Banks’ Audit Committees, Audit Firm Alumni, and Fees Paid to Audit Firm

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ABSTRACT

Purpose

This paper focuses on bank audit committees and examines whether audit committee members who are former auditors are associated with the acquisition of audit and non-audit services from their former employers.

Design/methodology/approach

We empirically examine a sample of large banks that are included in the S&P Composite 1500.

Findings

We find significantly lower audit fees and a higher proportion of non-audit fees to total fees when the audit committee chair is an alumnus of the incumbent audit firm. Moreover, additional analysis reveals that these findings are stronger for banks with more earnings management.

Implications

Overall, the findings indicate that audit firms might consider banks employing their alumni as audit committee chairs to be less risky or easier to audit, thus requiring relatively less effort from the auditors. The reduced effort required to audit clients with audit firm alumni on their audit committees then has the effect of reducing the audit fees charged. Alternatively, their auditing experience and cognitive proximity might influence the assessment of the need for auditing or the ability to negotiate lower audit fees on the part of audit firm alumni.

Originality/value

This paper provides empirical evidence of the association between audit firm alumni in influential positions on an audit committee and fees paid to those audit firms in the banking industry. The findings contribute to the literature by suggesting that banks with affiliated former auditors chairing their audit committees have significantly lower audit fees, but also a higher proportion is spent on non-audit services.
1. Introduction

This paper examines whether bank audit committees’ decisions on audit and non-audit services (NAS) are influenced by the presence of audit firm alumni\(^1\) on the committee. To the best of our knowledge, this is the first study focusing on audit firm alumni in the banking industry.

During the financial crisis, bank auditors were accused of providing poor quality.\(^2\) Safeguarding auditor independence and audit quality is one of the main purposes of an audit committee (U.S. House of Representatives 2002). Audit committee oversight is a central element in ensuring that the financial information is reliable. The banking industry is an interesting research setting owing to the high level of audit and NAS fees paid\(^3\) and because of the industry’s importance to the economy (Landsman and Peasnell 2013).\(^4\) On one hand, the complexity of bank operations and financial processes have the potential to create a greater demand for both audit and NAS. On the other hand, the public’s demands for scrutiny of banks might induce audit committees to prioritize audit quality, and to avoid high NAS because of the adverse impact on auditor independence. Consequently, bank audit committee members are under pressure to demonstrate appropriate expertise.

Audit firm alumni have the appropriate expertise to serve on the audit committee and efficiently evaluate the costs and benefits of the services provided by the auditors. However, proximity with the incumbent auditor may increase or reduce the quality of the audit committee decisions

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\(^1\) “Audit firm alumni” refers to directors that have a CPA and an employment history at the incumbent audit firm.

\(^2\) Accusations went as far as to suggest auditors were, “actively facilitating fraud” or “performing no audit at all” (see e.g. New York state Supreme Court, No. 451586/2010 and Southern District of New York, No. 08-md-01963).

\(^3\) 26 of the 50 largest audit fee paying companies in 2016 are from the banking industry. Despite this, the auditing literature, e.g. Naiker et al. (2013), typically excludes companies from the banking sector.

\(^4\) Banking crises are costly, for example Bordo et al. (2001) estimate losses of around 6 percent of GDP associated with the banking crises, whilst Laeven and Valencia (2013) document losses of about 30 percent of GDP during the global financial crises of 2007–2009.
(e.g., Boschma 2005; Nooteboom 1999). Particularly, audit firm alumni that have higher level of cognitive proximity with the audit firm can communicate with the auditors and understand the audit process, audit risk, and the extent of audit and NAS needed (Marxen 1996), which could affect the auditors’ assessment of audit engagement risk (Basioudis 2007). Nevertheless, the possible existence of social proximity and organizational identification could adversely impact audit committee effectiveness (e.g. Menon and Williams 2004). Social proximity and organizational identification can cause the audit committee to underestimate opportunism, thus reducing audit committee effectiveness (Boschma 2005; Lähdesmäki and Suutari 2012; Menon and Williams 2004; Uzzi 1997) or, alternatively, reduce auditor skepticism and thus impair audit quality (Iyer et al. 1997; Lennox and Park 2007; He et al. 2017). Consequently, proximity may impact audit and NAS fees.

Our sample comprises all banks featured in the S&P Composite 1500 between 2004–2012 and the final sample consists of 663 firm-year observations from 82 individual banks. The empirical findings indicate that banks have significantly higher proportions of non-audit fees to total fees when their audit committee chair is an audit firm alumnus. Further analysis suggests that the higher proportion of non-audit fees appears to be a result of lower audit fees. Based on previous

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5 Cognitive proximity, that is, sharing a common knowledge base, improves mutual understanding and communication between actors (e.g., Boschma 2005; Nooteboom 1999).
6 Mael and Ashforth (1992) define organizational identification “as a perceived oneness with an organization and the experience of the organizations successes and failures as one’s own”.
7 The example of IndyMac illustrates the potential problem. Prior to the IndyMac bankruptcy filing in July 2008, Ernst & Young failed to either identify or report misleading company filings. The chairman of the IndyMac audit committee was Hugh M. Grant, a former auditor, retired vice-chairman and the former regional managing partner of the EY Los Angeles office, which became the IndyMac auditor in 2001, a year after Mr. Grant was appointed to IndyMac. Owing to Mr. Grant’s auditing experience, the audit committee appeared to have the tacit knowledge and expertise required to manage the audit committee. However, the social and cognitive proximity between the audit committee chair and the audit firm may have had an impact on the audit and NAS purchases. Interestingly, preceding the bankruptcy, IndyMac reported an abnormally high non-audit fee to total fee ratio (0.54) for 2007 (0.67 in 2006). The average non-audit fee to total fee ratio for S&P1500 companies during 2006-2007 was, based on Audit Analytics data, about 0.19 for banks and 0.15 for non-banks.
studies (e.g., Basioudis 2007; Krishnan and Visvanathan 2009), audit firms can consider banks with one of their alumni serving as the audit committee chair to be less risky or easier to audit, resulting in lower audit fees. Alternatively, the alumni of the incumbent audit firm may be able to negotiate lower audit fees with their previous employer or demand less assurance overall.

The additional analyses suggest that among banks with lower earnings quality, audit committees including alumni of the incumbent auditors are positively associated with the proportion of non-audit fees, and negatively with audit fees. This finding is in contrast with the expectation that lower audit fees are a result of lower risk. In contrast, the finding may suggest that lower audit fees (effort) may hinder the auditors from identifying and constraining earnings management. Alternatively, social proximity might have resulted in a lack of skepticism, unjustifiably low risk assessments by the auditors, and (or) unjustifiably low demand for audit effort by bank audit committees.

Our findings contrast with those of Naiker et al. (2013), who report that among a sample of non-financial companies, both unaffiliated and affiliated former audit partners reduce the level and proportion of non-audit fees paid to the incumbent auditors. We consider alternative explanations for the contradictory findings. Firstly, Naiker et al. (2013) examine the years 2004–2005, a period with substantial increases in fees following the implementation of SOX. The trends presented by Audit Analytics (2017) suggest that both audit and non-audit fees (scaled by revenues) have been declining since that data period used by Naiker et al. (2013). Consequently, our results from the banking industry could indicate that audit fees of companies with audit firm alumni on their audit committees have been declining during this period more than those of companies without such

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8 There are three major players in audit fee negotiations: management, the auditor, and the audit committee (Beasley et al. 2009). Beck and Mauldin (2014) provide evidence that audit committee power impacts audit fee negotiations. Consequently, our results may suggest that client negotiation power and ability to reduce audit firm profits could be higher when audit committee chairs are alumni of the audit firm.
directors on the audit committee. Alternatively, our results may suggest that the association between audit firm alumni and fees differs in the banking industry from that in other industries.

