

# Management Influence on Auditor Selection and Subsequent Impairments of Auditor Independence during the Post-SOX Period\*

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## 1. Introduction

The objective of this study is to examine managerial involvement in auditor selection decisions when audit committees are “directly responsible” for auditor relationships, including selection of the audit firm. The Sarbanes-Oxley Act (SOX) of (2002) requires fully independent audit committees to be “directly responsible for the appointment, compensation, and oversight of the work of any registered public accounting firm” (Section 301). This statutory requirement is a regulatory attempt to eliminate management influence over the external auditor and align auditor incentives with those of the board and shareholders.<sup>1</sup> While regulators largely assume that audit committees take responsibility for auditor selection in the post-SOX period (Doty 2011), there exists no archival analysis testing this assumption. Therefore, the effectiveness of this regulation (SOX Section 301) remains uncertain. In this paper, we examine (a) whether contrary to the intent of SOX, managers continue to influence auditor selection decisions in the post-SOX period, and (b) whether this influence subsequently impairs auditor independence as presumed in the legislation.

With respect to (a), we use the association between management affiliation and auditor hiring as a way in which to identify management influence over auditor selection. Management affiliation is defined as a prior employment relationship of a manager (i.e., CEO, CFO, controller) with a Big 4 auditing firm. While an affiliation between a

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1. In his 2002 letter to the shareholders of Berkshire Hathaway, Warren Buffett shared the following insights: “far too many managers have fudged their company’s numbers in recent years, using both accounting and operational techniques that are typically legal but that nevertheless materially mislead investors. Frequently, auditors knew about these deceptions. Too often, however, they remained silent. The key job of the audit committee is simply to get the auditors to divulge what they know. To do this job, the committee must make sure that the auditors worry more about misleading its members than about offending management. *“In recent years auditors have not felt that way. They have instead generally viewed the CEO rather than the shareholders or directors, as their client. That has been a natural result of day-to-day working relationships and also of the auditors’ understanding that, no matter what the book says, the CEO and CFO pay their fees and determine whether they are retained for both auditing and other work. The rules that have been recently instituted won’t materially change this reality.”* (www.berkshirehathaway.com/letters/2002pdf.pdf, pp. 19–20, bold and italics added).

manager and his former audit firm employer is not necessarily “bad,” provisions in SOX presume that affiliations can have negative impacts on auditor independence and judgment. Furthermore, Lennox and Park (2007) find management affiliation has a significant impact on companies’ choices of Big 5 audit firms during 1995–2000, a period when audit committees did not have statutory responsibility for auditor selection. We expect this association between management affiliation and auditor selection would disappear in the post-SOX period if the regulation has had the intended effect of removing management influence from the auditor selection decision.

Contrary to this, we find management affiliation continues to have a significant impact on auditor selection during the post-SOX period. For example, univariate results indicate that Ernst & Young (EY) is appointed 29 percent of the time when there is no affiliation between the company’s management and EY. In contrast, EY is appointed 61 percent of the time when there is a management affiliation with EY. These univariate results are consistent with multivariate results that indicate management affiliation increases the probability of appointing EY by 27 percent. Similar results are obtained for two of the other Big 4 firms (PWC and KPMG) while results for Deloitte are weaker in both the pre- and post-SOX periods.

As audit committee quality varies across companies, we next examine whether the relationship between affiliation and auditor selection is affected by audit committee quality. Ex ante, it is unclear how audit committee quality would affect the extent of management influence over auditor selection. On one hand, a high quality audit committee may prohibit the selection of an affiliated auditor in order to prevent a threat to auditor independence. On the other hand, a high quality audit committee may be better equipped to deal with any independence concerns subsequent to the auditor selection date. Therefore, a high quality audit committee may be less concerned about the appointment of the manager’s former audit firm employer. In various empirical analyses, we find no evidence of high quality audit committees impacting the hiring of an affiliated auditor in the post-SOX period. Overall, our results suggest that management continues to have a significant influence over auditor selection during the post-SOX period.

With respect to research question (b), we examine how management influence over auditor selection affects subsequent auditor independence. The underlying presumption in SOX is that management influence over auditor selection leads to negative outcomes. As such, we search for evidence that management influence impairs auditor independence during the post-SOX period.

We find no consistent evidence that management influence over auditor selection leads to impaired auditor independence during the post-SOX period. While companies that hired “affiliate” auditors during the post-SOX period appear less likely to receive going-concern opinions compared with companies that hired “unaffiliated” auditors, we find no evidence that affiliate auditors are less likely to constrain earnings management (as proxied by the company’s propensity to meet or just beat analyst forecasts and abnormal accruals).

We next examine whether the relationship between hired affiliate auditors and audit quality is influenced by audit committee quality. We find the lower propensity of hired affiliate auditors to issue going-concern opinions is partially offset by audit committees that are larger and audit committees with accounting expertise. However, we find no evidence that audit committee quality impacts the relationship between hired affiliate auditors and the two proxies for earnings management (i.e., meeting or just beating the consensus analyst forecast and abnormal accruals).

Taken as a whole, our results provide no consistent evidence that management influence over auditor selection decisions during the post-SOX period necessarily leads to lower audit quality as assumed by the original legislation.

This study makes four contributions. This study is the first to provide large-sample archival evidence of management influence over auditor selection during the post-SOX period for companies selecting Big 4 audit firms. Our analysis complements recent survey and case-based evidence suggesting that managers continue to influence auditor selection (Cohen, Krishnamoorthy, and Wright 2010; Beasley, Carcello, Hermanson, and Neal 2009; Fiolleau, Hoang, Jamal, and Sunder 2013).

Second, we find no consistent evidence that managerial involvement in auditor selection decisions has adverse effects on audit quality during the post-SOX period. The lack of strong evidence casts doubt over the presumption in SOX that management influence necessarily leads to negative outcomes. This result may be due to the many governance mechanisms inserted into the auditor–client relationship with the passing of SOX, which limits the ability of management to influence audit quality, *even if* management is the driving force in choosing which auditor is hired. Thus, the concerns in SOX about management improperly influencing auditors may be unfounded. On the other hand, the lack of strong evidence could be attributable to the fact that the proxies for audit quality used in the archival literature have significant limitations (DeFond and Zhang 2014). Given the insignificant results and the limitations of our audit quality tests, we do not make policy recommendations.

Third, although prior studies examine the choice between hiring a Big N or non-Big N auditor, little is known about how companies choose from *among* the Big N audit firms. Moreover, little is known about the relative importance of management versus the audit committee in auditor selection, particularly in the post-SOX period. Therefore, this study contributes to research on auditor selection. The spirit of our analysis is related to Dao, Raghunandan, and Rama (2012) which considers shareholder ratification of the auditor appointment decision, which is another mechanism to enhance auditor independence through external (shareholder) input in the auditor selection process.

Fourth, previous studies on management-auditor affiliations are primarily motivated by the “cooling-off” provisions in SOX and address the consequences of hiring employees away from the external auditor rather than hiring an audit firm affiliated with current management.<sup>2</sup> In contrast, we examine a different mechanism which is a company’s selection of an audit firm who is affiliated with the company’s current management.

Section 2 discusses background and hypotheses. Section 3 discusses research methods and results. Section 4 presents supplementary analyses. Section 5 concludes with a summary and limitations of the study.

