to audit partner experience (*PTNR_EXP*), audit partners in Wholesale, Retail, and Some Services industry have the most experience (average 24.73 years) while audit partners in Manufacturing industry have the least experience (average 21.57 years). Our proxies for director experience, executive officer experience, audit committee experience, CEO and CFO experience are director age (*DIR_AGE*), executive age (*EXE_AGE*), audit committee member age (*AC_AGE*), CEO and CFO age (*CEO_AGE* and *CFO_AGE*), respectively. Manufacturing, Utilities, and Consumer Durables industries have directors, executive officers, audit committee members, CEOs, and CFOs with more years of experience than those of the other industries in the sample.

Panel D of Table 1 provides a breakdown of our sample by fiscal year. The sample is relatively evenly distributed throughout time except for fiscal year 2004.[11] We include year fixed effects throughout our analyses to control for macroeconomic conditions that vary by year. Overall, there is an increasing trend in gender diversity for audit partners, directors, executive officers, and audit committee members over time, consistent with the publicized push by companies and audit firms to have more diversity among their leadership. However, the trend in gender diversity for CEOs and CFOs does not appear to be increasing over time in our sample.

Panel E of Table 1 presents descriptive statistics for individual partners. We have 650 unique audit partners in our sample, with 95 (15 percent) being female and 555 (85 percent) male. Consistent with the audit partner-gender distribution, female partners audited

[11] This is because the SEC began publicly releasing comment and response letters for disclosure filings made after August 1, 2004.

approximately 15 percent of the client firms, and a total of 383 partners (58.92 percent) were copied in only one comment letter. The sample consists of 581 unique audit clients.

Research Design for Determinants of Audit Partner Gender and Experience

In our first hypothesis, H1(a) and H1(b), we predict that client firms with more diverse board of directors (audit committees) and TMT (CEOs and CFOs) are more likely to have a female audit partner. To examine H1(a) (H1(b)), we model audit partner gender as a function of gender diversity in the board of directors (audit committees) and TMT (CEO and CFO), and of client firm characteristics that may affect the probability of selection or assignment of female audit partners. Specifically, we estimate the following probit regression equations:

$$\begin{aligned}\Pr[FEMALE\_PTNR_{it} = 1] = f[&\beta_0 + \beta_1 FEMALE\_DIR_{i,t} + \beta_2 FEMALE\_EXE_{i,t} + \beta_3 LAT_{i,t} \\ &+ \beta_4 ABRET_{i,t} + \beta_5 ROA_{i,t} + \beta_6 SGROWTH_{i,t} + \beta_7 LEV_{i,t} + \beta_8 SEGMENT_{i,t} \\ &+ \beta_9 FOR\_SALES_{i,t} + \beta_{10} TOT\_ACC_{i,t} + \beta_{11} ICW_{i,t} + \beta_{12} BDINDEP_{i,t} + \beta_{13} BDSIZE_{i,t} \\ &+ \beta_{14} PCT\_FEMALE\_IND_{i,t} + Year\ Effects + Industry\ Effects + \varepsilon_{i,t}] \end{aligned} \quad (1.1)$$

$$\begin{aligned}\Pr[FEMALE\_PTNR_{it} = 1] = f[&\beta_0 + \beta_1 FEMALE\_AC_{i,t} + \beta_2 FEMALE\_CEO_{i,t} \\ &+ \beta_3 FEMALE\_CFO_{i,t} + \beta_4 LAT_{i,t} + \beta_5 ABRET_{i,t} + \beta_6 ROA_{i,t} + \beta_7 SGROWTH_{i,t} + \beta_8 LEV_{i,t} \\ &+ \beta_9 SEGMENT_{i,t} + \beta_{10} FOR\_SALES_{i,t} + \beta_{11} TOT\_ACC_{i,t} + \beta_{12} ICW_{i,t} + \beta_{13} BDINDEP_{i,t} \\ &+ \beta_{14} BDSIZE_{i,t} + \beta_{15} PCT\_FEMALE\_IND_{i,t} + Year\ Effects + Industry\ Effects + \varepsilon_{i,t}] \end{aligned} \quad (1.2)$$

where $FEMALE\_PTNR_{i,t,}$ is an indicator variable that equals one if the audit partner is female, and 0 otherwise for client i in fiscal year t. f [*] denotes the probit function. The equation (1) variables are defined in the Appendix. Adhikari, Agrawal, and Malm (2015) find that companies with females on the board of directors are more likely to have female executive officers. A gender-diverse board of directors can accelerate gender diversity in their own companies, as well as in other companies, by promoting relationships with gender-diverse companies. For example, Facebook requires that law firm teams working on the company's legal matters consist of at least 33 percent women and ethnic minorities.[12] Similarly, HP requires that outside law firms have at

[12] Facebook has faced criticism over whether its work force and board are too white and too male. Last year, social media started pressuring Facebook on diversity in hiring and retention (Rosen 2017).

least one diverse so-called relationship partner or at least "one woman and one racially/ethnically diverse attorney each performing at least 10 percent of the billable hours worked on HP matters" (Rosen 2017). Based on empirical and anecdotal evidence, the diversity of boards and TMT can influence the assignment/selection of a female vs. male audit partner. Our variables of interests in equation (1.1) are the presence of at least one woman on the board of directors (*FEMALE_DIR*) and the presence of at least one woman on the TMT (*FEMALE_EXE*). We predict that more diverse boards and TMT are more likely to work with female audit partners over male audit partners.

To test H1(b), we include the presence of at least one woman on the audit committee (*FEMALE_AC*), the presence of a female CEO (*FEMALE_CEO*), and the presence of a female CFO (*FEMALE_CFO*), instead of *FEMALE_DIR* and *FEMALE_EXE* in our regressions, as seen in equation (1.2). For other variables, companies under more scrutiny or pressure from stakeholders are more likely to meet societal expectations, such as gender diversity (DiMaggio and Powell 1983). Thus, we predict larger companies demand more gender diversity in outsourcing firms (e.g., audit firms). The natural log of total assets (*LAT*) is our proxy for firm size. Hillman, Shropshire, and Cannella (2007) argue that more diversified companies are more likely to benefit from a broader set of perspectives reflected in gender diversity. We include the number of segments (*SEGMENT*) and the proportion of foreign sales (*FOR_SALES*) as proxies for firm diversification. Prior studies (Erhardt et al. 2003; Krishnan and Park 2005) find mixed results on the relation between gender diversity and firm performance. We include both accounting performance (return on assets: *ROA*) and market performance (abnormal returns: *ABRET*) in our audit partner gender regression. We do not have a prediction on the relation between audit partner gender and firm performance. Women are less risk-tolerant (Johnson and

Powell 1994; Bernasek and Shwiff 2001). Thus, risky companies may prefer to have male audit partners to be consistent with firm-level strategy. Alternatively, risky companies may prefer female audit partners in order to get more conservative audits. We add growth in sales (*SGROWTH*) and leverage (*LEV*) as proxies for firm risk. In addition, we conjecture that accounting quality of companies can be closely related to the choice of audit partner gender. Prior studies (Chung and Monroe 2001; O'Donnell and Johnson 2001) find that female audit partners are more accurate and efficient in their audit judgments. Thus, companies with low accounting quality may prefer to have female partners to deliver more thorough audits. Total accruals (*TOT_ACC*) and the presence of internal control weaknesses (*ICW*) proxy for accounting quality. Lastly, we control for corporate governance quality with board independence (*BDINDEP*) and board size (*BDSIZE*) given evidence in Adams and Ferreira (2009) that there is a positive relationship between gender diversity and corporate governance quality.

Since the incidence of female audit partners is potentially non-random, endogeneity may be a concern. Hence, demonstrating a statistical relation between the incidence of female audit partners and audit quality (H3) could be attributable to a higher incidence of female audit partners among firms with high audit quality. Accordingly, we implement an instrumental variables approach (Larcker and Rusticus 2010; Hopkins, Maydew, and Venkatachalam 2014) to mitigate this potential endogeneity concern, although we acknowledge that finding reasonable instruments is challenging. Like Hillman et al. (2007) and Srinidhi, Gul, and Tsui (2011), we use the overall percentage of women employed in the industry (*PCT_FEMALE_IND*) as an instrumental variable.[13] This instrument has several important advantages. First, it is correlated with our variable of interest (*FEMALE_PTNR*). The labor market segmentation hypothesis

[13] The three industries that employ the highest percentage of women are Healthcare, Medical Equipment, and Drugs (57.15 percent), Wholesale, Retail, and Some Services (46.2 percent), and Business Equipment (39.13 percent).

(Rubery 1988; Bansak, Graham, and Zebedee 2012) predicts that demand for female workers is directly linked to demand in female-dominated industries and occupations. Based on this hypothesis, demand for female audit partners should be directly related to demand in industries with a relatively high percentage of female employees.[14] Second, it is unlikely that the percentage of women employed in a given industry will affect audit quality in the firm, except through the incidence of female audit partners. We test the validity of this instrumental variable in the robustness tests section.

In our second hypothesis (H2(a) and H2(b)), we predict that client firms with more experienced board of directors (audit committees) and TMT (CEOs and CFOs) are associated with more experienced lead audit partners.

To test H2(a), we model audit partner experience as a function of experience in the board of directors and TMT (as proxied by average age of directors (*DIR_AGE*) and average age of executive officers (*EXE_AGE*), and client firm characteristics that may affect the probability of selection or assignment of more experienced audit partners (equation (2.1)). To test H2(b), we replace *DIR_AGE* and *EXE_AGE* with average age of audit committee (*AC_AGE*), age of CEO (*CEO_AGE*), and age of CFO (*CFO_AGE*) in equation (2.2). We take the log form of all proxies for experience to mitigate nonlinearity concerns. Specifically, we estimate the following OLS regression equations:

$$\begin{aligned} LPTNR\_EXP_{i,t} = {} & \beta_0 + \beta_1 LDIR\_AGE_{i,t} + \beta_2 LEXE\_AGE_{i,t} + \beta_3 LAT_{i,t} + \beta_4 ABRET_{i,t} + \beta_5 ROA_{i,t} \\ & + \beta_6 SGROWTH_{i,t} + \beta_7 LEV_{i,t} + \beta_8 SEGMENT_{i,t} + \beta_9 FOR\_SALES_{i,t} + \beta_{10} TOT\_ACC_{i,t} \\ & + \beta_{11} ICW_{i,t} + \beta_{12} BDINDEP_{i,t} + \beta_{13} BDSIZE_{i,t} + \beta_{14} LDISTANCE_{i,t} + Year\ Effects \\ & + Industry\ Effects + \varepsilon_{i,t} \end{aligned} \quad (2.1)$$

$$\begin{aligned} LPTNR\_EXP_{i,t} = {} & \beta_0 + \beta_1 LAC\_AGE_{i,t} + \beta_2 LCEO\_AGE_{i,t} + \beta_3 LCFO\_AGE_{i,t} + \beta_4 LAT_{i,t} \\ & + \beta_5 ABRET_{i,t} + \beta_6 ROA_{i,t} + \beta_7 SGROWTH_{i,t} + \beta_8 LEV_{i,t} + \beta_9 SEGMENT_{i,t} \end{aligned}$$

[14] The female audit partner dummy variable (*FEMALE_PTNR*) and the percentage of women employed in the industry are significantly correlated at the 1% level. The Pearson (Spearman) correlation between these two variables is 8.42% (9.33%).

$$+ \beta_{10}FOR\_SALES_{i,t} + \beta_{11}TOT\_ACC_{i,t} + \beta_{12}ICW_{i,t} + \beta_{13}BDINDEP_{i,t} + \beta_{14}BDSIZE_{i,t} + \beta_{15}LDISTANCE_{i,t} + Year\ Effects + Industry\ Effects + \varepsilon_{i,t}, \quad (2.2)$$

where $LPTNR\_EXP_{i,t,}$ is the natural log of the number of years since the audit partner's bachelor degree year for client *i* in fiscal year *t*. Equation (2) variables are defined in the Appendix.

Regarding other variables in equations (2.1) and (2.2), we conjecture that large companies face more public scrutiny on quality of financial statements. As a result, larger companies will demand more experienced audit partners to obtain potential higher quality audits. We include the natural log of total assets (*LAT*) as a proxy for firm size. Companies with good financial performance (*ABRET* and *ROA*) have fewer incentives to mislead users of financial statements and thus they may not require more experienced audit partners. Abdolmohammadi and Wright (1987) argue that more experienced auditors can perform complex tasks more accurately than less experienced auditors. Thus, riskier and more complex (e.g., more diversified) companies may demand more experienced auditors to receive more accurate audits. We include growth in sales, leverage, size, the number of segments, and the proportion of foreign sales (*SGROWTH*, *LEV*, *LAT*, *SEGMENT*, and *FOR_SALES*) as proxies for firm riskiness and complexity. Francis, Maydew and Sparks (1999) find that companies with high total accruals have an incentive to hire high-quality audit firms to assure that earnings are reliable. We conjecture that firms with high total accruals (*TOT_ACC*) and weak internal control system (*ICW*) will demand to work with more experienced audit partners. Finally, firms with high quality corporate governance demand differentially higher audit quality (Carcello, Hermanson, Neal, and Riley 2002; Hay, Knechel, and Ling 2008) and therefore firms with greater quality governance are likely to also demand more experienced audit partners. Therefore, we add measures of governance quality (*BDINDEP* and *BDSIZE*).

Similar to equation (1), the dependent variable in equation (2) is a choice variable and thus endogeneity is a concern. Hence, evidence of a statistical relation between audit partner experience and audit quality (H4) could be attributable to the matching of high audit quality firms with more experienced audit partners. Accordingly, we again implement an instrumental variables approach to deal with this potential endogeneity concern. The instrumental variable for this model is the natural log of the distance in miles between the alma mater institutions and the home offices of the audit partners (*LDISTANCE*). This instrumental variable is correlated with our variable of interest (*PTNR_EXP*), as audit partners are likely to move to offices where there are more opportunities to enhance their careers.[15] Thus, over time, auditors will need to move further away from where they graduated in order to advance in the chain of command (Daugherty, Dickins, Hatfield and Higgs 2012). We find it unlikely that the distance between the partner's alma mater and home office affects audit quality except through audit partner experience. We test the validity of this instrumental variable in the robustness tests described later in the paper.

Research Design for the Partner Gender and Experience on Audit Quality

Consistent with DeFond and Zhang (2014) calling for the triangulation of audit quality using various measures, we use (1) audit fees as an input-based measure of audit quality and (2) the incidence of financial restatements and the size and direction of abnormal accruals as output-based measures of audit quality. We first investigate whether the demand for female and more experienced audit partners leads to a client willingness to pay higher audit fees for such partners. A fee premium may result from a scarcity of female/experienced partners (low supply and high demand pushing prices up) and/or from female/more experienced partners providing higher

[15] The natural log of partner experience (*LPTNR_EXP*) and the natural log of the distance in miles between the alma mater institutions of the audit partners and the home office of the audit partners are significantly correlated at the 1% level. The Pearson (spearman) correlation between these two variables is 16.24% (16.78%).

quality audits than their male/inexperienced counterparts (greater price for greater auditor effort and expertise).