Our study contributes to the audit and corporate governance literature. First, previous research has largely ignored the banking industry when investigating audit committee characteristics and fees paid to audit firms. Considering the size and the systemic risk posed by large banks in conjunction with the high levels of non-audit fees and the increased pressure on audit fees after the financial crisis (PCAOB 2011), audit committees in the banking industry play a particularly important role in ensuring that auditor independence and audit quality are maintained. Our paper hence extends prior studies by examining the association of former auditors on large banks’ audit committees and the acquisition of audit services and the pre-approval of NAS. Second, our paper potentially extends the literature on cognitive and social proximity. The evidence on the association between having alumni of the incumbent auditors on the audit committee and lower audit fees implies that cognitive proximity may improve the communication and understanding between the audit committees and the auditors. However, our paper also provides support for the importance of social proximity and the organizational identification of audit firm alumni. It is concerning that these findings exist in the context of more aggressive earnings management, thus suggesting that reducing audit fees may have unintended consequences on earnings management. Third, our paper contributes to the call for research on “the role of the audit committee chairs in facilitating effective audit committee performance” (Carcello, Hermanson and Ye, 2011). Finally, the findings support Bonner et al. (2002) and Tanyi and Smith (2015), by suggesting that chairs with functional experience of auditing and NAS, influence audit committee decision-making more than do ordinary members with similar experience.
2. Background and hypothesis development

2.1 Audit Committee Responsibilities Related to Audit and NAS

Audit committees are responsible for overseeing the financial reporting process and ensuring high-quality financial reporting (SEC 2003a), including the appointment, compensation, and supervision of the auditors (SOX 2002, Section 301). Specifically, Section 301 mandates audit committees to be directly responsible for determining the audit fees and Section 201 commands that non-prohibited NAS must be approved in advance by the audit committee (SOX 2002). Many types of NAS are prohibited since non-audit fees paid to the incumbent audit firm may threaten auditor independence and the actual or perceived audit quality by creating an economic bond between the auditor and the client (Unger 2001; Abbott et al. 2003). In terms of non-prohibited NAS, audit committees are given the decision-making role of considering the potential economic benefits of purchasing NAS from the auditors. That is, NAS provided by a firm’s auditors have the potential to improve audit work via knowledge spillover. Since overseeing the audit process, negotiating the audit fees and pre-approving NAS are the main responsibilities of the audit committee, the committee must evaluate the company’s relationship with the auditor in conjunction with these tasks.

Ensuring that an auditor provides a high level of assurance on the financial statements of banks may be more challenging than supervising an auditor for a non-financial firm, because the

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9 The findings in the prior studies on the association between NAS and audit quality are mixed. Some studies provide evidence that non-audit fees are associated with lower quality (Frankel et al. 2002; Srinidhi and Gul 2007), but most studies do not find such an association (e.g., DeFond et al. 2002; Ashbaugh et al. 2003; Chung and Kallapur 2003; Kinney et al. 2004; Mitra 2007; Habib 2012). Krishnan et al. (2005) and Francis and Ke (2006) show that non-audit fees are negatively associated with the market evaluation of earnings, suggesting that NAS are a threat to perceived independence. Kanagaretnam et al. (2010) suggest that fee dependence is negatively associated with earnings quality in the banking industry.
complexity of the instruments, operations, and financial processes impose greater demands on audit committee members’ expertise. The economic importance of the banking industry and the financial crisis illustrate the importance of high-quality auditing in banks. Audit quality encompasses audit expertise and effort, as well as objectivity and independence (e.g., DeAngelo 1981). These aspects may sometimes have conflicting effects on the procurement of services from the auditors, and the audit committees may face a trade-off between auditor expertise and independence. For example, incumbent auditors might be selected as providers of NAS because they offer the highest quality of permitted NAS or, alternatively, audit committees may believe that sourcing NAS from the incumbent auditors provides knowledge spillovers and operational benefits to the audit engagements (Turner 2001; Whisenant et al. 2003; Kinney et al. 2004).

2.2 Audit Committees with Audit Firm Alumni and Services Acquired from the Auditors

If they are to manage their various responsibilities, audit committees should be composed of members with appropriate expertise. Beck and Mauldin (2014) and Brown-Liburd and Wright (2011) provide evidence that powerful audit committees are able to restrict management influence on the auditor-client negotiations. Decisions related to the extent of audit services and whether to purchase NAS from the incumbent audit firm require expertise of the audit committee members

10 SEC (2003a) requires disclosure of whether the company’s audit committee has at least one financial expert, and the New York Stock Exchange listing requirements (2009) require that the members must be (or become) financially literate, and at least one member must have accounting or related financial expertise. In prior studies, audit committee members’ financial, accounting, and auditing expertise have been found to be positively associated with the effectiveness of the audit committees of non-financial companies (e.g., Abbott et al. 2003; Carcello and Neal 2003; Krishnan and Visvanathan 2008; Dhalwal et al. 2010; Carcello et al. 2011; Krishnan et al. 2011; Cohen et al. 2014; Seetharaman 2014). Because of the SEC (2003a) requirement that companies must disclose whether their audit committee has at least one financial expert, many prior studies have focused on examining this type of general financial expertise, and found an association with higher reporting quality (Abbott et al. 2003; Bédard et al. 2004; Carcello et al. 2011). More recent studies have provided evidence that accounting expertise rather than general financial expertise has a positive impact on financial reporting quality (e.g., Krishnan and Visvanathan 2008; Dhalwal et al. 2010; Schmidt and Wilkins 2013).
and having worked as an auditor should be a highly relevant source of experience (Naiker and Sharma 2009; Dhaliwal et al. 2010). Consequently, audit committees involving former auditors are likely to have greater power in audit fee negotiations. Members with auditing experience are also likely to be better able to evaluate the level of audit and NAS needed, while recognizing the effects of audit and non-audit fees on auditor independence and audit quality. Naiker and Sharma (2009) point out that former audit partners have years of direct experience of auditing internal controls and financial statements. Former auditors understand the audit process better than other members and should therefore be more competent in assessing the extent of assurance needed. Naiker et al. (2013) argue that directors with accounting and/or auditing backgrounds can be expected to have an in-depth understanding of the nature of different types of NAS. Overall, this type of functional experience could drive negotiations over audit and non-audit fees in different directions. For example, knowing the audit partner compensation structure or how audit firm or partner fee dependence could affect audit quality, puts former auditors in a better position to evaluate the potential effects of a joint provision of audit and NAS on auditors’ behavior.

Previous studies suggest that factors such as a shared background and interests can influence business negotiations (Jones 1991; Wildermuth et al. 2017). Cognitive proximity—sharing a common knowledge base and belonging to the same community of practice—facilitates efficient communication and improves mutual understanding in new or complex settings (e.g., Nooteboom 1999; Boschma 2005; Mattes 2012). Audit committee members who are former auditors share a professional background and knowledge base with the auditors. Consequently, cognitive proximity between the audit firm alumni and the incumbent auditors may (i) improve an audit committee’s
understanding of the benefits and costs of audit and NAS offered, and, (ii) facilitate communication about the company’s needs to the auditors (Iyer 1998). These two factors may influence audit and non-audit fees in both directions.

Their background can mean audit committee members who are alumni of the affiliated audit firm share a social association or bond with the audit firm and consequently the concept of social proximity might have an impact on the fees paid to the auditors. Audit firms often maintain contact with their former staff through newsletters and events and former colleagues may maintain communication on a personal level (Iyer 1997). Previous studies suggest that social proximity (socially embedded relations between actors) is likely to improve the exchange of knowledge owing to trust, kinship, loyalty, and experience (Boschma 2005 Lähdesmäki and Suutari 2012; Mattes 2012). However, social proximity can on occasion be a disadvantage in that it can lead to opportunism being underestimated or reduced critical evaluation (Uzzi 1997; Boschma 2005).

Consequently, proximity between alumni of the incumbent audit firm and the auditors can affect the effectiveness of the audit committee. Cognitive proximity is likely to improve the communication and exchange of knowledge, whereas social proximity can lead alumni to underestimate opportunism and/or the audit firm to evaluate the engagement risk at a lower level than is appropriate. Supporting this line of thought, previous studies offer evidence that social proximity and loyalty in the form of organizational identification influences the inclination of audit firm alumni to provide economic benefits to their former employer (Iyer et al. 1997; Lennox and Park 2007). Considering cognitive and social proximity, affiliated former auditors may be inclined to

11 Related to this stream of literature are the prior studies investigating social ties between board and management (e.g., Hoitash 2011; Bruynseels and Cardinaels 2014; Cohen et al. 2017).
push more profitable NAS toward their former employer and reduce the effort put into the audit, which could have an adverse effect on audit quality.