## 2. Background and hypotheses

### *Auditor selection and the regulatory environment*

As a result of the significant number of financial statement frauds discovered in the late 1990s and early 2000s, auditor independence again became a widely debated topic in the popular press and by the Securities and Exchange Commission (SEC 2000). Regulators viewed auditor independence as likely compromised when management is responsible for the selection, retention, and compensation of the external auditor, as auditors may view their responsibility as serving management rather than users of the financial statements.

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2. Lennox (2005) identifies three types of affiliations: employment affiliations, alma-mater affiliations [hired affiliates in our study], and chance affiliations. Prior studies on affiliations are primarily motivated by SOX Section 206 and the requirement for “cooling-off” periods for audit firm employees accepting employment with an audit client. The results of some studies support the necessity for cooling-off periods (e.g. Menon and Williams 2004; Krishnan and Dowdell 2004; Lennox 2005) by finding negative associations between proxies for audit quality and affiliations. On the other hand, some studies find no evidence that affiliations are associated with lower audit quality (Geiger, North, and O’Connell 2005; Geiger and North 2006; Geiger, Lennox, and North 2008).

SOX includes multiple regulatory changes aimed at improving auditor independence and aligning auditor incentives with those of the board and shareholders. One specific provision of SOX is the attempted removal of management from the auditor selection decision.<sup>3</sup> Section 301 of SOX states

The audit committee of each issuer, in its capacity as a committee of the board of directors, shall be *directly responsible* for the *appointment*, compensation, and oversight of the work of any registered public accounting firm employed by that issuer... for the purpose of preparing or issuing an audit report or related work, and each such registered public accounting firm shall report *directly* to the audit committee. (bold and italics added)

While recommendations existed prior to SOX for audit committees to appoint auditors, no statutory requirement existed until enactment of SOX.<sup>4</sup> These newly defined audit committee responsibilities represent an attempt to increase auditor independence by eliminating management influence over the external auditor, reducing auditors' ties with management, and aligning auditor incentives with those of the board of directors and investors (Mayhew and Pike 2004).

In a field study of the process by which a company and prospective auditors court each other and enter an engagement, Fiolleau et al. (2013) find that the proposal process is typically overseen by management. The company's Request for Proposal is prepared by management, and the auditors' communication with the company and audit committee is primarily, if not exclusively, coordinated by management. Further, management typically prescreens bidding audit firms and audit committees may request an auditor recommendation from management. In the extreme, management may make the selection decision with an audit committee's approval seen as perfunctory. All of these scenarios provide an opportunity for management to influence the auditor selection decision, even though the audit committee may be technically responsible for ratifying the chosen auditor. If managerial influence over auditor selection reduces auditor independence, as presumed by the SOX legislation, then audit committees' direct responsibility for auditor selection should enhance auditor independence.<sup>5</sup>

### *Management affiliation and auditor selection*

Managers' prior employment experience with external audit firms provides one channel through which management influence over auditor selection can be detected in the archival data. Prior research has documented that audit firm alumni who leave an audit firm have a propensity to provide economic benefits to their former firm (e.g., Iyer 1998; Iyer, Bamber, and Barefield 1997). Selection of an audit firm as the external auditor represents a significant economic benefit to the audit firm as an audit contract typically represents a multiyear annuity arrangement. While affiliation with an accounting firm is not necessarily

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3. Other measures included in SOX to improve auditor independence include limitations on hiring employees of the current auditor ("cooling-off" period; SOX Section 206), limitations on audit firms providing nonaudit services (SOX Section 201), mandated audit committee independence (SOX Section 301), and the creation of the PCAOB (SOX Section 101).
  4. Audit committee effectiveness was debated and scrutinized long before the deliberations of SOX. For example, the Blue Ribbon Committee Report on Improving the Effectiveness of Corporate Audit Committees (1999) provides recommendations and "best practices" to improve corporate audit committees, many of which were considered and implemented in SOX. These include fully independent audit committees, financial expertise of audit committee members, and audit committee responsibility for the relationship with the external auditor including auditor appointment and termination. See also Menon and Williams (1994).
  5. Prior research has documented the negative consequences of management exerting influence over the external auditor; for examples; see Carcello and Neal (2000, 2003).

bad, and may have no bearing on auditor independence, management affiliates who influence auditor selection may expect a benefit in return from the audit firm. These benefits may include better working relationships between the auditor and management or more nefariously an opportunity to exert influence over the auditor. Consistent with the notion that management has significant influence over auditor selection decisions, Lennox and Park (2007) find that managers' affiliations with audit firms are significant predictors of the identities of newly appointed Big 5 audit firms during the period 1995–2000. During this pre-SOX period, audit committees were not statutorily required to be responsible for auditor selection so it is perhaps unsurprising that management influence over auditor selection decisions is detected. In contrast, during the post-SOX period, management is presumed to have no responsibility for auditor selection. Thus, if SOX has been effective in removing management influence over auditor selection, we would expect no relationship between management affiliation and auditor choice during the post-SOX period.

In a recent survey, Cohen et al. (2010) find that Big 4 audit partners and audit managers view management (*not* the audit committee) as the “key driver” of auditor selection even in the post-SOX period. Fiolleau et al. (2013) find similar results in a case study as discussed above. The authors of both studies suggest their results appear contrary to the intent of SOX which is to eliminate management influence over auditor selection. Furthermore, their results raise the possibility that audit committees do not entirely control the relationship with the external auditor. On the other hand, in a survey of audit committee members, Beasley et al. (2009) reports that audit committees are properly carrying out their responsibilities for auditor selection as stipulated by SOX. This is also consistent with regulator perceptions (Doty 2011). The perceptions of audit committee members and regulators appear contrary to the results of Cohen et al. (2010) and Fiolleau et al. (2013). Accordingly, we test the following hypothesis stated in the alternative form:

HYPOTHESIS 1a. *Management influence (measured by management affiliation) has a significant impact on audit firm selection during the post-SOX period.*

While the provisions in Section 301 of SOX aim to eliminate management influence over the appointment of an external auditor, a more conservative expectation is that these provisions reduce, but do not completely eliminate, management influence. If the association between management affiliation and the choice of incoming auditor weakens significantly after SOX, this would indicate some reduction in managerial influence over auditor selection during the post-SOX period. Our next hypothesis is formally stated in the alternative form as follows:

HYPOTHESIS 1b. *Management influence (measured by management affiliation) has a significantly smaller impact on audit firm selection in the post-SOX period relative to the pre-SOX period.*

*Effect of Audit Committee:* The quality and attentiveness of the audit committee may impact management's ability to influence auditor selection. High quality audit committees may shy away from hiring auditors who are affiliated with management in order to avoid potential threats to auditor independence. On the other hand, it is also possible that high quality audit committees are less concerned about *which* audit firm conducts the audit, affiliated, or otherwise, and simply deal with independence and quality concerns as and when they arise subsequent to the initial auditor selection decision. Given the increased communications between the audit committee and the external auditor and the increased power afforded to the audit committee during the post-SOX period, the presence of an affiliation between a corporate manager and the audit firm may be less of a concern for



the audit committee. Therefore, it is unclear *ex ante* as to the directional effect of audit committee quality on the propensity to hire an auditor who is affiliated with management. Given this uncertainty, we examine the impact of audit committee quality but we do not make a directional prediction for the effect of audit committee quality on the relationship between management affiliation and auditor selection.