To test H3 and H4, we estimate the following OLS model:

$$\begin{aligned} LAUDFEE_{i,t} = {} & \beta_0 + \beta_1 FEMALE\_PTNR\ (PRED\_FEMALE\_PTNR)_{i,t} \\ & + \beta_2 LPTNR\_EXP\ (PRED\_LPTNR\_EXP)_{i,t} + \beta_3 FEMALE\_DIR_{i,t} + \beta_4 FEMALE\_EXE_{i,t} \\ & + \beta_5 LDIR\_AGE_{i,t} + \beta_6 LEXE\_AGE_{i,t} + \beta_7 LAUDTEN_{i,t} + \beta_8 SPECIALIST_{i,t} \\ & + \beta_9 LOFFICESIZE_{i,t} + \beta_{10} LAT_{i,t} + \beta_{11} SGROWTH_{i,t} + \beta_{12} SEGMENT_{i,t} + \beta_{13} FOR\_SALES_{i,t} \\ & + \beta_{14} LEV_{i,t} + \beta_{15} ROA_{i,t} + \beta_{16} ABRET_{i,t} + \beta_{17} TOT\_ACC_{i,t} + \beta_{18} LOSS_{i,t} + \beta_{19} ARINV_{i,t} \\ & + \beta_{20} GC_{i,t} + \beta_{21} ICW_{i,t} + \beta_{22} FYEND_{i,t} + \beta_{23} BDINDEP_{i,t} + \beta_{24} BDSIZE_{i,t} + Year\ Effects \\ & + Industry\ Effects + \varepsilon_{i,t}\ , \end{aligned} \quad (3)$$

where $LAUDFEE_{i,t,}$ is the natural log of audit fees for client *i* in fiscal year *t*. We use both a standard OLS regression and a 2SLS regression (instrumental variables approach). Our variables of interest are the gender of audit partners (*FEMALE_PTNR*) and audit partner experience (*LPTNR_EXP*). For the 2SLS regression, our variables of interest (*PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP*) are the predicted values from equations (1.1) and (2.1) and represent the *exogenous* portions of the incidence of female audit partner (*FEMALE_PTNR*) and partner experience (*LPTNR_EXP*). We include the presence of female directors (*FEMALE_DIR*), female executive officers (*FEMALE_EXE*), natural log of average age of directors (*LDIR_AGE*) and natural log of average age of executive officers (*LEXE_AGE*) as control variables because prior studies find that gender and age of directors and executive officers are associated with earnings quality and litigation risk (Srinidhi et al. 2011; Huang, Rose-Green, and Lee 2012; Adhikari et al. 2015).[16, 17]

[16] Srinidhi et al. (2011) find that firms with female directors exhibit higher earnings quality. Adhikari et al. (2015) find that firms with higher representation of women in the top management team face fewer lawsuits. Finally, Huang et al. (2012) find that earnings quality is correlated with CEO age.

[17] As an additional test, we obtain the predicted values of *PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP* from equations (1.2) and (2.2) and include the presence of female audit committee members (*FEMALE_AC*), female CEO (*FEMALE_CEO*), female CFO (*FEMALE_CFO*), natural log of average age of audit committee members (*LAC_AGE*), natural log of CEO age (*LCEO_AGE*), and natural log of CFO age (*LCFO_AGE*) as control variables.

Following Lobo and Zhao (2013), we first include auditor characteristics as control variables. The natural log of the number of years the audit firm has served as the company's auditor (*LAUDTEN*) controls for fee discounting during the initial audit engagements (Sankaraguruswamy and Whisenant 2004). The auditor specialization (*SPECIALIST*) variable controls for audit fee premiums associated with industry specialists, and the audit office size (*LOFFICESIZE*) variable controls for office size effects on audit fees (Francis and Yu 2009; Choi, Kim, Kim, and Zang 2010).

The first set of client control variables proxies for client's business complexity. Larger firms (*LAT*), high-growth firms (*SGROWTH*), firms with more segments (*SEGMENT*), and firms with higher proportion of foreign sales (*FOR_SALES*) are more complex and are therefore expected to be associated with higher audit fees. The second set of client control variables proxies for inherent/business risk and control risk. Companies with higher financial leverage (*LEV*) and lower profitability (*ROA*, *ABRET*, *TOT_ACC*, and *LOSS*) tend to have insolvency and liquidity risk, which leads to higher audit fees. Inventory can be obsolete and accounts receivable have the risk of being uncollectable. Therefore, higher accounts receivable/inventory ratios (*ARINV*) indicate higher business risk. Firms with going concern opinions (*GC*) and internal control weaknesses (*ICW*) have a higher risk of material misstatement. We expect *ARINV*, *GC*, and *ICW* to be positively related to audit fees.

In addition, we control for audit firm busyness if the client's fiscal year end is in December (*FYEND*). Finally, we control for measures of corporate governance quality such as board independence (*BDINDEP*) and board size (*BDSIZE*) because a high quality board may demand differentially higher audit quality (Carcello et al. 2002; Hay et al. 2008). We also include year and industry fixed effects in all of the models.

With respect to our output-based measures of audit quality, we investigate whether audit partner gender (H3) and experience (H4) are associated with audit quality by employing abnormal accruals (*AB_ACC*) and probability of financial restatement (*REST*) models. We estimate the following OLS and probit models, respectively:

$$\begin{aligned} AB\_ACC_{i,t} = {} & \beta_0 + \beta_1 PRED\_FEMALE\_PTNR_{i,t} + \beta_2 PRED\_LPTNR\_EXP_{i,t} \\ & + \beta_3 FEMALE\_DIR_{i,t} + \beta_4 FEMALE\_EXE_{i,t} + \beta_5 LDIR\_AGE_{i,t} + \beta_6 LEXE\_AGE_{i,t} \\ & + \beta_7 LAT_{i,t} + \beta_8 LEV_{i,t} + \beta_9 LOSS_{i,t} + \beta_{10} SGROWTH_{i,t} + \beta_{11} BTM_{i,t} + \beta_{12} CFO_{i,t} \\ & + \beta_{13} FINANCING_{i,t} + \beta_{14} SEGMENT_{i,t} + \beta_{15} FOR\_SALES_{i,t} + \beta_{16} ABRET_{i,t} + \beta_{17} ROA_{i,t} \\ & + \beta_{18} TOT\_ACC_{i,t} + \beta_{19} ICW_{i,t} + \beta_{20} SPECIALIST_{i,t} + \beta_{21} BDINDEP_{i,t} \\ & + \beta_{22} BDSIZE_{i,t} + Year\ Effects + Industry\ Effects + \varepsilon_{i,t} \end{aligned} \quad (4.1)$$

$$\begin{aligned} \Pr[REST = 1]_{i,t} = {} & f[\beta_0 + \beta_1 PRED\_FEMALE\_PTNR_{i,t} + \beta_2 PRED\_LPTNR\_EXP_{i,t} \\ & + \beta_3 FEMALE\_DIR_{i,t} + \beta_4 FEMALE\_EXE_{i,t} + \beta_5 LDIR\_AGE_{i,t} + \beta_6 LEXE\_AGE_{i,t} \\ & + \beta_7 LAT_{i,t} + \beta_8 LEV_{i,t} + \beta_9 LOSS_{i,t} + \beta_{10} SGROWTH_{i,t} + \beta_{11} BTM_{i,t} + \beta_{12} CFO_{i,t} \\ & + \beta_{13} FINANCING_{i,t} + \beta_{14} SEGMENT_{i,t} + \beta_{15} FOR\_SALES_{i,t} + \beta_{16} ABRET_{i,t} + \beta_{17} ROA_{i,t} \\ & + \beta_{18} TOT\_ACC_{i,t} + \beta_{19} ICW_{i,t} + \beta_{20} SPECIALIST_{i,t} + \beta_{21} BDINDEP_{i,t} \\ & + \beta_{22} BDSIZE_{i,t} + Year\ Effects + Industry\ Effects + \varepsilon_{i,t}\ ] \end{aligned} \quad (4.2)$$

The dependent variable measures the quality of the audit supplied to client company *i* in year *t.* We use both signed (*AA* and *DD*) and absolute value (*ABS_AA* and *ABS_DD*) of abnormal accruals to proxy for output-based audit quality.[18] The abnormal accruals measure is estimated using both the modified Jones ((*AA*), Jones 1991; Kothari, Leone, and Wasley 2005) and the Dechow and Dichev (*DD*) (2002) models. The probability of financial restatements also proxies for output-based audit quality because restatements indicate that the audit partner erroneously issued an unqualified opinion on materially misstated financial statements (DeFond and Zhang 2014). The dependent variable *REST* in equation (4.2) equals 1 if the annual report for year *t* is subsequently restated, and 0 otherwise.[19] We use OLS regressions for abnormal accruals models

[18] A recent paper by Keung and Shi (2014) notes the advantage of signed versus unsigned discretionary accruals as a measure of audit quality. Nonetheless, to complement prior literature that uses unsigned discretionary accruals and exhaust our tests, we use the unsigned measure as well.

[19] As an example, Susan is the partner in 2012 when there is an error in the financial statements but this material error is not discovered until 2015. For this example, we coded 2012 as the restatement year. Thus, the independent variables in the model are also from year 2012 information.

and probit regressions for the restatement model. We also use 2SLS regressions (instrumental variables approach) in which we instrument our variables of interest to reduce potential endogeneity concerns.

Our variables of interest are the gender of the audit partner (*FEMALE_PTNR*) and audit partner experience (*LPTNR_EXP*). For the 2SLS regressions, our variables of interest (*PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP*) are the predicted values from equations (1.1) and (2.1) and represent the *exogenous* portions of the incidence of female audit partner (*FEMALE_PTNR*) and partner experience (*LPTNR_EXP*). We include the presence of female directors (*FEMALE_DIR*), female executive officers (*FEMALE_EXE*), average age of directors (*LDIR_AGE*) and average age of executive officers (*LEXE_AGE*) as control variables because prior studies find that gender and age of directors and executive officers are associated with earnings quality (Huang at al. 2012; Adhikari et al. 2015).[20]

Audit quality is the degree of assurance that the financial statements reflect the firm's underlying economic conditions, conditional on the firm's financial reporting system and innate characteristics (DeFond and Zhang 2014). To control for the firms' operating environments and innate characteristics, we include firm size (*LAT*), leverage (*LEV*), the incidence of negative earnings (*LOSS*), sales growth (*SGROWTH*), the book to market ratio (*BTM*), cash flow from operations (*CFO*), the external financing need (*FINANCING*), the number of business segments (*SEGMENT*), and foreign sales (*FOR_SALES*) as control variables. We also include abnormal returns (*ABRET*), return on assets (*ROA*), and total accruals (*TOT_ACC*) to control for firm performance. Internal control weakness disclosure (*ICW*) is included to control for the effects of

[20] As an additional test, we obtain the predicted values of *PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP* from equations (1.2) and (2.2) and include the presence of female audit committee members (*FEMALE_AC*), female CEO (*FEMALE_CEO*), female CFO (*FEMALE_CFO*), natural log of average age of audit committee members (*LAC_AGE*), natural log of CEO age (*LCEO_AGE*), and natural log of CFO age (*LCFO_AGE*) as control variables.

internal control system effectiveness on audit quality. Industry specialization of audit firms (*SPECIALIST*) is added because industry specialists supply higher quality audits (Balsam, Krishnan, and Yang 2003; Krishnan 2003). Finally, we include measures of corporate governance quality (*BDINDEP* and *BDSIZE*) because high quality governance restrains earnings management (Xie, Davidson, and DaDalt 2003). Variable definitions are in the Appendix.

V. RESULTS

Descriptive Statistics

Panel A of Table 2 presents descriptive statistics of all the variables used to test our hypotheses. The descriptive statistics show that 14.9 percent of the sample firms are audited by female partners (*FEMALE_PTNR*), and 61.3 percent and 32.8 percent of the sample firms have at least one female director (*FEMALE_DIR*) and female executive officer (*FEMALE_EXE*), respectively. 38.9 percent of firms in our sample have at least one female member on the audit committee while 2.9 and 11.3 percent have a female CEO and female CFO, respectively. On average, audit partners have 23.5 years of experience (*PTNR_EXP*),[21] and the average age of directors (*DIR_AGE*), executive officers (*EXE_AGE*), and audit committee members (*AC_AGE*) are about 65, 52, and 67 years, respectively while the average ages of CEOs and CFOs are about 55 and 50 years, respectively.

***** Insert Table 2 here *****

A client in our sample pays, on average, $3.69 million in audit fees (*AUDFEE* mean = 3.685), which is consistent with the amounts reported in Gul and Goodwin (2010) and Brockman, Krishnan, Lee, and Salas (2017). The mean values for abnormal accruals measured

[21] Anecdotal and Center for Audit Quality data indicates that it takes on average 13 to 16 years of experience to become a partner at the large international accounting firms.

per the modified Jones (*AA*)[22] and the Dechow and Dichev (*DD*)[23] models are 0.042 and -0.005, respectively (Jones 1991; Dechow and Dichev 2002; Kothari et al. 2005). The expected accruals are calculated within two-digit SIC industry groups with a minimum of 20 observations in each group. Abnormal accruals are the residuals for each observation from the accruals regression models. Finally, 8.6 percent of our sample subsequently restates their annual financial statements (*REST*).[24]

Pearson/Spearman correlations are summarized in Panel B of Table 2. Using univariate statistics, we find firms with female audit partners tend to also have greater gender diversity in their boards of directors (and in audit committees) and TMT (and CFOs), consistent with our prediction in H1. Audit partner experience is positively correlated with average age of executive officers. However, there is no significant relation between audit partner experience and either the average age of directors on the board of directors or the age of both the CFO and CEO. We do not find a significant relation between audit partner gender and experience. With respect to the univariate relation between audit partner gender/experience and audit quality, there is no significant correlation between audit partner gender and audit fees while audit partner experience is significantly, positively correlated with audit fees. Female audit partners are associated with lower (signed) abnormal accruals (computed by the Dechow and Dichev (2002) model) while audit partners with greater experience are associated with lower absolute (unsigned) abnormal accruals in both *ABS_AA* and *ABS_DD* models.

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[22] For each year and two-digit SIC industry, we estimate the following model using all firms that have the necessary data on Compustat: $TOT\_ACC_{it} = b_0 + b_1 1/AT_{it-1} + b_2(\Delta SALE_{it} - \Delta AR_{it}) + b_3 PPE_{it} + b_4 ROA_{it} + e_{it}$, where *TOT_ACC* is total accruals; Δ*SALE* is the change in sales; Δ*AR* is the change in accounts receivable; *PPE* is the gross property, plant, and equipment; *ROA* is the return on assets; and *AT* is total assets. All variables are scaled by lagged *AT*.

[23] For each year and two-digit SIC industry, we estimate the following model using all firms that have the necessary data on Compustat: $CURRENT\_ACC_{it} = b_0 + b_1 CFO_{it-1} + b_2 CFO_{it} + b_3 CFO_{it+1} + b_4 \Delta SALE_{it} + b_5 PPE_{it} + e_{it}$, where *CURRENT_ACC* is total current accruals; *CFO* is the cash flow from operations; Δ*SALE* is the change in sales; *PPE* is the gross property, plant, and equipment. All variables are scaled by lagged total assets (*AT*).

[24] This restatement rate is in line with prior literature (Lobo and Zhao (2013) had a 8.3 percent annual report restatements for 2000-2009; Eshleman and Guo (2014) had a 9 percent Big 4 restatement rate for 2000-2009).

In Panel A of Table 3, we present mean/median differences in variables used in our models between firms with female and male audit partners. Consistent with the correlation table, we find that the mean/median audit partner experience is not statistically different between female and male partners. However, we find that client firms with female partners tend to have at least one female director and one female executive officer. We also find that client firms with female partners tend to have at least one female audit committee member and a female CFO. Client firms with female audit partners also tend to have fewer segments (i.e., they are less complex) and have a lower proportion of receivables and inventory to total assets (i.e., they are less risky). We also find that signed abnormal accruals computed by the Dechow and Dichev (2002) model are lower (on average) for firms with female audit partners.