2.3 Former Auditors and Group Decision-Making

Advanced functional experience, such as the experience gained from working as an auditor, can affect the overall decision-making and performance of an audit committee in different ways. First, functional experience is likely to improve the individual members’ and the audit committee’s performance on tasks related to auditing or tasks requiring a high degree of sophistication, such as complicated technical issues and the accounting of financial instruments (DeZoort 1998), something that is particularly relevant in large banks. Second, expert members are also likely to have a significant impact on group decision-making when the task is difficult and related to the expert member’s specialty, and when other members are aware of that expertise (Bonner et al. 2002). Non-expert members are likely to rely on the expertise of audit firm alumni in audit-related decision-making. Third, we note that the audit committee chair is responsible for setting the meeting agenda, presiding over the meeting and discussion, building and maintaining the information flow between the audit committee, external auditors, internal auditors, and management (Beasley et al. 2009; Bédard and Gendron 2010; Bromilow and Keller 2011). Tanyi and Smith (2015) show that the roles of the chair and the financial expert are significant to the audit committee and, importantly, that companies with experts chairing the audit committee produce higher quality financial reporting. We therefore expect that audit firm alumni serving as audit committee chairs would have a stronger impact on audit committees’ audit fee negotiations and pre-approvals of NAS, than when a firm’s audit committee is chaired by someone lacking auditing expertise.
2.4 Hypotheses

Based on the above discussion, we expect that due to experience and cognitive proximity, the audit firm alumni would be very competent at weighing the benefits of audit and NAS and aware of the threat to auditor independence posed by an excessive proportion of non-audit fees. However, social proximity may also have an effect; for example, former auditors may be persuaded to push business to auditors in their network. Given these arguments, we state the following null hypothesis:

**H1:** There is no association between the presence of audit firm alumni on bank audit committees and the non-audit fee ratio

**H2:** There is no association between the presence of audit firm alumni on bank audit committees and the level of audit fees.

**H3:** There is no association between the presence of audit firm alumni on bank audit committees and the level of non-audit fees.

If our expectations are justified, we expect to reject the null hypothesis in favor of one of the alternatives, that is, to find that affiliated and unaffiliated audit firm alumni on bank audit committees have either a negative or a positive association with audit and non-audit fees.

3. Methodology

3.1. Sample Selection

Our initial sample consists of 819 bank-year observations from the 91 unique banks that are included in the S&P Composite 1500 index during the post-SOX fiscal years 2004–2012. We review the biographies of the audit committee members on BoardEx to identify whether the members have auditing experience and are alumni of their bank’s audit firm. Audit and non-audit fees are derived from Audit Analytics and the governance and financial variables are from Bankscope,
Audit Analytics, and Datastream. After eliminating bank-year observations with missing data, our final sample contains 663 bank-year observations from 82 individual banks.

3.2 Empirical Model

We employ a period-fixed panel regression with standard errors clustered on observations from each of the banks to examine the association between banks with former auditors on the audit committees and the fees paid for audit or non-audit services.

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FEES = \alpha_0 + \beta_1 \text{Affiliated alumni}_{i,t} + \beta_2 \text{Unaffiliated alumni}_{i,t} + \\
\beta_3 \text{Financial expert}_{i,t} + \beta_4 \text{Accounting expert}_{i,t} + \beta_5 \text{CEO Chair}_{i,t} + \\
\beta_6 \text{CEO is CPA} + \beta_7 \text{CFO is CPA} + \beta_8 \text{CFO affiliated with auditor} + \\
\beta_9 \text{Log of boardsize}_{i,t} + \beta_{10} \text{Board independence}_{i,t} + \beta_{11} \text{Log of AC size}_{i,t} + \\
\beta_{12} \text{Proportion of women on AC}_{i,t} + \beta_{13} \text{Log of total assets}_{i,t} + \\
\beta_{14} \text{Change in assets}_{i,t} + \beta_{15} \text{Impaired loans}_{i,t} + \beta_{16} \text{Tier1 ratio}_{i,t} + \\
\beta_{17} \text{Commercial loans}_{i,t} + \beta_{18} \text{Consumer loans}_{i,t} + \beta_{19} \text{Real estate loans}_{i,t} + \\
\beta_{20} \text{Other loans}_{i,t} + \beta_{21} \text{Return on average assets}_{i,t} + \beta_{22} \text{Big 4 auditor}_{i,t} + \\
\beta_{23} \text{Auditor change}_{i,t} + \beta_{24} \text{M&A or restructuring}_{i,t} + \\
\beta_{25} \text{Material weakness}_{i,t} + \beta_{26} \text{Restatement}_{i,t} + \\
\sum \beta_{27-29} \text{Bank type fixed effects} + \sum \beta_{30-37} \text{Year fixed effects} + \epsilon_{i,t}
\]

In our main analysis we estimate this regression in six different specifications, where the dependent variable, \(FEES\), is either the ratio of non-audit fees to total fees, the log of audit fees, or the log of non-audit fees. The test variables, Affiliated alumni and Unaffiliated alumni, capture the auditing experience of either the committee chair or the entire audit committee.
3.3 Variables of Audit Firm Alumni on the Audit Committee

Our test variables capture the presence, previous affiliation, and current role of alumni of audit firms on their bank employers’ audit committees. Consistent with Cohen et al. (2014) we use the board members’ comprehensive history of work employment provided by BoardEx to classify our test variable. Since we are primarily interested in alumni with auditing experience, we define directors with a CPA and an employment history at an audit firm as audit firm alumni. Since we are primarily interested in the former auditors’ affiliations with the current audit firm of the bank, we follow Naiker and Sharma (2009) and Naiker et al. (2013) and separate alumni that are affiliated with the incumbent audit firm and those that are unaffiliated. Moreover, following Bédard and Gendron (2010), Bromilow and Keller (2011) and Tanyi and Smith (2015) we run two different models. First, we examine whether having a former auditor as the audit committee chair (Affiliated alumni chair and Unaffiliated alumni chair) is associated with the audit and non-audit fees. Second, we examine whether having affiliated or unaffiliated alumni on the audit committee, either as a chair or as a member (Affiliated alumni and Unaffiliated alumni) is associated with audit and non-audit fees.

3.4 Control Variables

We control for confounding financial and governance characteristics. We follow SEC (2003a) and previous studies (e.g., Carcello et al. 2011; Cohen et al. 2014) and distinguish whether

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12 Naiker et al. (2013) separate former audit partners and other former auditors. The BoardEx biographies do not make this distinction. Consequently, we classify all directors with a CPA and a tenure at an audit firm equally, regardless of their rank in the audit firm. We are aware of the possibility that although a person has a CPA and worked for an audit firm, that person may not have worked on any audit engagements before becoming a director. While these factors may be considered limitations, we believe that they would, at most, bias our results towards not finding support to reject the null hypothesis.
an audit committee member is an Accounting expert or a Financial expert. Moreover, based on previous studies (Krishnan and Visvanathan 2009; Ittonen et al. 2011; Naiker et al. 2013; Jizi and Nehme 2018) we include the following controls on management, board, and audit committee quality: CEO/chair duality, CEO is CPA, CFO is CPA, CFO affiliated with auditor, Log of boardsize, Board independence, Log of AC size and Proportion of women on AC. CEO and CFO experience, such as the CPA certificate, may be associated with the banks investment in audit and non-audit services, since these managers may be in a position to evaluate the benefits of acquired services or influence the processes in a manner that reduces audit effort or the need for NAS. Larger, more independent and more diverse boards and audit committees are more likely to demand higher financial reporting quality, and therefore those characteristics could affect the demand or supply of audit or NAS.