### *Hired affiliate auditors and auditor independence*

The Sarbanes-Oxley Act presumes that management influence over auditor selection yields negative outcomes as evidenced by the placing of this responsibility on the audit committee. Further, prior research suggests that auditor independence may be influenced by non-financial incentives such as personal, family, or professional relationships (Parlin and Bartlett 1994; Johnstone, Sutton, and Warfield 2001). As such, an auditor selected when current management is affiliated with the audit firm may face conflicting incentives with respect to maintaining objectivity in the conduct of the audit versus maintaining a relationship with the manager who influenced the audit firm selection decision.<sup>6</sup> More nefariously, the hired affiliate audit firm may have been selected in an attempt by management to exert undue influence over the auditor.

While an association between management affiliation and auditor selection may continue to exist in the post-SOX period, this association may not necessarily lead to impaired auditor independence. Hiring an affiliated auditor is not necessarily bad and may not be motivated by nefarious management intentions. For example, a manager may prefer to hire the audit firm that previously provided him with employment because the manager believes that his former employer is a better auditor than other auditors available to the company. Further, the additional mechanisms in SOX to enhance auditor independence and improve financial reporting quality may mitigate any potential negative impacts of affiliation and management influence over the auditor selection decision. While one provision of SOX may not be completely effective (the audit committee has direct responsibility for auditor selection) other provisions in SOX (such as regulation of the external auditors by the PCAOB and management certification of financial statements) may improve the overall effectiveness of audit committees, and/or the incentives of management, thus mitigating the potentially negative impact of management influence over auditor selection.

Cohen et al. (2010) document that, while auditors perceive management as the key driver in auditor selection decisions during the post-SOX period, these same auditors indicate that many aspects of auditor independence, audit quality, and financial reporting quality have improved. Furthermore, SOX Section 204 requires auditors to communicate critical accounting policies and alternative accounting treatments directly to the audit committee which could lead to increased oversight of the auditors by the audit committee, regardless of who selected the audit firm. Other studies, such as DeZoort, Hermanson, and Houston (2008) find similar results in reporting that “audit committee support for an auditor-proposed adjustment is significantly higher in the post-SOX period.” These observations taken as a whole suggest that hiring an affiliated auditor may not result in diminished auditor independence or objectivity.

To proxy for audit quality, we use the propensity of an auditor to issue a going-concern opinion and to constrain earnings management by reducing the client’s propensity to meet or just beat analyst forecasts. Prior literature has frequently used the propensity of

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6. Anecdotally, the Big 4 audit firms spend significant resources to maintain contact with their affiliates through networking events, website memberships, etc. A rational person would anticipate that the audit firms ultimately expect a benefit from investing in such relationships with their affiliates (commonly referred to as ‘alumni’ relation efforts). In our discussions, one partner noted “why do you think we spend so much on alumni [affiliate] relations?”

an auditor to issue a going-concern opinion as a proxy for auditor independence (Carcello and Neal 2000, 2003; Carey and Simnett 2006; DeFond, Raghunandan, and Subramanyam 2002; Reichelt and Wang 2010, among others). If affiliations reduce auditor independence as presumed by SOX, we expect affiliated auditors are less likely to issue GC opinions.<sup>7</sup>

Managers also have incentives to avoid missing analyst earnings forecasts. As a result, the propensity to meet or just beat analyst forecasts is a widely used proxy for earnings management (e.g., Bartov, Givoly, and Hayn 2002; Burgstahler and Eames 2006; DeGeorge, Patel, and Zeckhauser 1999; Koh, Matsumoto, and Rajgopal 2008; Matsumoto 2002). If a hired affiliate auditor is subject to self-serving managerial influence, we would expect companies with hired affiliate auditors to be associated with higher propensities to meet or just beat analyst earnings forecasts, relative to companies that do not hire affiliate auditors.

If hiring an affiliated auditor has a negative effect on audit quality as presumed in the SOX legislation, then we would expect a negative association between proxies for audit quality and hired affiliate auditors. Therefore, we test the following hypotheses:

*HYPOTHESIS 2a. Post-SOX, companies that hire affiliated auditors are associated with impaired independence as measured by a decreased propensity to receive a going concern opinion relative to companies without an affiliated auditor.*

*HYPOTHESIS 2b. Post-SOX, companies that hire affiliated auditors are associated with impaired independence as measured by an increased propensity to meet or just beat analyst earnings forecasts relative to companies without an affiliated auditor.*

Similar to our examination of Hypothesis 1, the association between hired affiliate auditors and audit quality may vary pre- and post-SOX and as such we examine the interaction between SOX and hired affiliates on our measures for audit quality.

*Effect of Audit Committee:* Management's ability to influence audit quality is likely impacted by the quality of the audit committee and how thoroughly the audit committee carries out its fiduciary responsibilities. Prior studies have shown that audit committee characteristics are associated with financial reporting outcomes (e.g., Carcello and Neal 2000, 2003; Dhaliwal, Naiker, and Navissi 2010; Klein 2002; Krishnan and Visvanathan 2008; Naiker and Sharma 2009). As high quality audit committees likely provide greater oversight to the financial reporting process (Anderson, Mansi, and Reeb 2004; Dhaliwal et al. 2010), ex ante we would expect high quality audit committees to reduce any negative effects stemming from the appointment of an affiliated auditor. Our hypothesis is formally stated as follows:

*HYPOTHESIS 2c. High quality audit committees reduce the negative association (if any) between companies that hired an affiliated auditor and subsequent audit quality.*

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7. For example, suppose that an auditor who is independent issues a GC opinion to a company that is assessed as having a bankruptcy probability in excess of 10 percent, whereas an auditor who lacks independence issues a GC opinion to the same company only if its bankruptcy probability exceeds 20 percent. The independent auditor has a lower threshold for issuing GC opinions and so will issue relatively more GC opinions. According to this argument, a more independent auditor will issue GC opinions more often to *both* companies that subsequently file for bankruptcy and companies that subsequently survive. In other words, our predictions about GC reporting are the same regardless of the company's ex post bankruptcy status. Nevertheless, we acknowledge that our analysis does not speak to the *accuracy* of auditors' GC opinions as predictors of future bankruptcy outcomes, that is, their type I and type II error rates.

### 3. Research method and results

#### *Sample selection and data*

We begin by identifying all Big 4 auditor appointments during the period January 1, 1995 through December 31, 2009 using the Auditor-Trak (1995–2000) and Audit Analytics databases (2001–2009). These two data sets provide a panel of Big 4 auditor appointments from 1995–2009.<sup>8</sup> We focus solely on Big 4 appointments for three primary reasons. First, while we hand-collect affiliation data for management who previously worked for any accounting firm, in practice, we find the vast majority of individuals who disclose previous public accounting experience are affiliates of the Big 4. Second, prior research examining management affiliations in the pre-SOX period examines only Big 5 affiliates (Lennox and Park 2007). Third, the Big 4 firms audit the majority of large public companies.<sup>9</sup>

We then make certain restrictions. First, we require proxy statements and Form 10-K filings in the year of the auditor switch in order to identify the prior employment histories of management at the time of the auditor selection. Second, we exclude foreign private issuers. Third, we exclude financial services entities (SIC codes 6029-999) due to differences in their financial reporting characteristics. Fourth, we recognize that during the demise of Andersen many Andersen offices were purchased by the remaining Big 4 accounting firms, and thus clients of these Andersen offices did not follow a typical auditor selection process. Following Kohlbeck, Mayhew, Murphy, and Wilkins (2008), we exclude these switches due to the unique circumstances surrounding the purchase of former Andersen offices. Lastly, we exclude companies that lack the necessary data for control variables. After these restrictions, our sample consists of 2,145 Big 4 auditor appointments.