***** Insert Table 3 here *****

In Panel B of Table 3, we present mean/median differences in variables used in our models between firms with more experienced audit partners and firms with less experienced audit partners. We split our sample based on the yearly median of audit partner experience (*PTNR_EXP*). There is no statistically significant difference in the proportion of female audit partners between the groups of high and low experienced partners. Larger, more profitable firms (higher ROA and fewer incidences of net loss), and more complex firms (higher foreign sales) have audit partners with greater experience. On average, client firms are willing to pay more audit fees for more experienced audit partners (based on mean differences) than for less experienced partners. Lastly, more experienced audit partners provide higher quality audits, on average, in terms of the probability of financial restatements and unsigned abnormal accruals computed by the Dechow and Dichev (2002) model, than those provided by less experienced partners.

Test of H1 and H2 – Determinants of Audit Partner Gender and Experience

Panel A of Table 4 presents multivariate results of probit regressions for tests of H1(a). We provide both coefficient estimates and marginal effects. Model (1) presents our results of determinants of female partner incidence with the presence of female directors (*FEMALE_DIR*). In model (2), we replace the presence of female directors with the presence of female executive officers (*FEMALE_EXE*). We include both *FEMALE_DIR* and *FEMALE_EXE* in model (3). Consistent with our expectations, we find that having a female audit partner is positively associated with gender diversity in both the board of directors and TMT. According to the marginal effect of Model (3), when there is at least one female on the board of directors, the probability of having a female audit partner increases by 4.7 percent, and the presence of at least one female executive officer increases the probability of having a female audit partner by 4.4 percent. Combining these two effects, the likelihood of having a female audit partner increases by about 9.1 percent when a firm has at least one female director *and* one female executive officer, which is of substantial economic significance.

Panel B of Table 4 presents multivariate results of probit regressions for tests of H1(b). In this regression, we replace *FEMALE_DIR* and *FEMALE_EXE* with the presence of female audit committee members (*FEMALE_AC*), the presence of female CEOs (*FEMALE_CEO*), and the presence of female CFOs (*FEMALE_CFO*) as determinants of audit partner gender. The coefficients on *FEMALE_AC* and *FEMALE_CFO* are significantly positive while the coefficient on *FEMALE_CEO* is insignificant. The results indicate that companies with at least one female audit committee member and/or female CFO are more likely to have a female audit partner than firms with all-male audit committees and male CFOs. Looking at the marginal effect coefficients on Model (3), we find that the presence of a female audit committee member increases the

probability of having a female audit partner by 4.5 percent, and the presence of a female CFO increases the probability of having a female audit partner by 11.6 percent. Combining these two effects, our results indicate that the likelihood of having a female audit partner increases by about 16.1 percent when a firm has at least one female audit committee member *and* a female CFO. This effect is higher than the 9.1 percent we found in panel A of Table 4. The effect of audit committee gender and CFO gender on audit partner gender is greater than the effect of director gender and TMT gender on audit partner gender likely because audit committee members and CFOs interact with the audit partners more closely and have greater input into the audit partner selection decision.

These associations in panels A and B of Table 4 are consistent with the theoretical argument of individual preferences for relationships with others that are similar to one's self (Ibarra 1992). They are also in line with anecdotal evidence that companies under pressure of improving diversity push supplier firms to be more diverse.

***** Insert Table 4 here *****

Client companies with higher abnormal returns are less likely to have female audit partners while companies with higher sales growth (*SGROWTH*) and fewer segments (*SEGMENT*) are more likely to have female audit partners. We also find that firms that disclose internal control weaknesses tend to have female audit partners. The positive association between internal control weaknesses and female partner incidence may be a consequence of firms with weak internal control seeking to have female audit partners with more accurate and effective information processing in complex audit tasks (Chung and Monroe 2001). Finally, the coefficient on the exogenous instrument, *PCT_FEMALE_IND*, is positively related to female partner incidence at the 5 percent significance level, as predicted. This indicates that the likelihood of

having female audit partners is increasing in the percentage of women employed in the industry where the client firm operates.

Panel A of Table 5 presents multivariate results of OLS regressions for tests of H2(a) (on the determinants of audit partner experience). Model (1) presents our results of analysis of audit partner experience against natural log of average age of directors (*LDIR_AGE*). In model (2), we replace *LDIR_AGE* with natural log of average age of executive officers (*LEXE_AGE*). Finally, we include both *LDIR_AGE* and *LEXE_AGE* in model (3). Consistent with our prediction, we find that audit partner experience is positively associated with average age of directors, our proxy for director experience. The coefficient of 0.440 in model (3) implies that a 10 percent increase (about 6 years) in *DIR_AGE* from mean *DIR_AGE* (mean *DIR_AGE* of 64 years ×10 percent) leads to a 4.4 percent increase in audit partner experience (*PTNR_EXP*).[25] This 4.4 percent is equivalent to about 1 year (mean partner experience of 23.5 years × 4.4 percent) increase in audit partner experience. We do not find any significant relation between audit partner experience and average age of executive officers, our proxy for executive officer experience. Audit partner experience is positively associated with firm size suggesting that larger, more complex client firms are matched with more experienced lead partners. Lastly, the coefficient on the exogenous instrument, *LDISTANCE*, is positive and statistically significant at the 1 percent level, as predicted. This indicates that experienced audit partners tend to move to offices where there are more opportunities to move up during their career.

***** Insert Table 5 here *****

Panel B of Table 5 presents multivariate results of OLS regressions for tests of H2(b). In these regressions, we include natural log of average age of audit committee members

[25] In the model $LPTNR\_EXP = b_0 + b_1 * LDIR\_AGE + e$, a 1% change in *DIR_AGE* is associated with a b_1% change in *PTNR_EXP*, so b_1 is the elasticity of *PTNR_EXP* with respect to *DIR_AGE*.

(*LAC_AGE*), the natural log of CEO age (*LCEO_AGE*), and the natural log of CFO age (*LCFO_AGE*) as determinants of audit partner experience, instead of *LDIR_AGE* and *LEXE_AGE*. The coefficient on *LAC_AGE* is significantly positive at the 1 percent level while the coefficients on *LCEO_AGE* and *LCFO_AGE* are both statistically insignificant, in line with the results presented in panel A of Table 5. The coefficient of 0.302 in model (3) implies that a 10 percent increase (about 7 years) in mean *AC_AGE* (mean *DIR_AGE* of 67 years ×10 percent) leads to a 3.02 percent increase in audit partner experience (*PTNR_EXP*).[26] This 3.02 percent is equivalent to about 0.71 years (mean partner experience of 23.5 years × 3.02 percent) increase in audit partner experience. The coefficients of the other variables are similar to the results in panel A of Table 5.

Test of H3 and H4 – Audit Partner Gender/Experience and Audit Quality

DeFond and Zhang (2014) state that input-based measures are usually best suited for tests that examine the demand for audit quality. In order to test whether audit clients are willing to pay additional fees to have a female or more experienced audit partner, we use the natural log of audit fees as our dependent variable. Table 6 presents multivariate evidence for tests of H3 and H4, using audit fees as a proxy for audit quality. Model (1) presents our results of a standard OLS regression with both *FEMALE_PTNR* and *LPTNR_EXP* in the same regression. We find that the coefficients on both *FEMALE_PTNR* and *LPTNR_EXP* are positive and significant at the 10 percent level, as predicted. Model (2) presents results of a 2SLS regression (using an IV approach) with predicted values of audit partner gender (*PRED_FEMALE_PTNR*) from equation (1.1), predicted values of audit partner experience (*PRED_LPTNR_EXP*) from equation (2.1), and control variables. Both *PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP* load positively

[26] In the model $LPTNR\_EXP = b_0 + b_1 * LAC\_AGE + e$, a 1% change in *AC_AGE* is associated with a b_1% change in *PTNR_EXP*, so b_1 is the elasticity of *PTNR_EXP* with respect to *AC_AGE*.

and significantly at the 10 percent level and the 5 percent level, respectively.[27] Our results show that audit partner gender and experience explain audit fees incrementally over other well-known determinants of audit fees. Overall, these findings suggest that the clients are willing to pay more fees to work with female audit partners and more experienced audit partners. The directions of the coefficients on our control variables are consistent with prior studies (Carcello et al. 2002; Larcker and Richardson 2004; Hogan and Wilkins 2008).

***** Insert Table 6 here *****

DeFond and Zhang (2014) state that output-based measures are usually best suited for tests that examine the supply of audit quality. In order to test whether female audit partners and/or more experienced audit partners supply higher audit quality, we use two different measures of abnormal accruals and the probability of financial restatements as our dependent variables. Panel A of Table 7 presents results of analysis of the effect of audit partner gender/experience on output-based measures of audit quality using standard OLS regressions for models (1)-(4) and a probit regression for model (5). Models (1) and (2) employ signed abnormal accruals (*AA*) and absolute abnormal accruals (*ABS_AA*) computed by the modified Jones model as the dependent variables, respectively. We find that both *AA* and *ABS_AA* are negatively and significantly associated with female audit partners (*FEMALE_PTNR*) at the 10 percent level or better. Next, we move to our analysis where signed abnormal accruals (*DD*) and absolute abnormal accruals (*ABS_DD*) computed by the Dechow and Dichev (2002) model are the dependent variables (models (3) and (4), respectively). Using alternative measures of abnormal accruals, we find negative and significant coefficient on *FEMALE_PTNR* with *DD* as

[27] For the IV approach, we include *PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP* obtained from equations (1.2) and (2.2) and *FEMALE_AC*, *FEMALE_CEO*, *FEMALE_CFO*, *LAC_AGE*, *LCEO_AGE*, and *LCFO_AGE* as control variables in the regression. In untabulated results, we find that the coefficients on *PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP* are positive and significant at the 5 percent level.

the dependent variable while the coefficient on *FEMALE_PTNR* is insignificant with *ABS_DD* as the dependent variable. Finally, in model (5), where the incidence of financial restatements (*REST*) is the dependent variable, we find a negative but insignificant association between female audit partners and the incidence of financial restatements. In addition, we generally do not find a significant relation between the presence of female directors (*FEMALE_DIR*) or the presence of female executive officers (*FEMALE_EXE*) and audit quality, with only *FEMALE_EXE* as significant in the *ABS_AA* audit quality model.

With respect to the relation between audit partner experience and audit quality, the coefficients on *LPTNR_EXP* are insignificant across all five models. We do not find a significant relation between our proxies for director experience (*LDIR_AGE*) and audit quality, or between our proxies for TMT experience (*LEXE_AGE*) and audit quality, except that *LEXE_AGE* is positively related to *DD*. This implies older executive officers have shorter tenure horizons and are less likely to be concerned with negative consequences of earnings quality.

***** Insert Table 7 here *****

In panel B of Table 7, we present results of analysis of the effect of audit partner gender on output-based measures of audit quality using 2SLS regressions (IV approach). Our variables of interest are the predicted values of audit partner gender (*PRED_FEMALE_PTNR*) and the predicted values of audit partner experience (*PRED_LPTNR_EXP*) from equations (1.1) and (2.1). Using the IV approach, we find that *PRED_FEMALE_PTNR* are negatively and significantly related to four out of five measures of audit quality (*AA*, *ABS_AA*, *DD*, and *REST*). The relationship between *FEMALE_PTNR* and the audit quality output-based measures is

significant when we use an IV approach. Alternatively, the coefficients on *PRED_LPTNR_EXP* are statistically insignificant across all five models, consistent with panel A, Table 7 results.[28]

Taken together, the results presented in Table 7 provide relatively weak evidence that female audit partners are associated with higher quality audits. However, we do not find significant evidence that more experienced audit partners provide better audit quality using output measures of audit quality. We recognize the possibilities that our proxy for partner experience (the number of years since earning the bachelor degree) may not accurately capture audit partner experience, and that audit quality does not vary among the partner rank.

VI. ROBUSTNESS TESTS

Alternative Measures of Gender Diversity and Experience

In equation (1) we proxy for gender diversity using dummy variables that equal one if there is at least one female representative in the teams (board of directors and top management) and zero otherwise. We test whether the results are robust to using the proportion of female directors in the board and the proportion of female executive officers in the top management team to measure the extent of female leadership in client firms. Using this alternative measure of gender-diversity, we find (untabulated results) that firms with more gender diverse boards of directors and TMT are significantly associated with having a female audit partner. For our main analysis, the proxies for director and executive officer experience are the average ages of directors and executive officers, respectively. A concern with these proxies is that there may be significant variation in the age of directors and in the age of executive officers. To mitigate the

[28] For the IV approach, we alternatively include *PRED_FEMALE_PTNR* and *PRED_LPTNR_EXP* obtained from equations (1.2) and (2.2) and *FEMALE_AC*, *FEMALE_CEO*, *FEMALE_CFO*, *LAC_AGE*, *LCEO_AGE*, and *LCFO_AGE* as control variables in the regression. In untabulated results, we find that the coefficients on *PRED_FEMALE_PTNR* are significantly negative in the *AA*, *ABS_AA*, or *DD* models. *PRED_LPTNR_EXP* is unrelated to any of our audit quality measures.

concern that our results are driven by outliers, we reexamine our hypotheses by using median age of directors/executive officers. In untabulated results, we find similar results as those in Table 5.

Alternative Audit Quality Measure: Severity of SEC Comment Letters

Our sample consists of companies that received SEC comment letters. Because the severity of comment letters can vary by audit partner gender and/or experience, we can use the nature of the comment letter as a proxy for audit quality. We follow Cassell et al. (2013) and use the SEC comment letters severity measures as measures of audit quality, which are the number of comment topics, the length of response, and the number of rounds between the SEC and the company.[29] In untabulated results, we do not find any significant relation between audit partner gender/experience and comment letter severity. Overall, our results provide weak evidence of an association between audit partner gender/experience and audit quality.

Controlling for the Number of SEC Comment Letters

Panel E of Table 1 shows that some partners are copied in more than one comment letter. The number of comment letters associated with partners may be an indication of lower quality audits, and it may be possible that multiple comment letters are clustered in male partners.[30] As a result, we may spuriously find that female partners provide higher quality audits. Univariate statistics in Panel E of Table 1 do not suggest that partners associated with multiple comment letters are mainly male partners. However, to further alleviate concerns that multiple comment letters could explain our results, we add a dummy variable that equals one if partners have more than one comment letter (and zero otherwise) in the model. Our presented results remain

[29] We are grateful to an anonymous referee for suggesting these alternative measures of audit quality.
[30] Notably, however, Johnson and Petacchi (2015) examine the content, resolution, and ensuing informational consequences of SEC comment letters and do not find evidence to suggest that the market interprets the receipt of a comment letter as a signal that the firm has poor reporting quality.

unchanged in these untabulated analyses.[31] The coefficients on this dummy variable are not statistically significant in any of the audit quality specifications.

Potential Endogeneity Concern Related to Director/Executive Gender

A potential concern with our analysis is that determinants of director/executive gender may explain some of our results because of potentially omitted correlated variables. We address this concern in two ways. First, we employ a two-stage instrumental variable approach. In the first stage, we estimate a regression of the director gender determinants model following Srinidhi et al. (2011), and another regression of the executive gender determinants model following Adhikari et al. (2015). We then obtain predicted values of *FEMALE_DIR* (*PRED_FEMALE_DIR*) and *FEMALE_EXE* (*PRED_FEMALE_EXE*) from these first stages and include them as predictors in the second stage (audit quality regressions). In untabulated results, we find that the coefficients on our variable of interest (*PRED_FEMALE_PTNR*) in audit quality regressions using an IV approach remain similar to the results presented in Tables 6 and 7 even with *PRED_FEMALE_DIR* and *PRED_FEMALE_EXE* as control variables. Second, we use the lagged values of the percentage of female directors on the board and the lagged values of the percentage of female executive officers in TMT in the audit quality models (instead of contemporaneous, dichotomous *FEMALE_DIR* and *FEMALE_EXE*), and find similar results.