We include bank size (Log of total assets) and growth (Change in assets) to control for the possibility that the proportion of audit and non-audit services differs systematically across banks of different sizes, and also changes in relation to their size (Naiker et al. 2013). We expect size and growth to be positively associated with audit and non-audit fees. We control for bank loan portfolio attributes and capital management by including the proportion of Impaired loans and the Tier1 ratio. Boo and Sharma (2008) find that the quality of a loan portfolio is associated with audit fees and Fields et al. (2004) report that capital risk is associated with audit fees, but regarding the NAS purchases we do not have expectations as to direction. We control for loan portfolio characteristics by including the proportion of Commercial loans, Consumer loans, Real-estate mortgage loans,

13 Consistent with e.g. Cohen et al. (2014) we search director biographies from BoardEx and define members who are not former auditors but have experience as a chief financial officer, chief accounting officer, controller, treasurer, or vice president finance, as accounting financial experts (Accounting expert chair and Accounting expert). Committee chairs who are bank designated financial experts are classified under Financial expert chair.

14 The sample does not include any CEO affiliated with auditor.
and Other loans of lagged total assets. Profitability (Return on average assets) is expected to be negatively associated with audit and non-audit fees (Frankel et al. 2002) and brand name auditors (Big 4 auditor) are expected to have fee premiums and a larger array of NAS, meaning that clients are more likely to purchase NAS from Big 4 audit firms. Auditor change may also be associated with changes in the audit and non-audit fees. Furthermore, we control for changes in the operating environment by including an indicator for mergers, acquisitions and restructuring (M&A or restructuring). Mergers and acquisitions or restructuring are expected to increase both audit fees and the demand for NAS. We also include Material weakness and Restatements to control for internal control and financial reporting quality. Finally, we control for Bank type by including indicator variables based on SIC codes for National Commercial Banks (SIC 6021), State Commercial Banks (SIC 6022), Other Commercial Banks (SIC 6029), and Federally Chartered Savings Institutions (SIC 6035). All variables are defined in Table 1.

4. Empirical results

4.1 Descriptive Statistics

Panel A of Table 2 reports the descriptive statistics. The descriptive statistics related to the dependent variables reveal that the average (median) bank pays about $4.0 million ($0.894 million)

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15 This information is derived from Audit Analytics’ internal control data, which indicates if an exemption to the internal control assessment was identified, and whether the exemption is due to an acquisition during the previous year. The information about restructuring is obtained from Datastream.
in audit fees and $1.6 million ($0.190 million) in non-audit fees.\textsuperscript{16} The average (median) proportion of non-audit fees of total fees is 0.190 (0.177), with the maximum reaching 0.671.\textsuperscript{17} About 40 percent of the banks in the sample have at least one former auditor on the audit committee (\textit{Affiliated alumni} + \textit{Unaffiliated alumni}), but only about six percent have former auditors who are affiliated with the incumbent audit firms. Similarly, we observe that about 16 percent of the banks have a former auditor chairing their audit committee (\textit{Affiliated alumni chair} + \textit{Unaffiliated alumni chair}), but only about three percent have audit committee chairs who are affiliated with the incumbent auditors.

[Insert Table 2 about here]

Turning to other control variables, the statistics reveal that about 53 percent of the banks have a CEO who also serves as the chair of the board. The majority (57 percent) of CFOs are CPAs and about 14 percent have had an affiliation with the incumbent audit firm. The mean value of bank size (\textit{Log of total assets}) in our sample is about 7.171, which translates to about $1,301 million of total assets. The average loan portfolio contains predominantly \textit{Real-estate loans} (about 41 percent). The \textit{Impaired loans} are about 1.1 percent of lagged assets, and the \textit{Tier1 ratio} is about 12.2, on average. Most banks employ a \textit{Big 4 audit firm} and about 4 percent had changed the audit

\textsuperscript{16} The maximum fees in our sample were paid by Bank of America to PWC: $96.6 million of audit fees in 2011, $33.2 million of non-audit fees in 2009, and $128 million of total fees in 2009. For comparison, Naiker et al. (2013) reports an average non-audit fee of about $1.1 million for non-financial firms in 2004—2005, whereas we estimate from the Audit Analytics (2017) report that the mean non-audit fee for accelerated filers in the period like ours (2004—2012) is about $0.869 million. Consequently, this confirms that the banks in our sample purchase significantly higher levels of NAS than average accelerated filers.

\textsuperscript{17} US Bancorp had a \textit{NAF\_RATIO} of 0.671 in 2007 - paying EY $13.9 million in non-audit fees and $20.7 million in total fees. The average \textit{NAF\_RATIO} reported by Naiker et al. (2013) is 0.304 and in Audit Analytics (2017) about 0.21. Consequently, the ratio of non-audit fees to total fees is significantly lower in our banking sample than in the Naiker et al. (2013) non-financial sample and the Audit Analytics (2017) accelerated filer sample. This indicates that while the level of non-audit fees is higher for banks than for the average accelerated filer, their audit fees are generally even higher, thus resulting in lower NAF ratios.
firm. Only 2.4 percent received a report for *Material weakness* from the auditor, while 9 percent had a *Restatement*.

In Panel B of Table 2, we compare the variable means of banks with former auditors on the audit committee to those with no such directors. Banks with no former auditors on the audit committee have significantly higher audit and non-audit fees than banks with former auditors. The results further show that banks with former auditors have a significantly higher likelihood of the CEO and CFO having a CPA, and the CFO having been affiliated with the incumbent audit firm. Interestingly, banks with former auditors have on average higher proportions of *Real-estate loans* and *Impaired loans*, they are more likely to use a Big 4 audit firm and less likely to get *Material weakness* reports. We rely on the multivariate analysis to test our hypotheses.18

### 4.2 Main Analysis

Table 3 presents the results from our main analysis examining the association between banks with audit firm alumni on the audit committee and the ratio of non-audit fees to total fees [columns (1) and (2)], log of audit fees [columns (3) and (4)], and log of non-audit fees [columns (5) and (6)]. That is, with each dependent variable, we estimate two models: In Model 1 we focus on the expertise of the chairs of the audit committees, and in Model 2 on the presence of audit firm alumni on the audit committee in general (either as the chair or as a member).

[Insert Table 3 about here]

The results on the non-audit fee ratio indicate a positive and significant (p<0.01, two-tailed) association with *Affiliated alumni chair* (Model 1). The coefficient implies that the non-audit fee

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18 The correlations (untabulated) between our variables of interest and the other independent variables used in the models are relatively low (all less than 0.250). Consequently, multicollinearity that potentially could result in excessively inflated standard errors does not appear to be of major concern.
to total fee ratio of banks with an Affiliated alumni chair is about 13 percent higher than for banks without an auditor alumnus serving as the chair of the audit committee. Moreover, the Wald test reveals that the coefficient for Affiliated alumni chair is significantly (p<0.05, two-tailed) larger than the coefficient for Unaffiliated alumni chair, suggesting that banks with Affiliated alumni chair approve significantly higher proportions of non-audit fees than do banks with Unaffiliated alumni chair. The test variables are insignificant in Model 2. Consequently, we partly reject the null hypothesis and conclude that banks with audit committees chaired by alumni of the incumbent auditors procure a larger proportion of NAS from the auditors.

Turning to the results in columns (3) and (4) of Table 3, we find a significant negative association between affiliated alumni and audit fees. The association is more pronounced when the affiliated alumni chair the audit committee (significance p<0.01, two-tailed, Model 1), although it is still marginally significant for affiliated alumni in general (p<0.1, two-tailed, Model 2). The coefficients suggest that audit fees are about nine percent lower if there are affiliated audit firm alumni on the audit committee and 14 percent lower when the committee is chaired by an audit firm alumnus. The variables relating to unaffiliated alumni are insignificant. The Wald test indicates that the coefficients for affiliated and unaffiliated former auditors are significantly different (p<0.05, two-tailed), but only in Model 1 (chairs). Consequently, it is possible that affiliated alumni either (1) improve the quality of financial reporting or internal controls to the extent that the audit requires less effort, (2) have expertise that helps them resist commissioning components of the audit that are not value enhancing, or (3) are able to negotiate lower audit fees with their former colleagues. In columns (5) and (6) of Table 3, we tabulate the results from the log of the
non-audit-fee model. The results indicate that the expertise of either audit firm alumni or audit committee members are not significantly associated with the level of non-audit fees.\textsuperscript{19}

These findings suggest that affiliated audit firm alumni approve a higher proportion of non-audit fees when appointed chair of a bank audit committee. Higher proportions of non-audit fees are typically considered a potential threat to auditor independence; however, the evidence reveals that the higher proportion of non-audit fees is a result of a significantly lower level of audit fees. The findings that the characteristics of the directors chairing the audit committee are more strongly associated with audit committee decisions are consistent with Bonner et al. (2002), Bédard and Gendron (2010), Bromilow and Keller (2011) and Tanyi and Smith (2015), which highlights the important impact of expert chairman.