For each Big 4 appointment, we hand-collect biographical information about managers from each company's proxy statement (Def 14A) and/or Form 10-K in order to identify any managers who previously worked for a Big 4 firm. We gather information on these affiliations for CEOs and all officers with financial or accounting positions (i.e., CEO, CFO, CAO, controller, etc.). Given that companies disclose biographical information only for their most influential employees, we believe these executives represent the managers who have the most influence over auditor selection. If a manager's biography mentions former employment with any of the Big 4 audit firms, the individual is labeled as a "management affiliate" of the respective Big 4 firm ( $MGMTXX$  equals one, where  $XX = EY, Deloitte, KPMG, \text{ or } PWC$ ). We find a total of 344 managers who previously worked for a Big 4 firm and where there is consequently an opportunity for the company to hire an audit firm that is affiliated with management within our sample of 2,145 Big 4 appointments. When the newly selected audit firm at the time of the auditor switch is the same firm as the previous employer of the company's manager, we code the variable  $HIREDAFF$  as equal to one for the existence of a "hired affiliate" auditor. There are 164 observations where  $HIREDAFF$  equals one.

Lastly, to measure the quality of the audit committee we hand-collect data from annual proxy statements on accounting expertise, meeting frequency, and size of the audit committee in the year of the Big 4 appointment. We follow Dhaliwal et al. (2010) to define accounting expertise of the audit committee (see Appendix for all variable definitions).

8. We exclude switches to Andersen in the pre-SOX period in order to have a balanced panel both pre- and post-SOX. We exclude switches after 2009 as our tests of audit quality require post-switch observations.

9. We acknowledge that focusing solely on Big 4 appointments is a limitation of our study, and therefore our results may not generalize to all auditor switches. There are approximately 17,000 auditor switches in Audit Analytics for the period 2001–2009, of which approximately 4,400 are Big 4 auditor appointments. When limiting the sample to companies that are publicly traded (i.e., in the COMPUSTAT database), there are approximately 9,900 switches during this same period, of which there are approximately 3,300 Big 4 appointments.



TABLE 1  
Auditor switch information

**Panel A:** Transition matrix of auditor switches

Predecessor firm	Incoming audit firm				Total
	DT	EY	KPMG	PWC	
<i>All Big 4 appointments 1995–2009</i>					
AA	180	203	155	157	695
DT		79	60	69	208
EY	72		77	84	233
KPMG	68	96		71	235
PWC	116	145	101	21 <sup>a</sup>	383
Non-B4	<u>93</u>	<u>130</u>	<u>92</u>	<u>76</u>	<u>391</u>
Total	529	653	485	478	2,145
<i>Pre-SOX Big 4 appointments (January 1995 to January 15, 2004)</i>					
AA	178	203	154	157	692
DT		46	43	47	136
EY	51		46	59	156
KPMG	40	68		57	165
PWC	68	118	83	21 <sup>a</sup>	290
Non-B4	<u>73</u>	<u>88</u>	<u>68</u>	<u>57</u>	<u>286</u>
Total	410	523	394	398	1,725
<i>Post-SOX Big 4 appointments (January 16, 2004 to December 2009)</i>					
AA	2	0	1	0	3
DT		33	17	22	72
EY	21		31	25	77
KPMG	28	28		14	70
PWC	48	27	18		93
Non-B4	<u>20</u>	<u>42</u>	<u>24</u>	<u>19</u>	<u>105</u>
Total	119	130	91	80	420

**Panel B:** Univariate comparisons of management affiliation and auditor selection

Firm	Appointments	Management		Appointment rate		Diff	p-value
		affiliates	Hired affiliates	Management affiliation	No management affiliation		
<i>All Big 4 appointments (1995–2009)</i>							
PWC	478	107	51	47.7%	20.9%	26.7%	<0.01
DT	529	79	28	35.4	24.3	11.1	0.02
EY	653	81	49	60.5	29.2	31.2	<0.01
KPMG	<u>485</u>	<u>77</u>	<u>36</u>	46.8	21.7	25.0	<0.01
Total	2,145	344	164	47.7%	25.0%	22.7%	
<i>Pre-SOX Big 4 appointments (1995 to January 15, 2004)</i>							
PWC	398	70	35	50.0%	21.9%	28.1%	<0.01
DT	410	55	20	36.4	23.4	13.0	0.03
EY	523	59	35	59.3	29.3	30.0	<0.01
KPMG	<u>394</u>	<u>50</u>	<u>22</u>	44.0	22.2	21.8	<0.01
Total	1,725	234	112	47.8%	25.0%	22.8%	

(The table is continued on the next page.)

TABLE 1 (continued)

Firm	Appointments	Management affiliates	Hired affiliates	Appointment rate		Diff	p-value
				Management affiliation	No management affiliation		
<i>Post-SOX Big 4 appointments (January 16, 2004 to December 31, 2009)</i>							
PWC	80	37	16	43.2%	16.7%	26.5%	<0.01
DT	119	24	8	33.3	28.0	5.3	0.57
EY	130	22	14	63.6	29.1	34.5	<0.01
KPMG	<u>91</u>	<u>27</u>	<u>14</u>	51.9	19.5	32.3	0.01
Total	420	110	52	47.3%	25.0%	22.3%	

  

Panel C: Management affiliates by position	
Chief executive officer (CEO)	29
Chief financial officer (CFO)	239
Other accounting/finance	<u>76</u>
Total	344

**Notes:**

<sup>a</sup>These 21 observations represent switches between Price Waterhouse and Coopers and Lybrand prior to their merger in 1998. Inclusion or exclusion of these switches does not affect the multivariate results.

p-values are based on two-tailed tests.

Variables are defined as follows:

Firm = The incoming audit firm (PWC = PricewaterhouseCoopers; DT = Deloitte; EY = Ernst & Young; KPMG).

Appointments = Number of auditor appointments for the respective firm.

Management Affiliates = Number of companies with management affiliates (i.e., managers who previously worked for a Big 4 firm).

Hired Affiliates = Number of companies who hire the manager's former audit firm employer as its new auditor.

Management Affiliation% = Hired Affiliates/Management Affiliates.

No Management Affiliation% = (FirmXX Appointments – Hired Affiliates of FirmXX)/(All Big 4 Appointments – Management Affiliates of FirmXX). For example, Ernst & Young is appointed 29.2% of the time without an EY management affiliate. The percentage is calculated as total EY appointments (653) less the number of EY hired affiliates (49), divided by total appointments (2,145) less the number of EY management affiliates (81).

Diff = Difference in appointment rates for appointment with and without management affiliates.

Table 1, panel A provides a “transition matrix” of Big 4 appointments, showing the names of the predecessor and successor auditors. For example, of 233 companies switching away from EY, 72, 77, and 84 companies subsequently appoint Deloitte, KPMG, and PWC. There are 391 appointments of a Big 4 firm where the predecessor auditor is a non-Big 4 firm. This transition matrix is then partitioned into the pre- and post-SOX periods.