Validity of Instrumental Variables

Larcker and Rusticus (2010, p. 196) mention that good instruments must not affect the y-variable (audit quality) in any way other than through the x-variable (audit partner gender/audit partner experience). To show that our instruments (*PCT_FEMALE_IND* in equation (1) and *LDISTANCE* in equation (2)) affect audit quality only through *FEMALE_PTNR* and

[31] We also include the number of distinct clients related to multiple comment letters that each partner is copied and our results remain qualitatively similar.

LPTNR_EXP variables, we estimate regressions of *PCT_FEMALE_IND* against *FEMALE_PTNR* and obtain the residuals. We then include the "residual *PCT_FEMALE_IND*," which is orthogonal to *FEMALE_PTNR* (by construction), in the audit quality models. Similarly, for the distance instrumental variable, we regress *LDISTANCE* against *LPTNR_EXP* and extract the residuals. We then include the "residual *LDISTANCE*," which is orthogonal to *LPTNR_EXP*, in the audit quality models. The coefficient on the residual *PCT_FEMALE_IND* is insignificant in all of audit quality models, which suggests that *PCT_FEMALE_IND* affects audit quality only insofar as *PCT_FEMALE_IND* affects *FEMALE_PTNR*. The coefficient on the residual *LDISTANCE* is insignificant in all of audit quality models, which suggests that *LDISTANCE* affects audit quality only insofar as *LDISTANCE* affects *LPTNR_EXP*. Thus, we find that our instrumental variables seem to satisfy the exclusion criteria of instrumental variables.

Another way to check the validity of the instrument is to see whether the first-stage partial F-statistic (Chi-square-statistic for a probit model) falls above benchmarks developed by Stock, Wright, and Yogo (2002) (Larcker and Rusticus 2010).[32] We calculate the partial Chi-square-statistics of the regressions of audit partner gender/experience on our instrumental variables (*PCT_FEMALE_IND* and *LDISTANCE*). The partial Chi-square-statistics are 12.19 and 18.83, which are both higher than the benchmark, 8.96, suggesting appropriate instruments.

Propensity Score Matching (PSM)

Another test we perform to mitigate endogeneity concerns in our tests of H3 & H4 (in addition to the IV approach) is propensity score matching (Rosenbaum and Rubin 1983; Hardies et al. 2015). For audit partner gender and audit quality, we first identify a match with a male

[32] Specifically, when the number of instruments is 1, 2, or 3, the benchmarks are 8.96, 11.59, and 12.83, respectively.

audit partner (control firm) for each firm with a female audit partner (treated firm).[33] In order to identify these matches, we estimate a regression of our audit partner gender dummy variable (*FEMALE_PTNR*) against all determinants of audit fees/audit quality we discuss in equations (3) and (4). We then calculate a propensity score to identify a firm with a male audit partner for each firm with a female audit partner. After identifying these matches, we re-test our H3 (as we did in Tables 6 and 7) using the subsample of the treated and matched control firms. In this subsample, firms with a female audit partner and firms with a male audit partner are similar (statistically speaking) in terms of determinants of audit fees/audit quality. In untabulated results, the coefficient on audit partner gender dummy variable remains negative and significant in four out of five models, similar to the results in Tables 6 and 7.

Similarly, for audit partner experience and audit quality, we generate a high/low experienced audit partner dummy variable (*HIGH_PTNR_EXP*) that is equal to one if audit partner experience is above the sample median and zero otherwise. Similar to above, we match low experienced audit partner firms with high experienced partner firms by estimating a regression of *HIGH_PTNR_EXP* against all determinants of audit fees/audit quality. We then calculate a propensity score to identify one firm with a low experienced audit partner for each firm with a high experienced audit partner. After identifying these matches, we re-test our H4 using the subsample of the treated and matched control firms.[34] In untabulated results, the coefficients on the audit partner experience dummy variable remain insignificant across all models, similar to the results presented in Tables 6 and 7. Consequently, the propensity score matched sample results are consistent with our main tabulated results.

[33] We use a one-to-one caliper matching without replacement. In this method, any values of propensity scores that fall outside the caliper range are removed. We used a caliper distance 0.01.
[34] In this subsample, firms with a high experienced audit partner and firms with a low experienced audit partner are similar in terms of determinants of audit fees/audit quality.

VII. CONCLUSION

This paper provides a significant contribution to the audit literature by examining both the supply and demand side factors influencing audit partner assignment and audit quality in the U.S. Audit research on individual partner characteristics is limited in the U.S. mainly due to audit partner disclosure not being required until recently (2017). We circumvent this data limitation by using publicly-available SEC Comment Letter responses to match copied individual partners to audit engagements.

The multivariate results of probit regressions find that clients with gender-diverse board of directors and TMT are more likely to have a female audit partner. In addition, audit partner experience is positively associated with the average age of the board of directors, our proxy for board experience. We find similar results when we measure the gender diversity and experience of those individuals most likely to be involved with the auditor (i.e., audit committees and CFOs). These results are consistent with the theoretical homophily argument that individuals prefer to interact with others that have similar attributes to one's self, including gender and age, and provide further evidence that audit clients have significant influence on the partner selection process. The results address Lennox and Wu's (2017) concern that endogeneity can be a problem for audit partner studies because the client-partner alignment process is unlikely to be random. The recent partner disclosure requirement in the U.S. will no doubt generate a boom in studies examining auditing at the partner level. Our results confirm that such studies must consider client influences on the auditor selection process.

In order to examine the effect of audit partner gender and experience on audit quality, we use an audit quality input model (audit fees) and audit quality output models (discretionary accruals and restatements). We implement an instrumental variables approach to mitigate the

potential endogeneity concern for the audit quality models. The results of the audit quality input-model find both female and more experienced partners are positively related to audit fees. The audit quality output-models provide weak evidence of a positive association between female partners and audit quality, and no evidence of an association between partner experience and audit quality. In sum, this study provides evidence that certain client characteristics (gender diversity and experience of the board and TMT) are associated with the gender and experience of the lead audit partner.

This study is subject to several limitations. First, this study explores associations between partner gender and experience and select client characteristics, and does not test causation. On the one hand, a more diverse board may demand more gender diversity. On the other hand, audit firms may expect that a more diverse board would demand gender diversity. Therefore, more diverse boards/executive teams increase the likelihood of a female lead partner. However, the study cannot disentangle which direction the relation goes. Therefore, we call on future research to disentangle the demand and supply side influences on the auditor assignment/selection process and audit quality. Second, our study examines a sample of audit clients that received SEC comment letters. While our study is not the only one to use this data to examine audit issues (e.g., Laurion et al. 2017), we caution that our results may not generalize to all companies. Lastly, we implement an instrumental variables approach in our analyses. Although our additional tests support the validity of our instrumental variables, we acknowledge that their level of quality may be questionable.

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APPENDIX
Variable Definitions

AA	Abnormal accruals based on the modified Jones (Jones 1991; Kothari et al. 2005) model (Compustat);
AB_ACC	A variable that represents abnormal accrual measures – it is measured using AA, ABS_AA, DD, and ABS_DD;
ABRET	Annual buy-and-hold stock return minus annual buy-and-hold value weighted market index returns (CRSP);
ABS_AA	The absolute value of abnormal accruals (*AA*) based on the modified Jones (Jones 1991; Kothari et al. 2005) model (Compustat);
ABS_DD	The absolute value of the abnormal accruals (*DD*) based on the modified Dechow and Dichev (2002) model (Compustat);
AC_AGE	The average age of members on the audit committee (Risk Metrics & hand-collected);
ARINV	Accounts receivable plus inventory all divided by total assets ((INVT+RECT)/AT) (Compustat);
ASSETS	Total assets (AT) in millions (Compustat);
AUDFEE	Audit fees in millions (AuditAnalytics);
AUDTEN	Auditor tenure, which is computed by calculating the difference between the first year as an auditor and the current year (Compustat);
BDINDEP	The percentage of independent directors on the board of directors (Risk Metrics & hand-collected);
BDSIZE	The total number of board members (Risk Metrics & hand-collected);
BTM	Book-to-market ratio (CEQ/(CSHO*PRCC_F)) (Compustat);
CEO_AGE	The age of CEO (ExecuComp & hand-collected);
CFO_AGE	The age of CFO (ExecuComp & hand-collected);
CFO	Cash flow from operations divided by total assets (OANCF/ AT), (Compustat);
DD	Abnormal accruals based on the modified Dechow and Dichev (2002) model (Compustat);
DIR_AGE	The average age of directors on the board of directors (Risk Metrics & hand-collected);
EXE_AGE	The average age of executives on the executive team (ExecuComp & hand-collected);
FEMALE_AC	An indicator variable that equals to one if there is at least one female member on the audit committee, and 0 otherwise (Risk Metrics & hand-collected);
FEMALE_CEO	An indicator variable that equals to one if CEO is female, and 0 otherwise (ExecuComp & hand-collected);
FEMALE_CFO	An indicator variable that equals to one if CFO is female, and 0 otherwise (ExecuComp & hand-collected);
FEMALE_DIR	An indicator variable that equals to one if there is at least one female director on the board of directors, and 0 otherwise (Risk Metrics & hand-collected);
FEMALE_EXE	An indicator variable that equals to one if there is at least one female executive on the executive team, and 0 otherwise (ExecuComp & hand-collected);
FEMALE_PTNR	An indicator variable that equals to one if audit partner is female, and 0 otherwise (Hand-collected);
FINANCING	An indicator variable that equals one if the sum of new long-term debt plus new equity exceeds two percent of lagged total assets ((DLTIS+SSTK)/ AT_{t-1}), and zero otherwise (Compustat);
FOR_SALES	The percentage sales that are foreign (Compustat Segments);
FYEND	An indicator variable that equals 1 if the firm's fiscal year-end (FYR) is December 31, and 0 otherwise (Compustat);
GC	An indicator variable that equals 1 if the firm receives a going-concern opinion, and 0 otherwise (AuditAnalytics);
HIGH_PTNR_EXP	An indicator variable that equals 1 if the audit partner had years of experience equal to or greater than the sample median year of audit partner experience;
ICW	An indicator variable that equals 1 if the firm has internal control weaknesses, and 0 otherwise (AuditAnalytics);

LAT	The natural log of total assets (AT) (Compustat);
LAUDFEE	The natural log of audit fees in dollars (AuditAnalytics);
LAUDTEN	The natural log of auditor tenure (*AUDTEN*) (Compustat);
LEV	Leverage, computed as long-term debt divided by total assets ((DLTT+DLC)/AT) (Compustat);
LAC_AGE	The natural log of the average age of members on the audit committee (Risk Metrics & hand-collected);
LCEO_AGE	The age of CEO (ExecuComp & hand-collected);
LCFO_AGE	The age of CFO (ExecuComp & hand-collected);
LDIR_AGE	The natural log of the average age of directors on the board of directors (Risk Metrics & hand-collected);
LDISTANCE	The natural log of the distance (in miles) between schools from where audit partners graduated and office where they work (AuditAnalytics & hand-collected)
LEXE_AGE	The natural log of the average age of executives on the executive team (ExecuComp & hand-collected);
LOFFICESIZE	The natural log of total audit fees (in dollars) for the auditor's office (AuditAnalytics);
LOSS	An indicator variable that equals 1 if net income (NI) is negative, and 0 otherwise (Compustat);
LPTNR_EXP	The natural log of the number of years since audit partner's bachelor degree (Hand-collected);
OFFICESIZE	Total audit fees for the auditor's office in millions of dollars (AuditAnalytics);
PCT_FEMALE_IND	The percentage of employees who were women in each Fama-French 12 industry classification (Bureau of Labor Statistics);
PRED_FEMALE_PTNR	The predicted values obtained from the regressions of determinants of audit partner gender;
PRED_LPTNR_EXP	The predicted values obtained from the regression of the determinants of the natural log of audit partner experience;
PTNR_EXP	The number of years since audit partner's bachelor degree (Hand-collected);
REST	An indicator variable that takes a value of 1 if the annual financial statement was subsequently restated, and 0 otherwise (AuditAnalytics);
ROA	Return on assets calculated as income before extraordinary items (IB) divided by beginning of the year total assets (AT_{t-1}) (Compustat);
SEGMENT	The number of the firm's business segments (Compustat Segments);
SGROWTH	Sales growth rate, equal to sales (SALE) minus lagged sales divided by lagged sales (Compustat);
SPECIALIST	An indicator variable that equals 1 if in a particular year the accounting firm has the largest market share of audit fee revenue in the client's industry and its market share is at least 10 percentage points greater than the second industry leader in the market, and 0 otherwise (Compustat & AuditAnalytics);
TOT_ACC	Total accruals for the fiscal year scaled by total assets at the beginning of the fiscal year (Compustat);

Table 1
Sample Selection

Panel A: Sample construction for audit partner gender tests

Number of SEC Comment Letter Correspondences from companies to the SEC (not "upload" letters from the SEC to the company) in the AuditAnalytics.com with letter dates from 2004 to 2015			149,784
Number of unique SEC Comment Letter Correspondences 2004-2015 copying audit partner names (no duplicates on comment letter key)			8,130
Less:	Number of letters to foreign companies (location base is not United States)	(1,954)	
	Number of unique letters to U.S. clients of Non-Big 4 audit firms	(1,792)	
	Financial institutions	(1,028)	
	Duplicate letters per client-year (keep only first letter per year)	(1,557)	(6,331)
Number of SEC comment letter observations that copied a Big 4 audit firm and audit partner name (2004-2015)			1,799
Less:	Missing non-zero total assets from Compustat	(186)	
	Missing director gender, executive gender, or board independence/size	(143)	
	Missing segment and foreign sales data from Compustat Segment	(156)	
	Missing returns data	(66)	
	Missing other control variables	(57)	(608)
Final sample for audit partner gender			1,191

Panel B: Sample construction for audit partner experience tests

Number of SEC comment letter observations that copied a Big 4 audit firm and audit partner name (2004-2015)			1,799
Less:	Missing audit partner experience	(758)	
	Missing non-zero total assets from Compustat	(3)	
	Missing director age, executive age, or board independence/size	(97)	
	Missing segment and foreign sales data from Compustat Segment	(97)	
	Missing returns data	(34)	
	Missing other control variables	(23)	(1,012)
Final sample for audit partner experience			787

Table 1 – continued

Panel C: Sample Distribution by Industry (Fama and French 12 Industry Classification)

INDUSTRY	N	FEMALE_PTNR	FEMALE_DIR	FEMALE_EXE	FEMALE_AC	FEMALE_CEO	FEMALE_CFO
Consumer Non-Durables	48	12.50%	81.25%	31.25%	50.00%	8.33%	12.50%
Consumer Durables	24	0.00%	41.67%	25.00%	16.67%	0.00%	12.50%
Manufacturing	92	10.87%	60.87%	28.26%	28.26%	1.09%	7.61%
Oil, Gas, & Coal Extraction & Products	58	8.62%	41.38%	15.52%	25.86%	0.00%	0.00%
Chemicals & Allied Products	39	12.82%	82.05%	33.33%	64.10%	7.69%	12.82%
Business Equipment	407	15.23%	53.56%	29.73%	35.56%	3.19%	10.07%
Telephone & Television Transmission	43	4.65%	86.05%	37.21%	67.44%	4.65%	4.65%
Utilities	25	12.00%	88.00%	60.00%	28.00%	4.00%	12.00%
Wholesale, Retail, and Some Services	129	19.38%	75.19%	41.09%	50.39%	2.33%	21.71%
Healthcare, Medical Equipment, & Drugs	167	17.96%	61.08%	42.51%	38.92%	1.20%	8.98%
Other	159	18.87%	58.49%	28.93%	37.11%	3.14%	15.09%
Total	1191						