5. Additional analysis

5.1 Financial Crisis

The global financial crisis had severe effects on the banking industry and auditing. Ettredge et al. (2014) found evidence of a significant decrease in audit fees in 2008, the first year of the recent global financial crisis. We examine how the financial crisis affects the association between audit firm alumni on audit committees and fees paid to the auditors.

Panel A of Table 4 reports the results for the pre-crisis period (2004–2007). Affiliated alumni (both Affiliated alumni chair and Affiliated alumni) appear to have significantly higher non-audit fee ratios (p<0.01, two-tailed), and significantly lower audit fees (p<0.05 and p<0.01, two-tailed).

\textsuperscript{19} As previously mentioned, we expect that regardless of rank and tenure, the experience and expertise gained from auditing, together with the potential cognitive social proximity with the audit firm, differentiate audit firm alumni from other audit committee members. To test whether the rank of former auditors’ drives these findings, we run the main analysis first on a sample where alumni auditors are former audit partners and then on a sample where alumni auditors are non-partners. The results (untabulated) in both samples are similar to the main findings and, therefore, they support our expectation that the rank of the audit firm alumni does not significantly drive the results.
Again, there is no association with the level of non-audit fees. Moreover, the findings indicate that in the pre-crisis period the *Unaffiliated alumni* of the audit firm on the audit committees are associated with significantly lower levels of audit fees (p<0.01, two-tailed) and non-audit fees (p<0.1, two-tailed), but not the *Unaffiliated alumni chair*. Finally, Panel B of Table 4 presents the results for the period of global recession (2008–2012). Consistent with the main analysis and the pre-crisis period, the *Affiliated alumni chair* is associated with significantly higher non-audit fee ratios (p<0.01, two-tailed) and lower audit fees (p<0.05, two-tailed). In summary, the positive association between affiliated alumni chairs and the non-audit fee ratio as well as the negative association between affiliated alumni chairs and the level of audit fees are prevalent both before and after the financial crisis.

5.2 Fees and Earnings Quality

As previously mentioned, affiliated alumni serving on audit committees might cause concern about the ability of audit firms to remain independent, and their willingness to withstand client pressure. Ittonen et al. (2018) show that bank audit committees including former auditors are negatively associated with earnings management. To further examine the relations between former auditors on audit committees and fees paid to the incumbent audit firm, we test whether our main findings are affected by the level of earnings quality. Following Naiker et al. (2013), we test this by dividing our sample into two groups based on the median of the absolute value of discretionary
loan loss provisions (DLLP). DLLP has previously been used as a measure of banks’ earnings management and audit quality (e.g., Kanagaretnam et al. 2010; DeBoskey and Jiang 2012).

Panel A of Table 5 presents the results for the sample with higher absolute values of discretionary loan loss provision, that is, greater earnings management. The results show that Affiliated alumni chair and Affiliated alumni are positively and significantly (p<0.01, two-tailed) associated with the non-audit fee ratio, and negatively and significantly (p<0.05 and p<0.1, two-tailed) with audit fees. Panel B of Table 5 indicates that, in the sample with lower absolute values of DLLP (i.e., less earnings management), an Affiliated alumni chair is positively and marginally significantly (p<0.1, two-tailed) associated with the non-audit fee ratio. Moreover, both Affiliated alumni chair and Affiliated alumni are negatively and significantly (p<0.1 and p<0.01, two-tailed) associated with audit fees. Interestingly, the coefficients and the significance levels of Affiliated alumni chair are higher in the sample with more earnings management. Overall, these results provide some evidence that audit committees including affiliated former auditors pre-approve higher proportions of non-audit fees and pay lower audit fees, when the bank appears to have more earnings management. Consequently, the findings further suggest that social proximity and organizational identification might drive the association between audit firm alumni on the audit committee and the fees paid to the audit firm.

5.3 Robust Regression Results

20 Following Kanagaretnam et al. (2010) and DeBoskey and Jiang (2012) we estimate DLLP by taking the ordinary least squares residual after regressing loan loss provisions (LLP) on non-performing loans (NPL), loan loss reserves (LLR), change in non-performing loans (ΔNPL), net loan charge-offs (NLC), change in total loans (ΔLOANS), total loans (LOANS), and fiscal year dummies (YEAR). We estimate DLLP separately for four types of banks, based on the banks’ SIC codes: National Commercial Banks (SIC 6021), State Commercial Banks (SIC 6022), Other Commercial Banks (SIC 6029), Federally Chartered Savings Institutions (SIC6035).
Because of a skewed distribution of audit fees, non-audit fees, and the ratio of non-audit fees to total fees, we run a robust regression using the least absolute value (LAV) regression, which is less sensitive to outliers in the data than an OLS regression (Wooldridge 2009). The results presented in Panel A of Table 6 confirm the positive and significant (p<0.01, two-tailed) association between Affiliated alumni chair and the non-audit fee ratio. Moreover, the LAV regression also confirms the negative and significant (p<0.01, two-tailed) association between Affiliated alumni and the audit fees. Interestingly, we also report a positive and significant (p<0.01, two-tailed) association between Affiliated alumni chair and the level of non-audit fees, suggesting that the fees banks incur for NAS are significantly larger if the chair of the audit committee is an affiliated former auditor.

5.4 Change Analysis

We acknowledge the counterintuitive possibility that our results suffer from endogeneity problems, specifically that former auditors self-select into banks with lower audit fees or higher non-audit fees. Consequently, we identify changes in the composition of audit committees that involve appointing or releasing alumni auditors and create a variable we call Alumni change. During our sample period, there are 26 changes ranging from no former auditors on the audit committee to at least one (Alumni change = 1) and six changes from at least one to none (Alumni change = -1). Given the low number of changes in our sample, we are unable to separate the changes to reflect whether they affected affiliated and unaffiliated auditors or the chair. Panel B of Table 6 shows that Alumni change is negatively and significantly (p<0.1, two-tailed) associated with audit fees, but not with non-audit fees or the non-audit fee ratio. This suggests that the appointment of audit firm alumni to the audit committee reduces audit fees and, moreover, that it is unlikely that
our results are driven by former auditors self-selecting into banks with lower fees or that banks with lower fees appoint former auditors.21

[Insert Table 6 about here]

6. Conclusions

This paper examines the association between audit committees with audit firm alumni and the procurement of audit and non-audit services in large banks. While audit firm alumni are likely to possess the necessary functional experience to make a positive impact on audit committee performance in ensuring high-quality financial reports, the influence they have over the procurement of audit and non-audit services may be more multifaceted, particularly in the case of audit committee members who are alumni of the incumbent audit firm.

We extend Naiker et al. (2013) by examining acquisition of audit services and pre-approval of NAS in large banks. The banking industry is interesting because recent history suggests that risk-taking, short-termism, and complex financial instruments contributed to the development of the financial crisis. Bank audit committee members must have a high level of accounting and financial expertise to understand complex financial reporting processes. We also extend previous studies by investigating whether bank officers with auditing experience who chair the bank’s audit committee are more strongly associated with the acquisition of audit services and the pre-approval of NAS (Bonner et al. 2002; Tanyi and Smith 2015).