Table 1, panel B provides univariate relationships between management affiliation and auditor selection decisions. For example, in our sample of 2,145 auditor switches there are 81 companies with executives who previously worked for EY. When a switching company has an executive affiliated with EY, we find that EY is appointed 60.5 percent of the time. In contrast, when there is no EY affiliate, EY is appointed only 29.2 percent of the time. The results are similar for KPMG and PWC suggesting that affiliation has a significant effect on auditor choice for three of the Big 4 audit firms ( $p < 0.01$ ). The relationship is weakest for Deloitte but is still statistically significant in the univariate test ( $p = 0.02$ ). Panel B also reports univariate results using January 15, 2004 to partition Big 4 appointments into pre- and post-SOX periods.<sup>10</sup> In general, the appointment rate with a management affiliate is qualitatively similar in the pre- and post-SOX periods (47.8 versus 47.3 percent).<sup>11</sup> The appointment rate with a management affiliate remains significantly higher than the appointment rate without a management affiliate in the post-SOX period (47.3 versus 25 percent). This difference in appointment rate with and without a management affiliate in the post-SOX period is statistically significant for three of the four audit firms (all but Deloitte). Table 1, panel C lists the position of each management affiliate in our sample. There are 29 CEO, 239 CFO, and 76 “other” accounting/finance affiliates in our sample.

### *Multivariate analysis of auditor selection*

While univariate statistics are informative, they fail to control for other factors that may influence auditor choice. To control for these other factors we employ a logistic regression that explains the company’s choice of auditor from among the Big 4. We estimate the following equation (variable subscripts omitted):

$$Pr(APPTXX = 1) = F(\beta_0 + \beta_1MGMTXX + \beta_2SPEC + \beta_3FBIG5 + \beta_4MATCHXX + e). \quad (1)$$

Our dependent variable (*APPTXX*) indicates the identity of the incoming auditor (EY, Deloitte, KPMG, PricewaterhouseCoopers) and, accordingly, there are four separate regressions, one for each audit firm. For example, *APPTEY* equals one if the company appoints EY as its new auditor, and zero if the company appoints one of the other three Big 4 firms. Our variable of interest (*MGMTXX*) is a dummy variable equal to one if a member of management is affiliated with audit firm “XX”; zero otherwise. For example, *MGMTEY* equals one if the company has a manager who was previously employed by EY, and zero otherwise. Consistent with Hypothesis 1(a), we expect  $\beta_1$  to be positive and significant.

While all factors influencing auditor selection cannot be observed empirically, we attempt to control for observable factors that may affect a company’s decision of which Big 4 firm to select. Prior studies suggest auditor specialization influences auditor selec-

10. We use January 15, 2004 as our partition between pre- and post-SOX periods as the Section 301 rules were finalized on April 25, 2003 and companies were required to comply with the rules beginning with either the first shareholder meeting after January 15, 2004 or October 31, 2004, whichever comes first. Results are qualitatively unchanged if we use July 30, 2002 to partition between pre- and post-SOX.

11. We acknowledge that the post-SOX restrictions on certain nonaudit services for external auditors may limit a company’s choice of auditor. However, we do not believe this will systematically bias our results toward finding an association between affiliation and auditor selection. In untabulated tests, we control for a company’s unrestricted need for nonaudit services by controlling for the ratio of nonaudit fees to total audit fees in 2001, that is, before the restrictions came into effect. Our results for the effect of management affiliation on auditor selection are unchanged.

tion, and therefore we control for whether the incoming auditor is a specialist in the company's industry (*SPEC*) (Balsam, Krishnan, and Yang 2003; Gul, Fung, and Jaggi 2009).<sup>12</sup> We also control for the size of the predecessor auditor (*FBIG5*). It is also possible that each Big 4 auditor has a unique type of clientele and the closeness of the match between the company and the audit firm's existing clientele affects the likelihood that an audit firm is selected. To control for this, we include the *MATCHXX* variable used in Lennox and Park (2007). The *MATCHXX* variable is generated based on the size, financial health, and two-digit industry code of the clientele of each Big 4 auditor. This captures the closeness of the match between the potential new client and the audit firm's existing clientele. Using all clients of Big 4 auditors from 1995 to 2009, we generate the likelihood that a switching company's characteristics match the clientele of each of the Big 4. *MATCHXX* is coded as a one if the selected firm is predicted to most closely match the clientele of firm "XX," and zero otherwise.<sup>13</sup>

To test Hypothesis 1(b), that management has less influence over auditor selection in the post-SOX period, we estimate the following equation (subscripts omitted):

$$Pr(APPTXX = 1) = F(\beta_0 + \beta_1MGMTXX + \beta_2POST + \beta_3POST \times MGMTXX + \beta_4FBIG5 + \beta_5MATCHXX + \beta_6SPEC + e). \quad (2)$$

The variable *POST* equals one for all Big 4 appointments after January 15, 2004 (post-SOX); zero otherwise. The coefficients of interest are  $\beta_3$  and the combined coefficient on  $\beta_1 + \beta_3$ . If management influence over auditor selection continues in the post-SOX period (H1a), then we would expect  $\beta_1 + \beta_3$  to be positive. If management influence over auditor selection has reduced in the post-SOX period (H1b), we would expect a negative coefficient for  $\beta_3$ .

#### ***Effect of audit committee quality***

We test the impact of audit committee quality on the hiring of an affiliated auditor by estimating the following equation:

$$Pr(HIREDAFF = 1) = F(\beta_0 + \beta_1AC\_MEET + \beta_2AC\_SIZE + \beta_3AC\_ACC\_EXP + \beta_4\%IND\_BOARD + \beta_5\#MEET\_BOARD + \beta_6RECENT + \beta_7DISMISSAL + \beta_8SPEC + \beta_9LNAT + \beta_{10}ZSCORE + \beta_{11}LIT + e). \quad (3)$$

The dependent variable (*HIREDAFF*) equals one if the company hires an affiliated auditor, zero otherwise. We use audit committee activity (number of audit committee meetings held in the year of the auditor switch) as an indicator for audit committee quality (*AC\_MEET*). We also use the size of the audit committee (*AC\_SIZE*) as this indicates the perceived importance of the audit committee to the board as a whole. Lastly, we use accounting expertise of the audit committee to proxy for audit committee quality (*AC\_ACC\_EXP*). Prior studies have used these variables as indicators of audit committee

12. We use the national specialist definition employed by Reichelt and Wang (2010). To ensure our results are not sensitive to this definition, we incorporate all the other industry specialist definitions used by Reichelt and Wang (2010). Our results in these untabulated tests are consistent with Table 3.

13. Lennox and Park (2007) find that company size does not affect a company's choice of auditor from among the Big 5 audit firms. In untabulated tests, we also find that company size, measured using the log of total assets, is statistically insignificant in model (1). Accordingly, we do not include this variable in our regression model. However, our results are qualitatively unchanged if the log of total assets is included as a control variable. Furthermore, size is one component of the *MATCHXX* variable.

quality (e.g. Abbott, Parker, and Peters 2004; Beasley, Carcello, Hermanson, and Lapides 2000; Dhaliwal et al. 2010; Farber 2005; Krishnan and Visvanathan 2008; Larcker, Richardson, and Tuna 2007). Our expectation is that larger and more active audit committees and audit committees with accounting expertise are associated with better oversight of the external auditor. Similar to Lennox and Park (2007) we control for the independence of the corporate board as a whole ( $\%IND\_BOARD$ ), the number of board meetings held in the year of the switch ( $\#MEET\_BOARD$ ), how recently the management affiliate left their former audit firm ( $RECENT$ ), whether the predecessor audit firm was dismissed by the client ( $DISMISSAL$ ), auditor industry specialization ( $SPEC$ ), size of the company ( $LNAT$ ), bankruptcy risk ( $ZSCORE$ ) and whether the company operates in a litigious industry ( $LIT$ ). Consistent with Lennox and Park (2007), (3) is estimated on the subsample of companies that have management affiliations ( $MGMTXX = 1$ ,  $n = 344$ ) as companies without any affiliated managers are unable to choose whether or not to hire an affiliated audit firm.