INDUSTRY	N	PTNR_EXP	DIR_AGE	EXE_AGE	AC_AGE	CEO_AGE	CFO_AGE
Consumer Non-Durables	31	22.48	65.58	53.44	67.25	54.65	50.23
Consumer Durables	15	23.47	67.17	53.91	69.52	53.73	52.07
Manufacturing	51	21.57	67.37	51.88	69.37	55.55	51.24
Oil, Gas, & Coal Extraction & Products	30	23.20	64.54	52.67	66.82	54.27	47.67
Chemicals & Allied Products	26	23.77	64.98	52.19	65.72	55.31	50.31
Business Equipment	272	24.07	63.48	50.89	65.45	53.43	49.95
Telephone & Television Transmission	30	21.93	66.41	54.20	68.67	55.57	46.73
Utilities	17	22.94	66.92	55.11	72.20	59.24	49.53
Wholesale, Retail, and Some Services	92	24.73	64.70	51.83	67.92	55.46	50.15
Healthcare, Medical Equipment, & Drugs	115	21.94	65.10	51.45	67.18	54.15	49.86
Other	108	24.44	66.05	53.45	68.71	55.31	51.24
Total	787						

Table 1 – continued

Panel D: Sample Distribution by Fiscal Year

FISCAL YEAR	N	FEMALE_PTNR	FEMALE_DIR	FEMALE_EXE	FEMALE_AC	FEMALE_CEO	FEMALE_CFO
2004	12	8.33%	25.00%	25.00%	25.00%	0.00%	0.00%
2005	83	15.66%	44.58%	22.89%	21.69%	1.20%	3.61%
2006	129	13.95%	54.26%	28.68%	34.11%	4.65%	4.65%
2007	128	14.06%	59.38%	42.97%	34.65%	3.13%	10.94%
2008	124	16.13%	62.90%	40.32%	37.10%	4.84%	17.74%
2009	135	15.56%	57.04%	28.15%	33.58%	1.48%	11.85%
2010	96	12.50%	55.21%	33.33%	40.63%	3.13%	7.29%
2011	109	14.68%	64.22%	31.19%	45.87%	0.92%	10.09%
2012	100	17.00%	69.00%	33.00%	45.00%	1.00%	15.00%
2013	106	14.15%	70.75%	34.91%	40.57%	0.94%	15.09%
2014	91	14.29%	72.53%	32.97%	49.45%	3.30%	12.09%
2015	78	17.95%	71.79%	29.49%	52.56%	7.69%	16.67%
Total	1191						

FISCAL YEAR	N	PTNR_EXP	DIR_AGE	EXE_AGE	AC_AGE	CEO_AGE	CFO_AGE
2004	12	21.67	68.66	53.42	69.06	58.42	47.75
2005	55	20.38	67.09	50.41	69.03	52.84	48.64
2006	85	21.80	67.00	52.92	69.63	54.82	48.38
2007	82	22.62	65.99	51.28	68.09	53.89	49.39
2008	79	22.72	65.87	50.89	68.75	54.52	48.25
2009	78	22.62	65.24	51.84	67.14	53.51	50.68
2010	64	23.88	66.22	52.14	67.97	54.78	50.83
2011	73	24.26	64.78	51.84	67.66	54.16	51.34
2012	64	25.05	63.87	51.94	66.34	54.53	50.41
2013	78	24.82	62.67	52.17	65.16	54.97	50.33
2014	63	25.75	62.33	53.08	63.86	55.97	52.19
2015	54	25.72	60.88	53.14	63.51	55.15	51.59
Total	787						

Table 1 – continued

Panel E: Individual Partner Descriptive Statistics for the Sample

	Males	Females	Total
Number of Unique Partners	555	95	650
Number of Observations Audited	1013	178	1191
Number of partners listed in:			
1 comment letter	329	54	383
2 comment letters	127	22	149
3 comment letters	51	12	63
4 comment letters	29	3	32
5 comment letters	12	2	14
6 comment letters	5	2	7
7 comment letters	2	0	2
Total number of individual partners in sample	555	95	650
Total number of individual companies in sample	495	86	581

Table 1 describes our sample. Panels A and B outline the sample selection criteria. Panel C classifies our sample by industry groups, based on the Fama and French 12 industry classification. Panel D describes the frequency of sample observations by fiscal year. Panel E reports descriptive statistics for individual partners.

Table 2
Summary Statistics

Panel A: Descriptive Statistics

Variable	N	MEAN	STD_DEV	P10	Q1	MEDIAN	Q3	P90
FEMALE_PTNR	1191	0.149	0.357	0.000	0.000	0.000	0.000	1.000
FEMALE_DIR	1191	0.613	0.487	0.000	0.000	1.000	1.000	1.000
FEMALE_EXE	1191	0.328	0.470	0.000	0.000	0.000	1.000	1.000
FEMALE_AC	1191	0.389	0.488	0.000	0.000	0.000	1.000	1.000
FEMALE_CEO	1191	0.029	0.167	0.000	0.000	0.000	0.000	0.000
FEMALE_CFO	1191	0.113	0.316	0.000	0.000	0.000	0.000	1.000
PTNR_EXP	787	23.503	5.797	16.000	19.000	23.000	28.000	32.000
DIR_AGE	787	64.892	5.150	58.000	61.800	65.375	68.286	71.222
EXE_AGE	787	51.982	4.754	46.167	48.800	51.667	55.333	57.833
AC_AGE	787	67.174	5.961	59.000	63.333	67.646	71.333	74.333
CEO_AGE	787	54.522	7.515	45.000	49.000	54.000	59.000	64.000
CFO_AGE	787	50.066	6.883	41.000	45.000	50.000	55.000	59.000
ASSETS	1191	8045.54	22830.42	122.29	336.58	1247.79	5261.90	18940.00
ABRET	1191	0.039	0.487	-0.414	-0.221	-0.026	0.197	0.513
ROA	1191	-0.006	0.186	-0.181	-0.013	0.037	0.075	0.117
SGROWTH	1191	0.129	0.311	-0.141	-0.016	0.077	0.206	0.438
LEV	1191	0.205	0.199	0.000	0.007	0.174	0.323	0.482
SEGMENT	1191	2.814	2.133	1.000	1.000	2.000	4.000	6.000
FOR_SALES	1191	0.256	0.281	0.000	0.000	0.164	0.462	0.701
TOT_ACC	1191	0.056	0.270	-0.128	-0.040	0.017	0.086	0.215
ICW	1191	0.050	0.219	0.000	0.000	0.000	0.000	0.000
BDINDEP	1191	0.701	0.154	0.500	0.571	0.667	0.857	0.889
BDSIZE	1191	8.798	2.217	6.000	7.000	9.000	10.000	12.000
AUDFEE	1152	3.685	7.932	0.542	0.932	1.725	3.893	7.186
AUDTEN	1152	12.556	7.698	3.000	6.000	11.000	19.000	24.000
SPECIALIST	1152	0.213	0.409	0.000	0.000	0.000	0.000	1.000
OFFICESIZE	1152	35.000	87.700	1.161	3.050	8.468	25.000	69.500
LOSS	1152	0.277	0.448	0.000	0.000	0.000	1.000	1.000
ARINV	1152	0.219	0.157	0.043	0.089	0.187	0.315	0.427
GC	1152	0.005	0.072	0.000	0.000	0.000	0.000	0.000
FYEND	1152	0.634	0.482	0.000	0.000	1.000	1.000	1.000
AA	1144	0.042	0.149	-0.078	-0.013	0.033	0.105	0.181
ABS_AA	1144	0.100	0.122	0.010	0.024	0.065	0.130	0.227
DD	1027	-0.005	0.059	-0.068	-0.032	-0.004	0.024	0.055
ABS_DD	1027	0.041	0.044	0.005	0.013	0.028	0.052	0.092
REST	1144	0.086	0.280	0.000	0.000	0.000	0.000	0.000
BTM	1144	0.481	0.400	0.115	0.243	0.402	0.639	0.935
CFO	1144	0.074	0.144	-0.037	0.047	0.094	0.139	0.196
FINANCING	1144	0.320	0.467	0.000	0.000	0.000	1.000	1.000

Table 2 – continued

Panel B: Pearson/Spearman Correlation Matrix - Variables (1) through (20)

VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)FEMALE_PTNR	1.00	**0.07**	**0.06**	**0.05**	0.00	**0.11**	0.01	-0.05	-0.01	-0.02	0.00	0.04	0.02	-0.05	0.01	0.04	-0.02	**-0.07**	-0.02	0.00
(2)FEMALE_DIR	**0.07**	1.00	**0.12**	**0.63**	**0.13**	0.03	**0.10**	**-0.08**	**0.10**	-0.08	0.02	0.08	**0.41**	-0.02	**0.14**	**-0.07**	**0.10**	**0.17**	-0.02	**-0.13**
(3)FEMALE_EXE	**0.06**	**0.12**	1.00	0.03	**0.23**	**0.50**	0.02	0.03	0.03	0.03	0.07	-0.01	0.01	-0.01	-0.01	-0.03	0.02	-0.05	**-0.15**	**-0.05**
(4)FEMALE_AC	**0.05**	**0.63**	0.03	1.00	0.03	-0.04	0.05	**0.63**	0.03	**-0.09**	**0.07**	0.05	**0.30**	0.01	**0.11**	-0.01	**0.10**	**0.10**	-0.03	-0.07
(5)FEMALE_CEO	0.00	**0.13**	**0.23**	0.03	1.00	**0.11**	0.00	**0.13**	0.23	0.02	-0.04	0.03	0.02	-0.02	-0.02	-0.03	0.04	-0.03	-0.03	-0.05
(6)FEMALE_CFO	**0.11**	0.03	**0.50**	-0.04	**0.11**	1.00	0.11	**0.03**	0.50	-0.01	**0.09**	0.03	**0.06**	-0.03	0.04	-0.02	0.01	-0.04	**-0.05**	-0.05
(7)LPTNR_EXP	0.01	**0.11**	0.01	**0.11**	0.04	0.05	1.00	-0.04	**0.07**	-0.02	0.06	0.06	**0.27**	-0.03	**0.08**	-0.03	0.02	0.02	**0.09**	-0.05
(8)LDIR_AGE	**-0.07**	**-0.10**	0.02	-0.05	-0.02	-0.01	-0.04	1.00	**0.45**	0.77	0.47	0.17	0.00	0.04	**0.13**	**-0.12**	0.02	**0.24**	0.03	**-0.24**
(9)LEXE_AGE	-0.02	**0.11**	0.04	**0.11**	-0.04	**0.14**	**0.09**	**0.42**	1.00	0.27	0.63	0.49	**0.25**	0.02	**0.14**	**-0.13**	**0.11**	**0.23**	-0.02	-0.09
(10)LAC_AGE	-0.02	**-0.09**	0.03	**-0.11**	0.02	-0.02	0.00	**0.76**	**0.25**	1.00	**0.28**	**0.10**	**0.09**	0.05	**0.13**	**-0.11**	**0.06**	**0.20**	0.00	**-0.18**
(11)LCEO_AGE	0.00	0.03	**0.08**	**0.09**	-0.05	**0.07**	0.05	**0.42**	**0.62**	**0.23**	1.00	**0.20**	**0.11**	-0.02	**0.12**	**-0.08**	**0.06**	**0.12**	-0.04	-0.11
(12)LCFO_AGE	0.03	**0.08**	-0.01	0.04	0.02	0.04	0.06	**0.16**	**0.50**	**0.10**	**0.20**	1.00	**0.08**	0.01	**0.11**	**-0.08**	-0.04	**0.10**	0.07	0.02
(13)LAT	0.03	**0.41**	0.01	**0.31**	0.02	**0.06**	**0.25**	-0.02	**0.24**	0.09	0.10	0.08	1.00	-0.01	**0.34**	**-0.13**	**0.35**	**0.42**	**0.12**	**-0.18**
(14)ABRET	-0.03	0.01	-0.01	0.03	-0.02	0.01	0.01	0.09	0.04	0.13	0.01	0.04	0.07	1.00	**0.20**	**0.13**	-0.05	-0.03	0.00	0.00
(15)ROA	0.01	**0.11**	0.01	**0.12**	-0.03	0.02	**0.10**	**0.18**	**0.19**	0.18	0.16	0.12	**0.25**	**0.31**	1.00	**0.18**	-0.06	**0.15**	0.03	**0.08**
(16)SGROWTH	0.04	**-0.10**	-0.05	-0.05	-0.04	-0.05	-0.02	**-0.15**	**-0.19**	-0.08	-0.15	-0.08	**-0.13**	**0.19**	**0.07**	1.00	**-0.11**	**-0.15**	-0.03	**0.23**
(17)LEV	-0.02	**0.15**	0.02	**0.16**	0.04	0.01	0.03	0.08	**0.16**	0.12	0.09	0.00	**0.43**	-0.02	0.02	**-0.15**	1.00	**0.10**	**-0.17**	**-0.17**
(18)SEGMENT	**-0.06**	**0.16**	-0.03	**0.11**	-0.02	-0.02	0.01	**0.23**	**0.21**	0.19	0.14	0.08	**0.40**	0.02	**0.12**	**-0.15**	**0.15**	1.00	**0.13**	**-0.14**
(19)FOR_SALES	-0.01	-0.01	**-0.17**	-0.02	-0.03	**-0.07**	**0.12**	0.00	-0.02	-0.02	-0.06	0.06	**0.14**	0.01	0.05	0.00	**-0.17**	**0.13**	1.00	-0.04
(20)TOT_ACC	0.01	**-0.07**	-0.08	-0.04	-0.06	-0.06	-0.03	**-0.11**	-0.01	-0.10	-0.03	0.02	**-0.11**	0.11	**0.23**	**0.37**	**-0.14**	**-0.08**	-0.01	1.00
(21)ICW	0.04	**-0.09**	-0.06	-0.05	-0.02	**-0.07**	**-0.08**	0.06	0.00	0.02	-0.01	0.00	**-0.12**	**-0.11**	**-0.13**	-0.03	**-0.06**	0.00	0.00	**-0.09**
(22)BDINDEP	-0.03	**-0.08**	-0.02	**-0.08**	0.00	-0.02	**-0.06**	0.04	**-0.07**	-0.14	0.00	0.02	**-0.38**	-0.03	**-0.23**	0.00	-0.04	**-0.09**	**-0.08**	0.03
(23)BDSIZE	0.01	**0.48**	0.06	**0.31**	0.03	0.06	**0.14**	0.02	**0.23**	0.04	0.10	0.14	**0.65**	0.03	**0.17**	**-0.13**	**0.27**	**0.38**	**0.09**	**-0.09**
(24)LAUDFEE	0.01	**0.35**	-0.01	**0.26**	0.06	0.03	**0.24**	-0.08	**0.16**	0.01	0.04	0.08	**0.82**	0.02	**0.05**	**-0.14**	**0.29**	**0.43**	**0.33**	**-0.11**
(25)LAUDTEN	-0.02	**0.23**	**0.06**	**0.17**	0.04	**0.13**	**0.10**	**0.22**	**0.30**	0.22	0.15	0.21	**0.37**	0.05	**0.19**	**-0.25**	**0.16**	**0.25**	0.07	**-0.20**
(26)SPECIALIST	0.01	**0.06**	0.02	0.00	0.04	**0.09**	0.06	-0.03	0.04	-0.02	0.01	0.03	**0.15**	0.04	0.03	-0.03	0.01	**0.07**	**0.12**	-0.05
(27)LOFFICESIZE	-0.04	0.01	0.04	**0.06**	0.05	0.00	-0.05	-0.04	**0.08**	-0.04	0.00	-0.02	**0.14**	-0.02	0.02	0.04	-0.04	**0.07**	**0.21**	0.03
(28)LOSS	0.00	**-0.11**	0.00	**-0.10**	0.04	-0.02	**-0.09**	**-0.23**	**-0.20**	-0.23	-0.17	-0.12	**-0.34**	**-0.27**	**-0.77**	-0.09	-0.06	**-0.18**	0.00	-0.21
(29)ARINV	**-0.10**	-0.03	**-0.09**	0.00	-0.02	-0.03	**0.10**	**0.26**	**0.16**	0.20	0.16	0.11	**-0.10**	0.03	**0.16**	**-0.10**	**-0.07**	**0.17**	**0.24**	0.06
(30)GC	0.00	**-0.07**	0.00	-0.02	-0.01	**0.07**	-0.01	-0.03	**-0.07**	-0.02	-0.09	-0.05	**-0.10**	-0.04	**-0.11**	-0.02	**0.05**	**-0.07**	0.00	**-0.07**
(31)FYEND	-0.05	0.02	0.02	-0.01	**0.07**	-0.02	**-0.10**	**-0.09**	-0.07	-0.08	-0.04	-0.05	0.01	-0.01	**-0.09**	**0.07**	**0.08**	0.02	**-0.10**	0.04
(32)AA	-0.04	0.00	-0.04	-0.02	-0.02	-0.04	0.02	-0.01	0.01	-0.04	-0.01	0.01	0.03	-0.01	**0.13**	0.00	0.02	0.03	**0.12**	**0.19**
(33)ABS_AA	-0.01	-0.03	-0.04	-0.03	0.05	-0.02	**-0.08**	-0.06	-0.07	-0.15	-0.03	-0.04	**-0.16**	**-0.09**	**-0.15**	-0.05	-0.06	**-0.06**	**0.10**	**-0.07**
(34)DD	**-0.09**	-0.05	0.02	-0.01	0.02	0.01	0.01	0.08	0.06	0.02	0.01	0.01	-0.06	-0.04	-0.02	**-0.12**	**0.09**	0.02	**-0.09**	**0.15**
(35)ABS_DD	0.00	**-0.13**	-0.02	-0.04	-0.07	**-0.06**	**-0.08**	-0.06	**-0.10**	-0.07	-0.04	-0.04	**-0.26**	-0.06	**-0.09**	**0.14**	**-0.17**	**-0.18**	-0.01	**0.06**
(36)REST	-0.01	-0.04	**-0.06**	0.02	-0.05	**-0.06**	-0.04	0.03	0.00	0.02	-0.02	0.04	0.02	0.00	-0.02	-0.06	-0.03	**0.08**	0.03	-0.02
(37)BTM	**-0.05**	-0.03	-0.04	-0.02	-0.03	0.04	-0.04	**0.17**	0.08	0.11	0.08	0.02	0.05	**-0.25**	**-0.21**	**-0.30**	-0.02	**0.26**	0.01	**-0.11**
(38)CFO	0.02	**0.07**	-0.03	**0.07**	-0.01	0.02	**0.08**	**0.06**	**0.09**	0.06	0.09	0.10	**0.19**	**0.22**	**0.64**	0.09	-0.07	0.04	0.01	-0.02
(39)FINANCING	-0.01	**-0.09**	**-0.06**	-0.05	-0.05	**-0.07**	-0.03	**-0.14**	**-0.18**	-0.12	-0.12	-0.11	**-0.08**	0.02	**-0.13**	**0.27**	**0.12**	**-0.16**	-0.02	**0.22**