21 We acknowledge that while first differencing is useful in controlling for unobservable time-invariant factors between banks, it does not control for all unobservable factors, and as such only mitigates endogeneity concerns.
Our findings indicate that audit committees including affiliated alumni, particularly those where an affiliated alumnus holds the chair, are associated with lower audit fees and higher proportions of non-audit fees. Interestingly, the additional findings indicate that this association is stronger in the context of greater earnings management. Overall, our results suggest that banks with affiliated alumni on the audit committee procure less audit services and commission a larger proportion of NAS from the incumbent audit firm than do banks whose audit committees are not chaired by experts. These findings contrasts with those of Naiker et al. (2013), who investigate a sample of non-financial companies during 2004–2005 and find that both affiliated and unaffiliated alumni are *negatively* associated with non-audit fee ratios. The contradictory findings imply either that the behavior of directors who are audit firm alumni has changed after the initial SOX years (i.e., during a period when audit and non-audit fees scaled by revenue have declined from the 2004–2005 levels), or that the special characteristics of companies in the banking industry influence individual directors’ behavior, and therefore the association between audit firm alumni and fees is different in the banking industry.

Importantly, this study is the first to examine the acquisition of audit services and the pre-approval of NAS by the audit committees of large banks. The paper also extends the audit and corporate governance literature (e.g., Naiker et al. 2013) by showing that audit firm alumni on audit committees may, on average, behave differently in banks and industrial firms. Moreover, our results extend the proximity literature (e.g., Boschma 2005; Nooteboom 1999) and that addressing corporate governance (Iyer et al. 1997; Lennox and Park 2007) by suggesting that while the cognitive proximity between audit firm alumni serving on bank audit committees and the incumbent auditors may reduce audit fees by improving the communication between the audit committees and the auditors, social proximity could pose a threat to auditor independence as a result of reduced
demands for assurance and greater proportions of NAS. Finally, we confirm previous findings (Bonner et al. 2002; Tanyi and Smith 2015) by showing that audit committee chairs with expertise have a significant influence on group decision-making. From an institutional perspective, our findings support regulations (SEC 2003b) mandating cooling-off periods affecting the appointment of audit firm alumni as independent members of the boards of clients of the audit firm that employed them.
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### TABLE 1
Variable definitions

| Test variables: | Definition |
|-----------------|------------|
| Affiliated alumni | equals to 1 if, based on BoardEx biographies, at least one of the audit committee members is a CPA with an employment history at the incumbent audit firm, zero otherwise |
| Unaffiliated alumni | equals to 1 if, based on BoardEx biographies, at least one of the audit committee members is a CPA with an employment history at an audit firm other than the incumbent audit firm, zero otherwise |
| Affiliated alumni chair | equals to 1 if, based on BoardEx biographies, the audit committee chair is Affiliated alumni, zero otherwise |
| Unaffiliated alumni chair | equals to 1 if, based on BoardEx biographies, the audit committee chair is Unaffiliated alumni, zero otherwise |

| Dependent variables: | Definition |
|---------------------|------------|
| log of audit fees | log of audit fees in dollars |
| log of non-audit fees | log of non-audit fees dollars |
| the ratio of non-audit fees to total fees | non-audit fees divided by total fees |

| Control Variables: | Definition |
|--------------------|------------|
| Financial expert | equals to 1 if, based on BoardEx biographies, at least one of the audit committee members, who is not alumni or accounting expert, is a bank designated financial expert, zero otherwise |
| Accounting expert | equals to 1 if, based on BoardEx biographies, at least one of the audit committee members, who is not alumni is an accounting financial expert, zero otherwise |
| Financial expert chair | equals to 1 if, based on BoardEx biographies, the audit committee chair, who is not alumni or accounting financial expert, is a bank designated financial expert, zero otherwise |
| Accounting expert chair | equals to 1 if, based on BoardEx biographies, the audit committee chair, who is not alumni, is an accounting financial expert, zero otherwise |
| CEO/chair duality | equals to 1 if the CEO also serves as the board chair, zero otherwise |
| CEO is CPA | equals to 1 if the CEO is a CPA, zero otherwise |
| CFO is CPA | equals to 1 if the CFO is a CPA, zero otherwise |
| CFO affiliated with auditor | equals to 1 if the CFO was previously affiliated with the incumbent audit firm, zero otherwise |
| Log of boardsize | log of the number of members on the board of directors |
| Board independence | proportion of board members that are independent |
| Log of AC size | log of the number of members on the audit committee |
| Proportion of women on AC | number of women divided by audit committee size |
| Log of total assets | log of total assets in thousands of dollars |
| Change in assets | change in assets from t-1 to t-0 divided by lagged assets |
| Impaired loans | impaired loans divided by lagged total assets |
| Tier1 ratio | tier 1 capital ratio |
| Commercial loans | commercial loans divided by lagged assets |
| Consumer loans | consumer loans divided by lagged assets |
| Real-estate loans | real-estate loans divided by lagged assets |
| Other loans | other loans divided by lagged assets |
| Return on average assets | return on 3-year average total assets |
| Big 4 audit firm | equals to 1 if the audit firm is one of the four largest audit firms, zero otherwise. |
| Variable               | Description                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Auditor change         | equals to 1 if the bank has changed the auditor from t-1 to t-0, zero otherwise                                                             |
| M&A or restructuring   | equals to 1 if the bank is engaged in a merger or acquisition based on the Audit Analytics internal control data indicating exemptions to the internal control assessment, or if the bank reported restructuring charges, zero otherwise |
| Material weakness      | equals to 1 if the bank has material weaknesses in the internal controls, zero otherwise                                                    |
| Restatement            | equals to 1 if the bank has issued a restatement, zero otherwise                                                                             |
| Bank type              | Indicator variables for National Commercial Banks (SIC 6021), State Commercial Banks (SIC 6022), Other Commercial Banks (SIC 6029), and Federally Chartered Savings Institutions (SIC6035). |
| Variable                                              | Mean   | Median | Max     | Min    | Std.dev. |
|-------------------------------------------------------|--------|--------|---------|--------|----------|
| **Dependent variables:**                              |        |        |         |        |          |
| Audit fee ($ millions)                                 | 4.024  | 0.894  | 96.600  | 0.225  | 11.958   |
| Non-audit fee ($ millions)                             | 1.610  | 0.190  | 33.200  | 0.000  | 5.006    |
| Ratio of non-audit fee to total fee                    | 0.190  | 0.177  | 0.671   | 0.000  | 0.138    |
| **Test variables:**                                   |        |        |         |        |          |
| Affiliated alumni                                     | 0.057  | 0.000  | 1.000   | 0.000  | 0.233    |
| Unaffiliated alumni                                   | 0.348  | 0.000  | 1.000   | 0.000  | 0.477    |
| Affiliated alumni chair                               | 0.027  | 0.000  | 1.000   | 0.000  | 0.163    |
| Unaffiliated alumni chair                             | 0.134  | 0.000  | 1.000   | 0.000  | 0.341    |
| **Control variables:**                                |        |        |         |        |          |
| Financial expert                                      | 0.164  | 0.000  | 1.000   | 0.000  | 0.371    |
| Accounting expert                                     | 0.220  | 0.000  | 1.000   | 0.000  | 0.415    |
| Financial expert chair                                | 0.103  | 0.000  | 1.000   | 0.000  | 0.304    |
| Accounting expert chair                               | 0.139  | 0.000  | 1.000   | 0.000  | 0.346    |
| CEO/chair duality                                     | 0.529  | 1.000  | 1.000   | 0.000  | 0.500    |
| CEO is CPA                                            | 0.145  | 0.000  | 1.000   | 0.000  | 0.352    |
| CFO is CPA                                            | 0.567  | 1.000  | 1.000   | 0.000  | 0.496    |
| CFO affiliated with auditor                           | 0.148  | 0.000  | 1.000   | 0.000  | 0.355    |
| Log of boardsize                                      | 2.510  | 2.485  | 3.258   | 1.609  | 0.239    |
| Board independence                                    | 0.828  | 0.857  | 1.000   | 0.000  | 0.108    |
| Log of AC size                                        | 1.505  | 1.386  | 2.197   | 1.099  | 0.249    |
| Proportion of women on AC                             | 0.133  | 0.000  | 0.667   | 0.000  | 0.155    |
| Log of total assets                                   | 7.171  | 7.007  | 9.373   | 6.099  | 0.676    |
| Change in assets                                      | 0.092  | 0.051  | 1.430   | -0.395 | 0.170    |
| Impaired loans                                        | 0.011  | 0.007  | 0.112   | 0.000  | 0.013    |
| Tier1 ratio                                           | 12.164 | 11.750 | 32.300  | 0.000  | 3.077    |
| Commercial loans                                      | 0.190  | 0.168  | 0.709   | 0.000  | 0.122    |
| Consumer loans                                        | 0.087  | 0.069  | 0.445   | 0.000  | 0.075    |
| Real-estate loans                                     | 0.406  | 0.397  | 1.093   | 0.000  | 0.194    |
| Other loans                                           | 0.002  | 0.000  | 0.059   | 0.000  | 0.008    |
| Return on average assets                               | 0.813  | 0.989  | 3.690   | -15.038| 1.139    |
| Big 4 audit firm                                      | 0.857  | 1.000  | 1.000   | 0.000  | 0.351    |
| Auditor change                                        | 0.044  | 0.000  | 1.000   | 0.000  | 0.205    |
| M&A or restructuring                                  | 0.086  | 0.000  | 1.000   | 0.000  | 0.281    |
| Material weakness                                     | 0.023  | 0.000  | 1.000   | 0.000  | 0.149    |
| Restatement                                           | 0.092  | 0.000  | 1.000   | 0.000  | 0.289    |
### TABLE 2  
(continued)