Table 2, panel A provides descriptive statistics for companies in the full auditor switch sample (column [1]), and companies with and without a management affiliate (columns [2] and [3]). Companies with management affiliates tend to be smaller, are more likely to report losses, and they more frequently have a non-Big 4 predecessor auditor. Table 2, panel B provides univariate statistics for companies with management affiliates who hire an affiliated auditor and those who do not. Panel B reports the variables used in both (1) and (2). We find companies who appoint an affiliated auditor ( $HIREDAFF = 1$ ) have audit committees that meet less frequently, their managers were employed at the incoming audit firm more recently, and these companies are more likely to dismiss the predecessor auditor rather than experience an auditor resignation.

We examine correlations among all variables in all models (untabulated). We calculate variance inflation factors (VIF) and note that all VIF are well below 10.0 in all regression models with the exception of the audit committee quality tests reported in Table 5.<sup>14</sup>

#### *Multivariate results on managers' influence over audit firm appointments*

We estimate (1) using the pooled sample of auditor switches from 1995 to 2009. Because it is impossible for the outgoing auditor to be selected as the incoming auditor in an auditor switch, we run (1) for each audit firm excluding switches away from the ultimately selected auditor. For example, in the regression with  $APPTEY$  as the dependent variable, the sample size (1,912) equals the total number of auditor switches (2,145) minus the companies that switched away from EY (233, as reported in Table 1).

Table 3, panel A, columns [1]–[4] report the results for the pooled sample of auditor switches from 1995 to 2009. The coefficients on  $MGMTXX$  are positive and statistically significant for three of the four Big 4 audit firms ( $p < 0.01$ ) and positive but statistically insignificant for Deloitte ( $p = 0.11$ ).<sup>15</sup> To evaluate the economic significance of the coefficients, we compute the marginal effect for each  $MGMTXX$  coefficient. We find that a management affiliate increases the probability of each audit firm's appointment by 20, 27, 8.5, and 21 percent for KPMG, EY, DT, and PWC, respectively. This is consistent with

14. Due to relatively small sample sizes in the post-SOX period, we find high collinearity between  $HIREDAFF$  and  $HIREDAFF \times AC\_SIZE$  (or  $AC\_ACC\_EXP$ ,  $AC\_MEET$ ) in the audit committee quality tests. To address multicollinearity, similar to other studies such as Tetlock (2010), we demean our variable of interest  $HIREDAFF$  and the audit committee variables ( $AC\_SIZE$ ,  $AC\_ACC\_EXP$ ,  $AC\_MEET$ ) before computing the interaction terms. Once demeaned, the variance inflation factors are all below 4.0. We find no significant differences between the demeaned results (untabulated) and the results reported in Table 5.

15. We note that Deloitte is the only Big 4 firm to retain its consulting division after SOX. It is possible there is a heightened overall auditor independence concern for Deloitte relative to other audit firms as a result and this may be manifest in less willingness to select Deloitte when management affiliates are present.



TABLE 2  
Descriptive statistics for auditor selection models

Descriptive statistics comparing company characteristics for the full auditor change sample [1], and companies with and without Big 4 affiliations [2], [3]

**Panel A:** Descriptive statistics for auditor selection model

Variable	Full sample [1]			Management affiliations [2]			No management affiliations [3]			Diff [2] vs [3] ( <i>p</i> -value)	
	<i>N</i>	Mean	Median	<i>N</i> <sup>a</sup>	Mean	Median	<i>N</i>	Mean	Median	Mean	Median
<i>SPEC</i>	2,145	0.174	0.000	323	0.146	0.000	1,822	0.179	0.000	0.12	0.14
<i>LNAT</i>	2,145	5.363	5.312	323	5.176	5.162	1,822	5.396	5.355	0.06	0.16
<i>LEV</i>	2,145	0.389	0.333	323	0.379	0.317	1,822	0.390	0.336	0.61	0.54
<i>ROA</i>	2,145	-0.127	0.008	323	-0.159	-0.001	1,822	-0.122	0.009	0.29	<b>0.07</b>
<i>LOSS</i>	2,145	0.451	0.000	323	0.498	1.000	1,822	0.442	0.000	<b>0.06</b>	<b>0.06</b>
<i>ZSCORE</i>	2,145	-1.553	-2.102	323	-1.462	-2.006	1,822	-1.569	-2.133	0.63	0.92
<i>FBIG5</i>	2,145	0.818	1.000	323	0.774	1.000	1,822	0.825	1.000	<b>0.04</b>	<b>0.03</b>

**Panel B:** Univariate statistics for affiliation sample (*MGMTXX* = 1, *n* = 323<sup>a</sup>)

Variable	Company does not appoint its managers' former audit firm ( <i>HIREDAFF</i> = 0)			Company does appoint its managers' former audit firm ( <i>HIREDAFF</i> = 1)			Difference in <i>p</i> -value	
	<i>N</i>	Mean	Median	<i>N</i>	Mean	Median	Mean	Median
<i>LEV</i>	159	0.33	0.18	164	0.43	0.41	<b>0.07</b>	<b>0.00</b>
<i>ROA</i>	159	-0.15	0.00	164	-0.17	0.00	0.75	0.68
<i>LOSS</i>	159	0.50	0.00	164	0.50	0.50	0.95	0.95
<i>AC_MEET</i>	154	5.68	5.00	161	4.76	4.00	<b>0.05</b>	<b>0.02</b>
<i>AC_SIZE</i>	158	3.18	3.00	164	3.10	3.00	0.38	0.43
<i>AC_ACC_EXP</i>	158	0.51	1.00	164	0.49	0.00	<b>0.66</b>	<b>0.66</b>
<i>%IND_AUDCOM</i>	159	0.93	1.00	164	0.85	1.00	<b>0.00</b>	<b>0.00</b>

(The table is continued on the next page.)

TABLE 2 (continued)

**Panel B:** Univariate statistics for affiliation sample ( $MGMTXX = 1, n = 323^a$ )

Variable	Company does not appoint its managers' former audit firm ( $HIREDAFF = 0$ )			Company does appoint its managers' former audit firm ( $HIREDAFF = 1$ )			Difference in $p$ -value	
	$N$	Mean	Median	$N$	Mean	Median	Mean	Median
#MEET_BOARD	153	8.07	8.00	159	8.06	7.00	0.99	0.10
%IND_BOARD	158	0.73	0.75	164	0.72	0.75	0.37	0.50
RECENT	159	0.45	0.00	164	0.57	1.00	<b>0.04</b>	<b>0.04</b>
DISMISSAL	159	0.32	0.00	164	0.54	1.00	<b>0.00</b>	<b>0.00</b>
LNAT	159	5.14	5.03	164	5.21	5.22	0.76	0.61
SPEC	159	0.12	0.00	164	0.17	0.00	0.19	0.19
ZSCORE	159	-2.02	-2.71	164	-1.81	-2.30	0.59	0.12
LIT	159	0.29	0.00	164	0.00	0.00	0.44	0.44

**Notes:**

Tests for differences in means are based on  $t$ -statistics for continuous variables and  $z$ -statistics for proportions. Nonparametric tests for median differences are based on the Wilcoxon rank sum test. All  $p$ -values are based on two-tailed tests. Statistically significant  $p$ -values are reported in bold.