Table 2 – continued

Panel C: Pearson/Spearman Correlation Matrix - Variables (21) through (39)

VARIABLE	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
(1)FEMALE_PTNR	0.04	-0.03	0.00	0.00	-0.02	0.01	-0.02	0.00	**-0.09**	0.00	-0.05	-0.05	-0.03	**-0.08**	-0.02	-0.01	-0.04	0.01	-0.01
(2)FEMALE_DIR	**-0.09**	**-0.11**	**0.46**	**0.34**	**0.21**	**0.06**	0.01	**-0.11**	-0.03	**-0.07**	0.02	0.01	-0.04	-0.04	**-0.14**	-0.04	-0.03	**0.12**	**-0.09**
(3)FEMALE_EXE	-0.06	-0.02	0.03	-0.02	**0.07**	0.02	0.06	0.00	**-0.10**	0.00	0.02	-0.01	-0.04	0.02	-0.01	**-0.06**	-0.05	-0.05	**-0.06**
(4)FEMALE_AC	-0.05	**-0.09**	**0.30**	**0.24**	**0.15**	0.00	**0.07**	**-0.10**	0.00	-0.02	-0.01	0.00	-0.03	-0.01	-0.06	0.02	-0.04	**0.10**	-0.05
(5)FEMALE_CEO	-0.02	0.00	0.02	0.05	0.04	0.04	0.04	0.04	-0.02	-0.01	**0.07**	-0.03	0.03	0.02	-0.05	-0.05	-0.03	0.00	-0.05
(6)FEMALE_CFO	**-0.07**	-0.02	0.04	0.02	**0.13**	**0.09**	-0.01	-0.02	-0.05	**0.07**	-0.02	-0.03	-0.03	0.01	**-0.07**	**-0.06**	0.01	0.02	**-0.07**
(7)LPTNR_EXP	**-0.08**	-0.05	**0.16**	**0.25**	**0.07**	0.06	-0.04	**-0.09**	**0.07**	-0.03	**-0.10**	0.04	-0.05	0.00	**-0.09**	-0.03	-0.07	**0.09**	-0.03
(8)LDIR_AGE	0.07	0.00	0.07	-0.06	**0.25**	-0.01	-0.02	**-0.25**	**0.25**	-0.02	**-0.11**	-0.02	-0.03	0.06	-0.10	0.03	**0.14**	**0.09**	**-0.17**
(9)LEXE_AGE	-0.01	**-0.12**	**0.24**	**0.18**	**0.27**	0.04	**0.09**	**-0.19**	**0.13**	**-0.08**	-0.07	0.00	-0.05	0.09	**-0.13**	-0.01	0.03	**0.13**	**-0.19**
(10)LAC_AGE	0.03	**-0.15**	0.09	0.01	**0.21**	-0.04	-0.02	**-0.24**	**0.21**	-0.02	**-0.09**	0.00	**-0.11**	0.01	**-0.11**	0.02	0.03	0.08	**-0.13**
(11)LCEO_AGE	0.00	-0.03	**0.10**	0.06	**0.15**	0.02	0.02	**-0.17**	**0.15**	**-0.09**	-0.04	-0.01	0.02	0.02	-0.07	-0.02	-0.01	**0.13**	**-0.14**
(12)LCFO_AGE	0.00	-0.01	**0.13**	**0.09**	**0.19**	0.03	-0.03	**-0.13**	**0.09**	-0.06	-0.05	0.00	-0.04	0.04	-0.07	0.04	0.04	**0.10**	**-0.12**
(13)LAT	**-0.11**	**-0.39**	**0.67**	**0.83**	**0.33**	**0.15**	**0.16**	**-0.33**	**-0.10**	**-0.12**	0.02	0.04	**-0.15**	-0.05	**-0.29**	-0.04	-0.02	**0.32**	**-0.08**
(14)ABRET	**-0.06**	-0.03	-0.03	-0.04	0.03	**0.02**	-0.03	**-0.17**	0.06	-0.03	0.00	-0.02	**-0.10**	0.02	-0.01	-0.03	**-0.21**	**0.19**	-0.01
(15)ROA	**-0.10**	**-0.21**	**0.18**	**0.14**	**0.13**	0.02	0.02	**-0.62**	**0.12**	**-0.31**	**-0.06**	**0.26**	**-0.33**	0.05	**-0.20**	0.03	**-0.10**	**0.72**	**-0.12**
(16)SGROWTH	-0.02	0.05	**-0.14**	**-0.14**	**-0.23**	0.00	0.01	-0.03	**-0.11**	-0.05	**0.08**	-0.03	-0.07	**-0.15**	**0.19**	-0.03	**-0.22**	0.02	**0.25**
(17)LEV	**-0.06**	-0.05	**0.21**	**0.21**	**0.11**	0.01	-0.04	0.01	**-0.12**	**0.14**	**0.10**	0.04	-0.01	**0.07**	**-0.17**	-0.03	-0.12	0.01	**0.10**
(18)SEGMENT	0.00	**-0.11**	**0.44**	**0.46**	**0.22**	**0.09**	**0.09**	**-0.16**	**0.13**	**-0.06**	0.05	0.04	**-0.08**	0.02	**-0.15**	**0.09**	**0.14**	0.11	**-0.14**
(19)FOR_SALES	0.00	**-0.08**	**0.09**	**0.29**	0.04	**0.13**	**0.19**	0.00	**0.15**	0.01	**-0.07**	**0.08**	**0.06**	**-0.08**	-0.06	0.02	-0.02	0.01	-0.02
(20)TOT_ACC	**-0.07**	0.11	**-0.12**	**-0.10**	**-0.27**	-0.02	0.03	0.02	-0.04	**-0.08**	0.07	**0.17**	**-0.11**	**0.08**	**0.14**	-0.04	**-0.12**	-0.16	**0.30**
(21)ICW	1.00	0.02	**-0.06**	-0.02	**-0.14**	**-0.06**	-0.03	**0.12**	**0.09**	0.04	-0.04	**-0.07**	0.02	0.02	0.06	**0.11**	**0.13**	**-0.05**	-0.05
(22)BDINDEP	0.01	1.00	**-0.13**	**-0.27**	**-0.15**	**-0.09**	**-0.09**	**0.20**	0.02	0.03	**0.09**	0.02	**0.12**	0.03	0.07	-0.01	0.04	**-0.21**	**0.12**
(23)BDSIZE	**-0.06**	**-0.09**	1.00	**0.63**	**0.32**	**0.11**	**0.12**	**-0.20**	0.03	**-0.08**	0.05	0.04	**-0.09**	-0.03	**-0.17**	0.03	-0.07	**0.14**	**-0.09**
(24)LAUDFEE	-0.02	**-0.26**	**0.60**	1.00	**0.23**	**0.16**	**0.22**	**-0.17**	0.03	-0.05	0.02	0.07	-0.06	-0.03	**-0.17**	0.01	-0.01	0.11	**-0.07**
(25)LAUDTEN	**-0.12**	**-0.15**	**0.33**	**0.26**	1.00	**0.13**	**0.06**	**-0.21**	0.08	-0.06	**-0.09**	0.08	**-0.07**	0.06	**-0.17**	0.00	**0.07**	**0.13**	**-0.22**
(26)SPECIALIST	**-0.06**	**-0.08**	**0.09**	**0.15**	**0.12**	1.00	**0.07**	-0.04	0.02	-0.01	-0.03	-0.03	-0.03	-0.03	0.00	-0.04	-0.02	**0.09**	0.00
(27)LOFFICESIZE	-0.03	**-0.06**	**0.10**	**0.21**	**0.06**	**0.07**	1.00	0.00	**-0.08**	0.02	**0.07**	**0.10**	-0.01	**-0.07**	-0.04	-0.04	-0.09	0.03	-0.01
(28)LOSS	**0.12**	**0.19**	**-0.20**	**-0.18**	**-0.20**	-0.04	-0.02	1.00	**-0.13**	**0.09**	**0.08**	**-0.11**	**0.25**	-0.04	**0.17**	-0.04	0.08	**-0.49**	**0.11**
(29)ARINV	**0.07**	0.03	0.04	0.05	0.05	0.00	**-0.07**	**-0.13**	1.00	-0.02	**-0.21**	-0.03	-0.02	**0.10**	**0.05**	0.01	**0.22**	0.02	**-0.05**
(30)GC	0.04	0.02	**-0.09**	-0.05	-0.05	-0.01	0.02	**0.09**	-0.02	1.00	-0.05	0.06	**0.09**	**0.15**	**0.14**	-0.03	0.00	**-0.30**	0.03
(31)FYEND	-0.04	**0.09**	0.02	-0.01	**-0.08**	-0.03	**0.06**	**0.08**	**-0.23**	-0.05	1.00	0.02	0.03	0.00	0.03	0.01	-0.03	**-0.08**	**0.11**
(32)AA	**-0.06**	0.04	0.03	0.05	0.04	-0.07	**0.09**	**-0.09**	-0.03	0.04	0.01	1.00	**0.20**	**0.17**	-0.04	-0.05	-0.03	**-0.18**	0.06
(33)ABS_AA	0.02	**0.10**	**-0.10**	-0.04	**-0.09**	-0.03	0.03	**0.24**	0.00	**0.08**	0.02	**0.47**	1.00	0.05	**0.19**	0.04	0.07	**-0.16**	**0.06**
(34)DD	0.02	0.05	-0.04	-0.06	0.05	-0.04	**-0.09**	-0.02	**0.08**	**0.10**	-0.01	**0.20**	0.06	1.00	**-0.10**	0.00	**0.11**	**-0.16**	-0.04
(35)ABS_DD	0.04	0.04	**-0.17**	**-0.16**	**-0.16**	-0.01	-0.02	**0.14**	**0.12**	**0.08**	0.06	-0.08	**0.16**	**-0.12**	1.00	0.04	-0.04	-0.15	**0.19**
(36)REST	**0.11**	-0.01	0.03	0.02	0.00	-0.04	-0.04	-0.04	0.01	-0.03	0.01	-0.04	0.01	0.01	0.01	1.00	**0.05**	0.05	-0.03
(37)BTM	**0.10**	0.04	0.02	0.05	**0.11**	-0.03	-0.05	0.03	**0.16**	-0.01	-0.03	-0.02	-0.02	**0.18**	-0.15	**0.08**	1.00	**-0.08**	**-0.12**
(38)CFO	**-0.09**	**-0.20**	**0.08**	0.00	**0.14**	**0.08**	0.01	**-0.48**	-0.03	**-0.13**	**-0.07**	**-0.18**	**-0.16**	**-0.22**	-0.02	0.01	**-0.23**	1.00	**-0.19**
(39)FINANCING	-0.05	**0.11**	**-0.08**	**-0.07**	**-0.22**	0.00	-0.01	**0.11**	**-0.07**	0.03	**0.11**	0.06	0.07	-0.02	**0.17**	-0.03	**-0.15**	**-0.18**	1.00

Table 2 – continued

Table 2 presents summary statistics for all variables used in our study. Panel A provides descriptive statistics and Panels B and C provides the Pearson (above) and Spearman (below) correlation coefficients matrix. **Bold text** in Panels B and C indicates significance at the 10% level or better (two-tailed). Our sample covers the period from 2004 to 2015. All continuous variables are winsorized at the top and bottom 1% of their distributions to mitigate the effects of extreme values. See Appendix for variable definitions.