**Panel B. Equality of means between alumni subsamples**

| Variable                                      | ALUMNI |     |     |    |
|-----------------------------------------------|--------|-----|-----|----|
|                                               | YES    | NO  |     |    |
|                                               | (n = 262) | (n = 401) |    |    |
|                                               | Mean | Mean | Sign. |    |
| **Dependent variables:**                      |      |      |      |    |
| Audit fee ($ millions)                        | 2.094 | 5.285 | ***  |    |
| Non-audit fee ($ millions)                    | 0.957 | 2.037 | ***  |    |
| Ratio of non-audit fee to total fee          | 0.194 | 0.188 |      |    |
| **Control variables:**                       |      |      |      |    |
| CEO/chair duality                            | 0.527 | 0.531 |      |    |
| CEO is CPA                                   | 0.256 | 0.072 | ***  |    |
| CFO is CPA                                   | 0.660 | 0.506 | ***  |    |
| CFO affiliated with auditor                  | 0.260 | 0.075 | ***  |    |
| Log of boardsize                             | 2.516 | 2.506 |      |    |
| Board independence                           | 0.834 | 0.824 |      |    |
| Log of AC size                               | 1.520 | 1.494 |      |    |
| Proportion of women on AC                    | 0.141 | 0.128 |      |    |
| Log of total assets                          | 7.143 | 7.189 |      |    |
| Change in assets                             | 0.101 | 0.085 |      |    |
| Impaired loans                               | 0.013 | 0.010 | ***  |    |
| Tier1 ratio                                  | 12.133 | 12.184 |      |    |
| Commercial loans                             | 0.191 | 0.190 |      |    |
| Consumer loans                               | 0.086 | 0.087 |      |    |
| Realestate loans                             | 0.441 | 0.383 | ***  |    |
| Other loans                                  | 0.001 | 0.003 | **   |    |
| Return on average assets                     | 0.773 | 0.839 |      |    |
| Big 4 audit firm                             | 0.908 | 0.823 | ***  |    |
| Auditor change                               | 0.042 | 0.045 |      |    |
| M&A or restructuring                         | 0.027 | 0.125 | ***  |    |
| Material weakness                            | 0.008 | 0.032 | **   |    |
| Restatement                                  | 0.080 | 0.100 |      |    |

Notes: All p-values two-tailed and calculated from a test of equality of means. *, ** and *** denote p<.1, p<.05 and p<.01, respectively.
### TABLE 3
Main analysis

| Dependent Variable: | non-audit fees to total fees ratio | log of audit fee | log of non-audit fee |
|---------------------|------------------------------------|------------------|----------------------|
|                     | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors |
|                     | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Test Variables:     |        |        |        |        |        |        |        |        |
| Affiliated alumni chair | 0.128  | 3.004*** | -0.148 | -2.691*** | -0.248 | -0.544 |
| Unaffiliated alumni chair | 0.005  | 0.198  | -0.034 | -1.073  | -0.473 | -1.272 |
| Affiliated alumni   | 0.067  | 1.427  | -0.086 | -1.811*  | 0.028  | 0.136  |
| Unaffiliated alumni | -0.015 | -0.588 | -0.052 | -1.260  | -0.186 | -0.973 |
| Control Variables   |        |        |        |        |        |        |        |        |
| Financial expert chair | -0.014 | -0.555 | -0.046 | -1.261  | -0.274 | -0.716 |
| Accounting expert chair | -0.016 | -0.787 | -0.016 | -0.438  | -0.139 | -0.518 |
| Financial expert    | -0.005 | -0.203 | -0.064 | -1.615  | -0.471 | -1.352 |
| Accounting expert   | -0.025 | -1.057 | -0.032 | -0.885  | -0.221 | -0.624 |
| CEO/chair duality   | -0.031 | -1.695* | -0.034 | -1.788* | -0.057 | -2.091*** | -0.279 | -1.187 ** | -0.272 | -1.159 ** |
| CEO is CPA          | -0.057 | -2.269** | -0.053 | -2.073** | -0.024 | -0.709  | 0.090  | 0.359  | 0.187  | 0.765  |
| CFO is CPA         | -0.030 | -1.465 | -0.029 | -1.381  | 0.003  | 0.104  | 0.003  | 0.082  | 0.079  | 0.328  |
| CFO affiliated with auditor | 0.019 | 0.714 | 0.023 | 0.841  | -0.061 | -1.358 | -0.054 | -1.145 | 0.082  | 0.252  |
| Log of boardsize   | 0.047  | 1.025 | 0.061 | 1.372  | -0.053 | -1.011 | -0.052 | -0.934 | 0.411  | 0.839  |
| Board independence | -0.043 | -0.583 | -0.032 | -0.413  | 0.202  | 2.124** | 0.195  | 2.034** | -0.240 | -0.268 |
| Log of AC size      | 0.079  | 2.231** | 0.082 | 2.211** | 0.003  | 0.059  | 0.011  | 0.216  | 0.781  | 2.040** |
| Proportion of women on AC | -0.002 | -0.033 | -0.010 | -0.182  | -0.034 | -0.284 | -0.019 | -0.154 | -0.678 | -0.789 |
| Log of total assets | 0.067  | 2.775*** | 0.066 | 2.800*** | 0.679  | 18.968*** | 0.673 | 18.922*** | 1.360 | 5.010*** |
| Change in assets    | -0.034 | -0.504 | -0.038 | -0.559  | 0.094  | 0.996  | 0.075  | 0.764  | -1.069 | -1.378 |
| Impaired loans      | -0.744 | -1.570 | -0.576 | -1.208  | 1.207  | 1.674*  | 1.044  | 1.462  | -4.723 | -0.801 |
| Tier1 ratio         | -0.004 | -1.259 | -0.004 | -1.254  | 0.005  | 0.882  | 0.005  | 0.858  | -0.064 | -1.007 |