Panel A: Full sample [1] provides descriptive statistics for all Big 4 appointments. Management affiliations [2] provides descriptive statistics for companies that appoint a Big 4 auditor and have an executive affiliated with a Big 4 audit firm. No management affiliations [3] provides descriptive statistics for companies that appoint a Big 4 auditor and do not have an executive affiliated with any Big 4 audit firm.

Panel B: Reports univariate statistics for companies that have managers who are former employees of Big 4 firms ( $MGMTXX = 1$ ) and partitions this sample between companies that hire the manager's former audit firm ( $HIREDAFF = 1$ ) and companies that do not ( $HIREDAFF = 0$ ).

<sup>a</sup>The difference between 344 management affiliates reported in Table 1 and 323 management affiliates reported in this table are 21 companies with two or more management members affiliated with an audit firm. Inclusion or exclusion of these 21 companies does not change inferences for any statistical tests. Variable definitions are included in the Appendix.

TABLE 3  
The impact of management influence on auditor selection

Multivariate logistic regression measuring the impact of management affiliation on auditor selection. Dependent variable is *APPTXX*, where “*XX*” = *KPMG*, *EY*, *DT*, *PWC*, as listed in each column below. If the given firm (column heading) is appointed, *APPTXX* is set to one, zero otherwise.

$$Pr(APPTXX = 1) = F(\beta_0 + \beta_1 MGMTXX + \beta_2 POST + \beta_3 POST \times MGMTXX + \beta_4 FBIG5 + \beta_5 MATCHXX + \beta_6 SPEC + e)$$

Panel A: Pooled auditor selection 1995-2009

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	Pooled KPMG	Pooled EY	Pooled DT	Pooled PWC	Pooled KPMG	Pooled EY	Pooled DT	Pooled PWC
<i>MGMTXX</i>	0.917	1.132	0.404	0.960	0.808	1.158	0.551	0.906
( <i>p</i> -value)	<b>0.00</b>	<b>0.00</b>	<i>0.11</i>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>
<i>POST</i>					-0.106	0.017	0.455	-0.042
					<i>0.47</i>	<i>0.20</i>	<b>0.00</b>	<i>0.79</i>
<i>POST</i> × <i>MGMTXX</i>					0.363	-0.148	-0.634	0.174
					<i>0.49</i>	<i>0.78</i>	<i>0.25</i>	<i>0.69</i>
<i>FBIG5</i>	0.171	0.049	0.230	0.444	0.167	0.069	0.278	0.442
	<i>0.21</i>	<i>0.68</i>	<b>0.09</b>	<b>0.00</b>	<i>0.22</i>	<i>0.57</i>	<b>0.04</b>	<b>0.00</b>
<i>MATCHXX</i>	0.606	0.169	0.802	0.214	0.604	0.151	0.820	0.214
	<b>0.00</b>	<b>0.09</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<i>0.13</i>	<b>0.00</b>	<b>0.07</b>
<i>SPEC</i>	-0.865	0.257	-0.402	0.659	-0.873	0.266	-0.366	0.658
	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.04</b>	<b>0.01</b>	<b>0.00</b>
Intercept	-1.196	-0.873	-1.204	-1.673	-1.173	-0.912	-1.337	-1.655
	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Joint test $\beta_1 + \beta_3$	1,910	1,912	1,937	1,762	<b>0.01</b>	<b>0.02</b>	0.86	<b>0.00</b>
<i>N</i>	0.03	0.01	0.02	0.03	1,910	1,912	1,937	1,762
Pseudo <i>R</i> <sup>2</sup>					0.03	0.01	0.02	0.03

(The table is continued on the next page.)

TABLE 3 (continued)

Multivariate logistic regression measuring the impact of management affiliation on auditor selection. Dependent variable is *APPTXX*, where “*XX*” = *KPMG*, *EY*, *DT*, *PWC*, as listed in each column below. If the given firm (column heading) is appointed, *APPTXX* is set to one, zero otherwise.  $Pr(APPTXX = 1) = F(\beta_0 + \beta_1 MGMTXX + \beta_2 POST + \beta_3 POST \times MGMTXX + \beta_4 FBIG5 + \beta_5 MATCHXX + \beta_6 SPEC + e)$

	[1]		[2]		[3]		[4]		[5]		[6]		[7]		[8]	
	KPMG		EY		DT		PWC		KPMG		EY		DT		PWC	
<i>MGMTXX</i>	0.816	1.113	0.529	0.933	1.142	1.193	1.017	1.017	1.142	1.193	1.017	1.017	1.142	1.193	1.017	1.017
( <i>p</i> -value)	<b>0.01</b>	<b>0.00</b>	0.08	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	0.97	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	0.97	<b>0.00</b>	0.97	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>
<i>FBIG5</i>	0.103	0.129	0.011	0.431	0.381	-0.179	1.066	0.475	0.381	-0.179	1.066	0.475	0.381	-0.179	1.066	0.475
	0.51	0.36	0.94	<b>0.01</b>	0.18	0.47	<b>0.00</b>	0.12	0.18	0.47	<b>0.00</b>	0.12	0.18	0.47	<b>0.00</b>	0.12
<i>MATCHXX</i>	0.489	0.193	0.849	0.193	0.961	-0.089	0.673	0.291	0.961	-0.089	0.673	0.291	0.961	-0.089	0.673	0.291
	<b>0.02</b>	<b>0.08</b>	<b>0.00</b>	0.13	<b>0.01</b>	0.71	0.13	0.38	<b>0.01</b>	0.71	0.13	0.38	0.13	0.71	0.13	0.38
<i>SPEC</i>	-0.877	0.205	-0.363	0.727	-0.881	0.688	-0.374	0.151	-0.881	0.688	-0.374	0.151	-0.881	0.688	-0.374	0.151
	<b>0.00</b>	0.13	<b>0.01</b>	<b>0.00</b>	0.05	<b>0.05</b>	0.31	0.70	0.05	<b>0.05</b>	0.31	0.70	0.05	<b>0.05</b>	0.31	0.70
Intercept	-1.110	-0.968	-1.118	-1.666	-1.477	-0.478	-1.464	-1.676	-1.477	-0.478	-1.464	-1.676	-1.477	-0.478	-1.464	-1.676
	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<i>N</i>	1,560	1,569	1,589	1,435	350	343	348	327	350	343	348	327	350	343	348	327
Pseudo <i>R</i> <sup>2</sup>	0.02	0.01	0.02	0.03	0.05	0.02	0.03	0.03	0.05	0.02	0.03	0.03	0.05	0.02	0.03	0.03

(The table is continued on the next page.)