Table 3
Audit Partner Gender/Experience Descriptive Statistics

Panel A: Mean Differences Test for Female vs. Male Audit Partners

Variables	MALE_PTNR	MEAN	MEDIAN	FEMALE_PTNR	MEAN	MEDIAN	MEAN_DIFF	MEDIAN_DIFF
PTNR_EXP	670	23.496	23.000	117	23.547	23.000	-0.051	0.000
FEMALE_DIR	1013	0.599	1.000	178	0.691	1.000	-0.092**	0.000**
FEMALE_EXE	1013	0.316	0.000	178	0.399	0.000	-0.083**	0.000**
FEMALE_AC	1013	0.380	0.000	178	0.444	0.000	-0.064*	0.000*
FEMALE_CEO	1013	0.029	0.000	178	0.028	0.000	0.001	0.000
FEMALE_CFO	1013	0.098	0.000	178	0.197	0.000	-0.099***	0.000***
ASSETS	1013	8370.05	1194.80	178	6198.73	1655.62	2171.32	460.83
ABRET	1013	0.049	-0.022	178	-0.015	-0.031	0.064	0.009
ROA	1013	-0.007	0.036	178	-0.003	0.041	-0.004	-0.005
SGROWTH	1013	0.124	0.074	178	0.156	0.090	-0.032	-0.015
LEV	1013	0.206	0.174	178	0.197	0.171	0.009	0.003
SEGMENT	1013	2.875	3.000	178	2.466	1.000	0.408**	2.000**
FOR_SALES	1013	0.258	0.163	178	0.246	0.173	0.012	0.010
TOT_ACC	1013	0.056	0.017	178	0.056	0.017	0.001	0.001
ICW	1013	0.046	0.000	178	0.073	0.000	-0.027	0.000
BDINDEP	1013	0.703	0.700	178	0.689	0.647	0.014	0.053**
BDSIZE	1013	8.798	9.000	178	8.795	9.000	0.003	0.000
AUDFEE	980	3.800	1.702	172	3.100	1.835	0.700	-0.134
AUDTEN	980	12.624	11.000	172	12.169	11.000	0.456	0.000
SPECIALIST	980	0.21	0.000	172	0.227	0.000	-0.017	0.000
OFFICESIZE	980	37.000	8.623	172	26.000	7.876	11.000	0.747
LOSS	980	0.278	0.000	172	0.273	0.000	0.004	0.000
ARINV	980	0.225	0.196	172	0.185	0.143	0.040***	0.053***
GC	980	0.005	0.000	172	0.006	0.000	-0.001	0.000
FYEND	980	0.643	1.000	172	0.581	1.000	0.061	0.000
AA	974	0.045	0.034	170	0.023	0.024	0.022*	0.010
ABS_AA	974	0.102	0.064	170	0.091	0.067	0.01	-0.003
DD	870	-0.003	-0.003	157	-0.016	-0.013	0.013**	0.011*
ABS_DD	870	0.042	0.027	157	0.039	0.030	0.003	-0.003
REST	974	0.087	0.000	170	0.076	0.000	0.011	0.000
BTM	974	0.487	0.411	170	0.443	0.359	0.044	0.052
CFO	974	0.074	0.093	170	0.076	0.097	-0.002	-0.005
FINANCING	974	0.321	0.000	170	0.312	0.000	0.01	0.000

Table 3 – continued

Panel B: Mean Differences Test for High vs. Low Audit Partner Experience

Variables	HIGH_PTRN_EXP =0	MEAN	MEDIAN	HIGH_PTRN_EXP =1	MEAN	MEDIAN	MEAN_DIFF	MEDIAN_DIFF
FEMALE_PTNR	378	0.156	0.000	409	0.142	0	0.014	0.000
DIR_AGE	378	64.726	65.088	409	65.046	65.700	-0.320	-0.612
EXE_AGE	378	51.949	51.646	409	52.012	51.800	-0.063	-0.154
AC_AGE	378	66.888	67.000	409	67.438	68.000	-0.555	-1.000**
CEO_AGE	378	54.235	54.000	409	54.787	54.000	-0.552	0.000
CFO_AGE	378	49.931	49.000	409	50.191	50.000	-0.259	-1.000
ASSETS	378	3372.33	691.700	409	10000.00	1478.47	-6627.67***	-786.77***
ABRET	378	0.054	-0.030	409	0.044	-0.022	0.010	-0.008
ROA	378	-0.030	0.028	409	0.003	0.041	-0.033**	-0.013**
SGROWTH	378	0.229	0.082	409	0.142	0.082	0.087	0.000
LEV	378	0.217	0.159	409	0.219	0.169	-0.002	-0.010
SEGMENT	378	2.550	1.000	409	2.609	2.000	-0.059	-1.000
FOR_SALES	378	0.234	0.108	409	0.275	0.216	-0.041**	-0.108***
TOT_ACC	378	0.100	0.022	409	0.044	0.014	0.056***	0.008
ICW	378	0.066	0.000	409	0.044	0.000	0.022	0.000
BDINDEP	378	0.729	0.778	409	0.687	0.667	0.042***	0.111***
BDSIZE	378	8.440	8.000	409	8.943	9.000	-0.502***	-1.000**
AUDFEE	355	2.300	1.377	399	4.500	1.980	-2.200***	-0.603***
AUDTEN	355	11.577	10.000	399	12.734	11.000	-1.157**	-1.000
SPECIALIST	355	0.206	0.000	399	0.221	0.000	-0.015	0.000
OFFICESIZE	355	42.000	6.515	399	28.000	9.175	14.000**	-2.660**
LOSS	355	0.321	0.000	399	0.253	0.000	0.068**	0.000**
ARINV	355	0.196	0.158	399	0.231	0.190	-0.034***	-0.031*
GC	355	0.008	0.000	399	0.008	0.000	0.001	0.000
FYEND	355	0.682	1.000	399	0.602	1.000	0.080**	0.000**
AA	353	0.038	0.030	391	0.045	0.033	-0.008	-0.003
ABS_AA	353	0.106	0.070	391	0.103	0.058	0.003	0.012
DD	309	-0.003	-0.004	356	-0.002	-0.003	-0.001	-0.001
ABS_DD	309	0.045	0.030	356	0.037	0.027	0.007**	0.003*
REST	353	0.105	0.000	391	0.061	0.000	0.043**	0.000*
BTM	353	0.498	0.394	391	0.406	0.399	0.092*	-0.005
CFO	353	0.051	0.083	391	0.08	0.094	-0.029**	-0.012
FINANCING	353	0.363	0.000	391	0.309	0.000	0.053	0.000

Table 3 Panel A provides mean differences in firm characteristics between firms with female audit partners and firms with male audit partners. Panel B provides mean differences in firm characteristics between firms with high-experienced audit partners and firms with low-experienced audit partners. *HIGH_PTNR_EXP* equals one if audit partner experience (*PTNR_EXP*) is equal to or greater than median in that year and zero otherwise. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively, using a two-tailed test. See Appendix for variable definitions.

Table 4
Determinants of Audit Partner Gender

Panel A: Determinants of Audit Partner Gender – Board of Directors/Top Management Team

	FEMALE_PTNR					
	Model (1)	Model (1)	Model (2)	Model (2)	Model (3)	Model (3)
	Coefficient (z-stat)	Marginal Effect (z-stat)	Coefficient (z-stat)	Marginal Effect (z-stat)	Coefficient (z-stat)	Marginal Effect (z-stat)
INTERCEPT	-2.922*** (-3.36)		-3.044*** (-3.54)		-2.951*** (-3.37)	
FEMALE_DIR	0.257** (2.37)	0.052** (2.46)			0.235** (2.14)	0.047** (2.22)
FEMALE_EXE			0.215** (2.14)	0.047** (2.06)	0.204** (2.02)	0.044* (1.95)
LAT	0.059 (1.33)	0.012 (1.33)	0.076* (1.69)	0.016* (1.69)	0.060 (1.33)	0.012 (1.33)
ABRET	-0.213** (-2.01)	-0.045** (-2.01)	-0.225** (-2.12)	-0.047** (-2.13)	-0.217** (-2.06)	-0.045** (-2.06)
ROA	0.037 (0.13)	0.008 (0.13)	0.022 (0.08)	0.005 (0.08)	0.011 (0.04)	0.002 (0.04)
SGROWTH	0.310* (1.90)	0.065* (1.91)	0.325** (2.02)	0.068** (2.03)	0.321** (1.99)	0.067** (2.01)
LEV	-0.151 (-0.58)	-0.032 (-0.58)	-0.207 (-0.80)	-0.043 (-0.80)	-0.127 (-0.49)	-0.026 (-0.49)
SEGMENT	-0.061** (-2.20)	-0.013** (-2.20)	-0.064** (-2.27)	-0.013** (-2.26)	-0.061** (-2.16)	-0.013** (-2.15)
FOR_SALES	0.164 (0.76)	0.034 (0.76)	0.196 (0.91)	0.041 (0.91)	0.223 (1.04)	0.046 (1.04)
TOT_ACC	-0.102 (-0.50)	-0.021 (-0.50)	-0.107 (-0.54)	-0.022 (-0.54)	-0.068 (-0.34)	-0.014 (-0.34)
ICW	0.345* (1.67)	0.085 (1.45)	0.348* (1.70)	0.086 (1.48)	0.371* (1.79)	0.092 (1.54)
BDINDEP	-0.054 (-0.15)	-0.011 (-0.15)	-0.054 (-0.15)	-0.011 (-0.15)	-0.047 (-0.13)	-0.010 (-0.13)
BDSIZE	-0.017 (-0.55)	-0.004 (-0.55)	-0.001 (-0.04)	-0.000 (-0.04)	-0.017 (-0.52)	-0.003 (-0.52)
PCT_FEMALE_IND	2.458** (2.26)	0.515** (2.26)	2.293** (2.10)	0.480** (2.11)	2.308** (2.11)	0.480** (2.11)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,191	1,191	1,191	1,191	1,191	1,191
Pseudo R^2	0.084		0.083		0.087	

Table 4 – continued

Panel B: Determinants of Audit Partner Gender – Audit Committee/CEO/CFO

	FEMALE_PTNR					
	Model (1)	Model (1)	Model (2)	Model (2)	Model (3)	Model (3)
	Coefficient (z-stat)	Marginal Effect (z-stat)	Coefficient (z-stat)	Marginal Effect (z-stat)	Coefficient (z-stat)	Marginal Effect (z-stat)
INTERCEPT	-2.988*** (-3.46)		-2.990*** (-3.49)		-2.939*** (-3.36)	
FEMALE_AC	0.166* (1.68)	0.036* (1.65)			0.209** (2.11)	0.045** (2.04)
FEMALE_CEO			-0.137 (-0.48)	-0.027 (-0.52)	-0.166 (-0.59)	-0.031 (-0.65)
FEMALE_CFO			0.433*** (3.14)	0.108*** (2.71)	0.465*** (3.34)	0.116*** (2.86)
LAT	0.068 (1.51)	0.014 (1.51)	0.072 (1.60)	0.015 (1.60)	0.062 (1.34)	0.013 (1.34)
ABRET	-0.225** (-2.10)	-0.047** (-2.10)	-0.203* (-1.89)	-0.042* (-1.89)	-0.206* (-1.91)	-0.043* (-1.91)
ROA	0.041 (0.14)	0.009 (0.14)	-0.001 (-0.00)	-0.000 (-0.00)	-0.017 (-0.06)	-0.004 (-0.06)
SGROWTH	0.310* (1.91)	0.065* (1.92)	0.315** (1.99)	0.066** (2.01)	0.309** (1.98)	0.064** (2.00)
LEV	-0.249 (-0.95)	-0.052 (-0.95)	-0.179 (-0.70)	-0.037 (-0.70)	-0.182 (-0.70)	-0.038 (-0.70)
SEGMENT	-0.064** (-2.27)	-0.013** (-2.27)	-0.060** (-2.15)	-0.013** (-2.14)	-0.059** (-2.08)	-0.012** (-2.07)
FOR_SALES	0.170 (0.79)	0.036 (0.79)	0.193 (0.87)	0.040 (0.87)	0.247 (1.14)	0.051 (1.14)
TOT_ACC	-0.123 (-0.62)	-0.026 (-0.62)	-0.101 (-0.51)	-0.021 (-0.51)	-0.073 (-0.37)	-0.015 (-0.37)
ICW	0.322 (1.58)	0.079 (1.39)	0.370* (1.82)	0.092 (1.58)	0.377* (1.85)	0.094 (1.59)
BDINDEP	-0.051 (-0.14)	-0.011 (-0.14)	-0.111 (-0.31)	-0.023 (-0.31)	-0.097 (-0.27)	-0.020 (-0.27)
BDSIZE	-0.007 (-0.23)	-0.001 (-0.23)	-0.001 (-0.03)	-0.000 (-0.03)	-0.009 (-0.30)	-0.002 (-0.30)
PCT_FEMALE_IND	2.474** (2.28)	0.520** (2.28)	2.404** (2.20)	0.501** (2.20)	2.420** (2.21)	0.502** (2.21)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,191	1,191	1,191	1,191	1,191	1,191
Pseudo R^2	0.082		0.088		0.091	

Table 4 – continued

Table 4 presents results from regressions of determinants of audit partner gender. Panel A reports probit regression results for the matching of (assignment) female audit partners to client firms. The dependent variable is a dummy variable, *FEMALE_PTNR*, which equals one for clients with female lead audit partners, and zero for clients with lead male audit partners. Our variables of interest are board of director gender (*FEMALE_DIR*) and top management team gender (*FEMALE_EXE*). In model (1), we include *FEMALE_DIR* only. In model (2), we include *FEMALE_EXE* only. In model (3), we include both *FEMALE_DIR* and *FEMALE_EXE*. Panel B reports probit regression results using audit committee member gender (*FEMALE_AC*), CEO gender (*FEMALE_CEO*), and CFO gender (*FEMALE_CFO*) as our variables of interest. In model (1), we include *FEMALE_AC* only. In model (2), we include *FEMALE_CEO* and *FEMALE_CFO* only. In model (3), we include *FEMALE_AC*, *FEMALE_CEO* and *FEMALE_CFO* all together. Standard errors are corrected for heteroskedasticity using the White (1980) correction and clustered at the firm level. *, **, and *** indicate significance levels at less than 10 percent, 5 percent, and 1 percent, respectively, based on two-tailed z-tests. See Appendix for the other variable definitions.