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| Dependent Variable: | non-audit fees to total fees ratio | log of audit fee | log of non-audit fee |
|---------------------|-----------------------------------|-----------------|----------------------|
|                     | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Commercial loans    | 0.143 | 1.600  | 0.138 | 1.551  | 0.077 | 0.445  | 0.129 | 0.733  | 3.759 | 2.570**| 3.934 | 2.809***|
| Consumer loans      | -0.077| -0.542 | -0.036| -0.243 | -0.010| -0.040 | -0.005| -0.019 | 1.495 | 1.016 | 1.730 | 1.051 |
| Real-estate loans   | 0.042 | 0.505  | 0.044 | 0.533  | -0.127| -0.878 | -0.102| -0.691 | 1.198 | 0.962 | 1.370 | 1.122 |
| Other loans         | -0.383| -0.347 | -0.541| -0.483 | 1.706 | 0.732  | 1.628 | 0.678  | 0.545 | 0.058 | -0.251| -0.023 |
| Return on average assets | 0.004 | 0.738  | 0.003 | 0.612  | -0.002| -0.268 | 0.000 | -0.051 | -0.089| -1.493| -0.090| -1.382 |
| Big 4 audit firm    | -0.004| -0.195 | -0.006| -0.281 | 0.074 | 2.329**| 0.078 | 2.462** | -0.465| -1.521| -0.406| -1.419 |
| Auditor change      | -0.047| -1.795*| -0.047| -1.763*| 0.006 | 0.224  | 0.007 | 0.283  | -0.577| -1.720*| -0.555| -1.671* |
| M&A or restructuring| -0.040| -1.987**| -0.044| -2.100**| 0.057 | 1.432  | 0.050 | 1.250  | -0.220| -0.983 | -0.358| -1.646 |
| Material weakness   | -0.021| -0.953 | -0.026| -1.066 | 0.156 | 1.837* | 0.145 | 1.705* | 0.292 | 1.116 | 0.181 | 0.665 |
| Restatement         | -0.041| -1.902*| -0.037| -1.802*| 0.029 | 0.896  | 0.029 | 0.907  | -0.247| -1.005| -0.240| -0.998 |
| Intercept           | -0.413| -1.766*| -0.453| -1.926*| 1.142 | 3.478***| 1.179 | 3.663***| -6.466| -1.810*| -6.607| -1.905* |
| Bank type fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed effects  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| $\beta_{AFF\_AUDITOR}=\beta_{UNAFF\_AUDITOR}$ | p<0.05 | p<0.05 | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. |
| N                   | 663  | 663  | 663  | 663  | 663  | 663  | 663  | 663  |
| Adj. $R^2$          | 0.232| 0.238 | 0.894 | 0.896 | 0.353| 0.352 |

Notes: All p-values are two-tailed. *, ** and *** denote p<.1, p<.05 and p<.01, respectively. The standard errors to calculate p-values are obtained after clustering observations from unique firms. All variables are as defined in Table 1.
### TABLE 4
Additional analysis: Pre and post financial crisis

#### Panel A: Pre financial crisis

| Dependent Variable: | non-audit fees to total fees ratio | log of audit fee | log of non-audit fee |
|---------------------|------------------------------------|-----------------|---------------------|
|                     | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors |
|                     | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Affiliated alumni chair | 0.125 | 3.191*** | -0.123 | -2.370** | 0.471 | 1.511 |
| Unaffiliated alumni chair | -0.005 | -0.119 | -0.027 | -0.598 | -0.231 | -0.778 |
| Affiliated alumni | 0.179 | 3.254*** | -0.180 | -2.979*** | -0.058 | -0.135 |
| Unaffiliated alumni | 0.011 | 0.338 | -0.122 | -2.023** | -0.655 | -1.900* |

#### Panel B: Post financial crisis

| Dependent Variable: | non-audit fees to total fees ratio | log of audit fee | log of non-audit fee |
|---------------------|------------------------------------|-----------------|---------------------|
|                     | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors |
|                     | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Affiliated alumni chair | 0.183 | 3.437*** | -0.163 | -2.014** | 0.021 | 0.064 |
| Unaffiliated alumni chair | 0.015 | 0.593 | -0.037 | -0.988 | -0.160 | -0.668 |
| Affiliated alumni | 0.059 | 1.221 | -0.056 | -0.937 | -0.023 | -0.053 |
| Unaffiliated alumni | -0.016 | -0.533 | -0.016 | -0.376 | -0.296 | -0.674 |

Notes: All p-values are two-tailed. *, ** and *** denote p<.1, p<.05 and p<.01, respectively. The standard errors to calculate p-values are obtained after clustering observations from unique firms. Results are based on the same model as in Table 3, but for brevity, the control variables are not tabulated. All variables are as defined in Table 1.
### TABLE 5

**Additional analysis: The effect of discretionary loan loss provisions**

#### Panel A: High Loan Loss Provisions (higher than median)

| Dependent Variable: | non-audit fees to total fees ratio | log of audit fee | log of non-audit fee |
|---------------------|-------------------------------------|-----------------|---------------------|
|                     | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors |
|                     | Coef.        | t-stat         | Coef.        | t-stat         | Coef.        | t-stat         |
| Affiliated alumni chair | 0.189        | 3.289***       | -0.156       | -2.240**       | 0.115        | 0.404          |
| Unaffiliated alumni chair | 0.000        | 0.019          | -0.044       | -1.041         | -0.364       | -1.538         |
| Affiliated alumni | 0.132        | 2.706***       | -0.120       | -1.900*        | 0.324        | 0.854          |
| Unaffiliated alumni | -0.011       | -0.422         | -0.069       | -1.400         | -0.289       | -0.824         |

#### Panel B: Low Loan Loss Provisions (Lower than median)

| Dependent Variable: | non-audit fees to total fees ratio | log of audit fee | log of non-audit fee |
|---------------------|-------------------------------------|-----------------|---------------------|
|                     | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors | Mod. 1: Chair | Mod. 2: Directors |
|                     | Coef.        | t-stat         | Coef.        | t-stat         | Coef.        | t-stat         |
| Affiliated alumni chair | 0.059        | 1.722*         | -0.103       | -1.961*        | 0.210        | 1.073          |
| Unaffiliated alumni chair | -0.005       | -0.132         | -0.011       | -0.272         | -0.319       | -1.309         |
| Affiliated alumni | 0.072        | 1.322          | -0.128       | -2.628***      | 0.121        | 0.280          |
| Unaffiliated alumni | 0.007        | 0.215          | -0.057       | -1.274         | -0.279       | -0.615         |

Notes: All p-values are two-tailed. *, ** and *** denote p<.1, p<.05 and p<.01, respectively. The standard errors to calculate p-values are obtained after clustering observations from unique firms. Results are based on the same model as in Table 3, but for brevity, the control variables are not tabulated. All variables are as defined in Table 1.
### TABLE 6

**Sensitivity analysis**

#### Panel A: Robust regression using least absolute values (LAV) regression

| Dependent Variable:          | non-audit fees to total fees ratio | log of audit fee | log of non-audit fee |
|------------------------------|------------------------------------|------------------|----------------------|
|                              | Mod. 1: Chair                      | Mod. 2: Directors |                      |                      |
|                              | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Affiliated alumni chair      | 0.132 | 4.536*** | -0.128 | -3.020*** | 0.266 | 3.022*** |
| Unaffiliated alumni chair    | -0.007 | -0.335 | -0.033 | -1.485 | -0.053 | -0.762 |
| Affiliated alumni            | 0.061 | 1.634 | -0.142 | -3.819*** | 0.080 | 0.836 |
| Unaffiliated alumni          | -0.015 | -0.698 | -0.057 | -2.006** | -0.148 | -1.836* |

#### Panel B: First differencing

| Dependent Variable:          | Δ non-audit fees to total fees ratio | Δ log of audit fee | Δ log of non-audit fee |
|------------------------------|--------------------------------------|--------------------|------------------------|
|                              | Mod. 1: Directors                    | Mod. 1: Directors  | Mod. 1: Directors      |
|                              | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Δ Alumni change              | 0.014 | 0.650 | -0.053 | -1.681* | -0.387 | -0.894 |

Notes: All p-values are two-tailed. *, ** and *** denote p<.1, p<.05 and p<.01, respectively. The standard errors to calculate p-values are obtained after clustering observations from unique firms. Results are based on the same model as in Table 3, but for brevity, the control variables are not tabulated. The standard errors used in the LAV regressions in Panel A are bootstrapped standard errors. Following Ettredge et al. (2014) we define change values in Panel B for the test variables and all continuous variables, whereas we keep dichotomous variables as in Equation 1. All variables are as defined in Table 1.

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