Table 5
Determinants of Audit Partner Experience

Panel A: Determinants of Audit Partner Experience – Board of Directors/Top Management Team

	LPTNR_EXP		
VARIABLES	Model (1)	Model (2)	Model (3)
INTERCEPT	1.191**	2.545***	1.361**
	(2.16)	(5.45)	(2.28)
LDIR_AGE	0.381***		0.440***
	(2.92)		(3.00)
LEXE_AGE		0.059	-0.103
		(0.52)	(-0.82)
LAT	0.036***	0.035***	0.036***
	(4.05)	(3.91)	(4.07)
ABRET	-0.011	-0.013	-0.010
	(-0.63)	(-0.73)	(-0.60)
ROA	-0.056	-0.028	-0.057
	(-1.08)	(-0.55)	(-1.09)
SGROWTH	-0.001	-0.004	-0.001
	(-0.13)	(-0.51)	(-0.19)
LEV	-0.026	-0.025	-0.024
	(-0.65)	(-0.62)	(-0.61)
SEGMENT	-0.012**	-0.010*	-0.012**
	(-2.20)	(-1.83)	(-2.17)
FOR_SALES	-0.038	-0.033	-0.041
	(-0.89)	(-0.75)	(-0.95)
TOT_ACC	-0.026	-0.045*	-0.023
	(-0.96)	(-1.76)	(-0.87)
ICW	-0.041	-0.041	-0.041
	(-0.88)	(-0.89)	(-0.87)
BDINDEP	-0.043	-0.001	-0.055
	(-0.58)	(-0.01)	(-0.73)
BDSIZE	-0.004	-0.003	-0.003
	(-0.64)	(-0.53)	(-0.56)
LDISTANCE	0.015***	0.014***	0.014***
	(2.81)	(2.71)	(2.78)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	787	787	787
Adj. R^2	0.236	0.228	0.237

Table 5 – continued

Panel B: Determinants of Audit Partner Experience – Audit Committee/CEO/CFO

	LPTNR_EXP		
VARIABLES	Model (1)	Model (2)	Model (3)
INTERCEPT	1.500***	2.544***	1.448***
	(3.21)	(6.93)	(2.66)
LAC_AGE	0.309***		0.302***
	(2.79)		(2.68)
LCEO_AGE		0.049	0.018
		(0.76)	(0.27)
LCFO_AGE		0.009	0.002
		(0.14)	(0.03)
LAT	0.035***	0.035***	0.035***
	(3.95)	(3.93)	(3.96)
ABRET	-0.008	-0.007	-0.008
	(-0.48)	(-0.42)	(-0.47)
ROA	-0.041	-0.028	-0.043
	(-0.78)	(-0.56)	(-0.81)
SGROWTH	-0.028	-0.031	-0.027
	(-0.96)	(-1.07)	(-0.92)
LEV	-0.031	-0.027	-0.031
	(-0.77)	(-0.68)	(-0.77)
SEGMENT	-0.011**	-0.010*	-0.011**
	(-2.02)	(-1.85)	(-2.03)
FOR_SALES	-0.038	-0.030	-0.037
	(-0.88)	(-0.68)	(-0.85)
TOT_ACC	-0.025	-0.034	-0.025
	(-0.94)	(-1.30)	(-0.93)
ICW	-0.041	-0.041	-0.041
	(-0.90)	(-0.90)	(-0.90)
BDINDEP	0.001	0.002	0.000
	(0.01)	(0.03)	(0.00)
BDSIZE	-0.004	-0.004	-0.005
	(-0.79)	(-0.61)	(-0.80)
LDISTANCE	0.014***	0.013**	0.014***
	(2.65)	(2.49)	(2.67)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	787	787	787
Adj. R^2	0.240	0.232	0.240

Table 5 – continued

Table 5 presents results from regressions of determinants of audit partner experience. Panel A reports OLS regression results for the matching of audit partner experience to client firms. The dependent variable is the natural log of the number of years since the partner's bachelor degree, our proxy for audit partner experience (*LPTNR_EXP*). Our variables of interest are board of directors and top management team experience, proxied by the natural log of average age of directors and the natural log of average age of top executive officers (*LDIR_AGE* and *LEXE_AGE*). In model (1), we include *LDIR_AGE* only. In model (2), we include *LEXE_AGE* only. In model (3), we include both *LDIR_AGE* and *LEXE_AGE*. Panel B reports OLS regression results using the experience of audit committee members, CEOs, and CFOs, proxied by the natural log of the average age of audit committee members (*LAC_AGE*), the natural log of CEO age (*LCEO_AGE*), and the natural log of CFO age (*LCFO_AGE*), respectively. In model (1), we include *LAC_AGE* only. In model (2), we include *LCEO_AGE* and *LCFO_AGE* only. In model (3), we include *LAC_AGE*, *LCEO_AGE* and *LCFO_AGE* all together. Standard errors are corrected for heteroskedasticity using the White (1980) correction and clustered at the firm level. *, **, and *** indicate significance levels at less than 10 percent, 5 percent, and 1 percent, respectively, based on two-tailed t-tests (panel B).

See Appendix for the other variable definitions.

Table 6
Audit Quality and Audit Partner Gender/Experience – Audit Fees

	OLS (Model 1)	IV (Model 2)
VARIABLES	LAUDFEE	LAUDFEE
INTERCEPT	11.284***	10.326***
	(8.56)	(7.26)
FEMALE_PTNR (PRED_FEMALE_PTNR)	0.088*	0.202*
	(1.68)	(1.79)
LPTNR_EXP (PRED_LPTNR_EXP)	0.145*	0.574**
	(1.88)	(2.18)
FEMALE_DIR	-0.031	-0.030
	(-0.74)	(-0.66)
FEMALE_EXE	0.060	0.014
	(1.55)	(0.35)
LDIR_AGE	-0.630*	-0.506
	(-1.90)	(-1.44)
LEXE_AGE	-0.065	-0.219
	(-0.24)	(-0.87)
LAUDTEN	-0.021	-0.014
	(-0.76)	(-0.51)
SPECIALIST	0.109**	0.098**
	(2.46)	(2.25)
LOFFICESIZE	0.060***	0.066***
	(4.84)	(5.49)
LAT	0.468***	0.447***
	(24.61)	(20.42)
SGROWTH	-0.006	-0.056*
	(-0.40)	(-1.70)
SEGMENT	0.050***	0.056***
	(4.60)	(4.73)
FOR_SALES	0.535***	0.293***
	(6.08)	(3.75)
LEV	0.198**	0.348***
	(2.47)	(3.98)
ROA	-0.475***	-0.615***
	(-4.19)	(-5.15)
ABRET	0.032	0.068*
	(0.92)	(1.68)
TOT_ACC	0.341***	0.370***
	(4.50)	(4.62)
LOSS	0.094*	0.071
	(1.71)	(1.31)
ARINV	0.650***	0.743***
	(5.06)	(4.63)
GC	0.428**	0.325*
	(2.19)	(1.78)
ICW	0.254***	0.224***
	(3.27)	(2.66)
FYEND	0.009	0.002
	(0.22)	(0.04)
BDINDEP	0.481***	0.442***
	(3.26)	(2.98)
BDSIZE	0.020*	0.035***
	(1.85)	(3.04)
Industry Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Observations	754	754
Adj. R^2	0.803	0.809

Table 6 – continued

Table 6 presents coefficient estimates for the effect of audit partner gender and experience on audit fees. Model (1) presents the results of using OLS regression while model (2) presents the results of using the instrumental variable (IV) approach. T-statistics are shown in parentheses below the coefficient loadings. Standard errors are corrected for heteroskedasticity using the White (1980) correction and corrected for serial dependence of error terms using standard errors that are clustered at the firm level. *, **, and *** indicate significance levels at less than 10 percent, 5 percent, and 1 percent, respectively, based on two-tailed tests. See Appendix for the other variable definitions.

Table 7
Audit Quality and Audit Partner Gender/Experience – Abnormal Accruals & Restatements

Panel A: Audit Quality and Audit Partner Gender and Experience (OLS)

	AA	ABS_AA	DD	ABS_DD	REST
VARIABLES	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
INTERCEPT	0.315	-0.159	0.055	0.076	1.908
	(1.14)	(-0.49)	(0.39)	(0.79)	(0.36)
FEMALE_PTNR	-0.024**	-0.017*	-0.009*	0.001	-0.210
	(-2.45)	(-1.67)	(-1.77)	(0.30)	(-1.00)
LPTNR_EXP	0.016	0.006	0.010	-0.007	-0.134
	(0.92)	(0.34)	(1.26)	(-1.25)	(-0.55)
FEMALE_DIR	-0.011	-0.002	0.004	-0.006	-0.122
	(-1.05)	(-0.15)	(0.71)	(-1.58)	(-0.70)
FEMALE_EXE	-0.009	-0.019**	-0.001	-0.002	-0.159
	(-1.08)	(-2.17)	(-0.25)	(-0.72)	(-0.95)
LDIR_AGE	-0.030	0.003	-0.045	0.017	-0.756
	(-0.35)	(0.04)	(-1.14)	(0.69)	(-0.58)
LEXE_AGE	-0.058	0.053	0.057**	-0.009	-0.642
	(-1.04)	(0.90)	(2.05)	(-0.46)	(-0.57)
LAT	0.003	0.002	-0.007***	-0.004***	0.052
	(0.77)	(0.43)	(-3.32)	(-3.13)	(0.70)
LEV	0.022	0.040	0.049***	-0.018**	-0.498
	(0.74)	(1.27)	(3.04)	(-2.07)	(-1.21)
LOSS	0.033*	0.007	-0.017**	-0.005	-0.464*
	(1.90)	(0.41)	(-1.99)	(-1.07)	(-1.85)
SGROWTH	-0.004	0.004	-0.017***	0.008*	-0.208
	(-0.82)	(0.21)	(-2.61)	(1.65)	(-0.81)
BTM	-0.005	0.012	0.009**	-0.002	0.383*
	(-0.85)	(1.41)	(1.99)	(-0.84)	(1.74)
CFO	-0.856***	0.156	-0.151***	0.026	0.845
	(-13.92)	(1.41)	(-4.89)	(1.18)	(1.07)
FINANCING	-0.009	0.005	-0.003	0.010***	0.077
	(-0.74)	(0.48)	(-0.58)	(2.69)	(0.47)
SEGMENT	0.006**	0.003	0.000	-0.001	0.075*
	(2.17)	(1.15)	(0.24)	(-1.55)	(1.92)
FOR_SALES	-0.023	-0.004	-0.007	-0.010	-0.413
	(-0.98)	(-0.19)	(-0.71)	(-1.49)	(-1.41)
ABRET	-0.021**	-0.008	0.008	-0.001	-0.105
	(-2.37)	(-0.63)	(1.52)	(-0.26)	(-0.65)
ROA	0.834***	-0.303***	0.076**	-0.076***	-1.318
	(11.50)	(-2.60)	(1.99)	(-3.69)	(-1.60)
TOT_ACC	-0.021	-0.032	0.011	0.010	-0.057
	(-1.03)	(-0.89)	(0.83)	(1.15)	(-0.15)
ICW	-0.029	0.002	0.020*	0.009	0.670**
	(-1.25)	(0.12)	(1.72)	(1.27)	(2.53)
SPECIALIST	0.016	0.020	-0.005	0.006	-0.107
	(1.17)	(1.61)	(-0.87)	(1.60)	(-0.61)
BDINDEP	0.003	0.050	-0.014	-0.020*	0.402
	(0.07)	(1.19)	(-0.84)	(-1.72)	(0.65)
BDSIZE	-0.001	-0.003	-0.000	0.001	-0.012
	(-0.27)	(-0.89)	(-0.11)	(1.21)	(-0.23)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	744	744	665	665	744
Adj. R^2 (Pseudo R^2 for Model (5))	0.508	0.290	0.185	0.222	0.138

Table 7 – continued

Panel B: Audit Quality and Audit Partner Gender and Experience (IV)

	AA	ABS_AA	DD	ABS_DD	REST
VARIABLES	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
INTERCEPT	0.393	-0.139	0.087	0.059	-0.829
	(1.29)	(-0.44)	(0.57)	(0.54)	(-0.15)
PRED_FEMALE_PTNR	-0.029**	-0.021*	-0.016**	-0.001	-0.845**
	(-2.13)	(-1.79)	(-2.34)	(-0.13)	(-2.38)
PRED_LPTNR_EXP	-0.044	0.031	-0.021	0.004	1.484
	(-0.79)	(0.62)	(-0.77)	(0.19)	(1.39)
FEMALE_DIR	-0.006	0.003	0.007	-0.005	0.080
	(-0.53)	(0.25)	(1.36)	(-1.39)	(0.41)
FEMALE_EXE	-0.005	-0.018**	0.002	-0.003	-0.002
	(-0.53)	(-2.07)	(0.36)	(-0.87)	(-0.01)
LDIR_AGE	-0.015	0.026	-0.036	0.011	-1.066
	(-0.18)	(0.34)	(-0.91)	(0.42)	(-0.86)
LEXE_AGE	-0.062	0.013	0.056**	-0.011	-0.825
	(-1.11)	(0.25)	(2.01)	(-0.57)	(-0.76)
LAT	0.007	-0.003	-0.005*	-0.005***	0.053
	(1.43)	(-0.64)	(-1.96)	(-3.19)	(0.67)
LEV	0.011	0.033	0.044***	-0.016*	-0.684*
	(0.37)	(1.08)	(2.70)	(-1.92)	(-1.66)
LOSS	0.033*	0.002	-0.016*	-0.005	-0.376*
	(1.91)	(0.12)	(-1.91)	(-1.07)	(-1.67)
SGROWTH	0.005	0.003	-0.012*	0.007	-0.016
	(0.75)	(0.63)	(-1.84)	(1.42)	(-0.06)
BTM	-0.006	0.014*	0.009*	-0.002	0.230
	(-0.94)	(1.88)	(1.88)	(-0.89)	(1.45)
CFO	-0.862***	0.201**	-0.153***	0.030	0.416
	(-13.89)	(2.17)	(-4.90)	(1.40)	(0.57)
FINANCING	-0.010	0.015	-0.004	0.009**	0.075
	(-0.86)	(1.37)	(-0.77)	(2.54)	(0.46)
SEGMENT	0.004	0.002	-0.001	-0.001	0.055
	(1.21)	(0.69)	(-0.86)	(-1.34)	(1.21)
FOR_SALES	-0.022	0.006	-0.005	-0.006	-0.486*
	(-0.93)	(0.30)	(-0.55)	(-0.93)	(-1.67)
ABRET	-0.027***	-0.011	0.005	-0.001	-0.278*
	(-2.84)	(-1.27)	(0.93)	(-0.21)	(-1.81)
ROA	0.835***	-0.295***	0.077**	-0.076***	-0.303
	(11.53)	(-2.92)	(2.00)	(-3.82)	(-0.52)
TOT_ACC	-0.023	-0.042**	0.009	0.012	-0.230
	(-1.10)	(-2.23)	(0.73)	(1.39)	(-0.67)
ICW	-0.024	-0.001	0.024**	0.010	0.975***
	(-0.96)	(-0.05)	(2.10)	(1.31)	(3.25)
SPECIALIST	0.017	0.009	-0.004	0.006	-0.116
	(1.29)	(0.78)	(-0.73)	(1.58)	(-0.66)
BDINDEP	-0.003	0.021	-0.016	-0.020*	0.483
	(-0.06)	(0.53)	(-0.97)	(-1.74)	(0.78)
BDSIZE	-0.001	-0.003	-0.000	0.001	-0.029
	(-0.42)	(-1.00)	(-0.34)	(1.39)	(-0.57)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	744	744	665	665	744
Adj. R^2 (Pseudo R^2 for Model (5))	0.507	0.314	0.185	0.222	0.145

Table 7 – continued

Table 7 presents coefficient estimates for regressions of the effect of audit partner gender and experience on output-based measures of audit quality. Panel A reports regression results of equations (4.1) and (4.2) using a standard OLS method. We use OLS regressions for abnormal accruals models and probit regression for restatement model. The dependent variables in models (1) and (2) are signed abnormal accruals (*AA*) and absolute abnormal accruals (*ABS_AA*) computed using the modified Jones model (Jones 1991; Kothari et al. 2005), respectively. The dependent variables in Models (3) and (4) are signed abnormal accruals (*DD*) and absolute abnormal accruals (*ABS_DD*) computed using the Dechow and Dichev (2002) model, respectively. In model (5), the dependent variable is a financial restatement (*REST*) dummy variable. Panel B reports regression results of equations (4.1) and (4.2) using an IV approach. The dependent variables in models (1) and (2) are signed abnormal accruals (*AA*) and absolute abnormal accruals (*ABS_AA*) computed using the modified Jones model (Jones 1991; Kothari et al. 2005), respectively. The dependent variables in Models (3) and (4) are signed abnormal accruals (*DD*) and absolute abnormal accruals (*ABS_DD*) computed using the Dechow and Dichev (2002) model, respectively. In model (5), the dependent variable is a financial restatement (*REST*) dummy variable. T-statistics (z-statistics in the restatement model) are shown in parentheses below the coefficient loading. Standard errors are corrected for heteroskedasticity using the White (1980) correction and corrected for serial dependence of error terms using standard errors that are clustered at the firm level. *, **, and *** indicate significance levels at less than 10 percent, 5 percent, and 1 percent, respectively, based on two-tailed tests. See Appendix for the other variable definitions.