TABLE 3 (continued)

Dependent variable is *HIREDAFF*, which equals one if the company selected an auditor affiliated with management, zero otherwise.

$$Pr(HIREDAFF = 1) = F(\beta_0 + \beta_1 AC\_MEET + \beta_2 AC\_SIZE + \beta_3 AC\_ACC\_EXP + \beta_4 \%IND\_BOARD + \beta_5 \#MEET\_BOARD + \beta_6 RECENT + \beta_7 DISMISSAL + \beta_8 SPEC + \beta_9 LNAT + \beta_{10} ZSCORE + \beta_{11} LIT + e)$$

Panel C: Affiliated auditor selection and audit committee quality

Variable	[1] Pooled	[2] Pooled	[3] Pooled	[4] Pre	[5] Pre	[6] Pre	[7] Pre	[8] Post	[9] Post	[10] Post
<i>AC_MEET</i>	-0.068	-0.077		-0.126	-0.134		-0.122	0.017	-0.018	
( <i>p</i> -value)	<b>0.05</b>	<b>0.03</b>		<b>0.04</b>	<b>0.03</b>		<b>0.06</b>	0.78	0.74	
<i>AC_SIZE</i>	-0.122	-0.128		-0.066	-0.0798			-0.164	-0.085	
	0.41	0.39		0.72	0.59			0.61	0.79	
<i>AC_ACC_EXP</i>	-0.031	-0.066		0.156	0.135			-0.489	-0.618	
	0.90	0.79		0.63	0.67			0.36	0.23	
<i>%IND_BOARD</i>	-0.545		-1.132	-1.508		-2.188	-1.086	1.280		0.711
	0.56		0.22	0.21		<b>0.07</b>	0.38	0.51		0.71
<i>#MEET_BOARD</i>	-0.001		-0.005	0.016		0.013	0.015	-0.079		-0.068
	0.96		0.81	0.43		0.53	0.46	0.13		0.18
<i>RECENT</i>	0.963	0.935	0.864	1.793	1.641	1.719	1.827	-0.320	-0.354	
	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	0.56	0.52	0.44
<i>DISMISSAL</i>	1.103	1.096	1.169	1.452	1.443	1.677	1.252	0.672	0.713	0.578
	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	0.18	0.15	0.22
<i>SPEC</i>	0.475	0.454	0.489	0.586	0.453	0.485	0.519	0.941	1.160	0.879
	0.17	0.18	0.15	0.18	0.28	0.24	0.23	0.32	0.18	0.25
<i>LNAT</i>	0.124	0.134	0.044	0.041	0.068	-0.064	0.059	0.211	0.174	0.163
	0.11	0.08	0.53	0.69	0.50	0.46	0.56	0.20	0.25	0.24
<i>ZSCORE</i>	0.023	0.026	0.023	0.007	0.008	0.011	0.015	0.131	0.184	0.158
	0.51	0.44	0.50	0.85	0.83	0.77	0.67	0.31	0.14	0.19

(The table is continued on the next page.)



TABLE 3 (continued)

Dependent variable is *HIREDAFF*, which equals one if the company selected an auditor affiliated with management, zero otherwise.

$$Pr(HIREDAFF = 1) = F(\beta_0 + \beta_1 AC\_MEET + \beta_2 AC\_SIZE + \beta_3 AC\_ACC\_EXP + \beta_4 \%IND\_BOARD + \beta_5 \#MEET\_BOARD + \beta_6 RECENT + \beta_7 DISMISSAL + \beta_8 SPEC + \beta_9 LNAT + \beta_{10} ZSCORE + \beta_{11} LIT + e)$$

**Panel C:** Affiliated auditor selection and audit committee quality

Variable	[1] Pooled	[2] Pooled	[3] Pooled	[4] Pre	[5] Pre	[6] Pre	[7] Pre	[8] Post	[9] Post	[10] Post
<i>LIT</i>	0.324 <i>0.21</i>	0.344 <i>0.18</i>	0.246 <i>0.33</i>	0.305 <i>0.37</i>	0.305 <i>0.36</i>	0.180 <i>0.59</i>	0.324 <i>0.35</i> -1.301	0.372 <i>0.43</i>	0.537 <i>0.25</i>	0.244 <i>0.59</i>
<i>%IND_AUDCOMM</i>							<b>0.08</b>			
Intercept	-0.530 <i>0.52</i> 307	-0.886 <i>0.11</i> 314	-0.392 <i>0.60</i> 312	-0.218 <i>0.84</i> 212	-1.052 <i>0.14</i> 216	0.096 <i>0.92</i> 215	0.456 <i>0.69</i> 212	-0.593 <i>0.75</i> 95	-0.142 <i>0.92</i> 98	-0.537 <i>0.76</i> 97
Pseudo $R^2$ (%)	8.5	8.5	7.4	17.1	16.0	15.4	18.1	8.1	7.6	6.1

**Notes:**

*p*-values are calculated based on two-tailed tests. Panel A includes all Big 4 appointments in the period 1995–2009. *N* is calculated as total Big 4 appointments (2,145) less companies switching away from the respective audit firm. For example, panel A, column [1] reports a sample size of 1,910

Big 4 appointments which is calculated as total Big 4 appointments (2,145) less auditor switches away from KPMG (235) identified in Table 1, panel A (2,145–235 = 1,910). Panel B includes all Big 4 appointments partitioned into the pre- and post-SOX periods. Panel C includes all Big 4

appointments with a management affiliate meeting the necessary data restrictions (*n* = 307). All models include year and industry fixed effects with

standard errors clustered at the company level. Variables are defined in the Appendix.

Numbers shown in italics are *p*-values; *p*-values shown in bold are statistically significant at the 10 percent level or better (two-tailed).

the univariate results (Table 1) suggesting that management affiliation has an economically meaningful impact on companies' choices of Big 4 audit firms.

Table 3, panel A columns [5]–[8] report the results of (2). The coefficients on  $POST \times MGMTXX$  are statistically insignificant in all four regressions. Therefore, despite the new regulations, there appears to be no significant change in appointments of affiliated auditors between the pre-SOX and post-SOX periods. We also find that the combined coefficient on  $MGMTXX + POST \times MGMTXX$  is positive and statistically significant ( $p < 0.05$ ) for all firms with the exception of Deloitte suggesting that managers retain significant influence over auditor selection in the post-SOX period for three of the Big 4 auditors.

Table 3, panel B columns [1]–[4] report results of (1) including only pre-SOX Big 4 appointments. The coefficients on  $MGMTXX$  are positive and significant for all firms and the coefficients on  $MGMTXX$  represent increases in the probability of appointment by 18, 28, 11, and 20 percent for KPMG, EY, Deloitte, and PWC, respectively. Columns [5]–[8] report results of (1) including only post-SOX Big 4 appointments. The coefficients on  $MGMTXX$  are positive and statistically significant, with the exception of Deloitte, and represent increases in the probability of appointment by 25, 26, and 23 percent for KPMG, EY, and PWC, respectively.

Table 3, panel C reports the results of (2) which is estimated separately for the pooled sample, that is, pre- and post-SOX. Of our three measures of audit committee quality, only audit committee activity ( $AC\_MEET$ ) significantly influences the probability of hiring an affiliated auditor. We find the coefficient on  $AC\_MEET$  is negative and statistically significant in the pooled (columns [1] and [2]) and pre-SOX (columns [4] and [5]) regressions. This is consistent with more active audit committees (as measured by the number of meetings) reducing the probability of hiring an affiliated auditor. However, the coefficients on  $AC\_MEET$  are statistically insignificant in the post-SOX analysis (columns [8] and [9]) suggesting no association between audit committee activity and the hiring of an affiliated audit firm during the post-SOX period. The coefficients on  $AC\_SIZE$  and  $AC\_ACC\_EXP$  are statistically insignificant in all regressions suggesting the size and accounting expertise of the audit committee do not influence the hiring of an affiliated auditor. In column [3], we also control for audit committee independence in the pre-SOX period ( $\%IND\_AUDCOM$ ) and find a negative and significant coefficient on  $\%IND\_AUDCOM$ . This is consistent with Lennox and Park (2007) suggesting more independent audit committees reduce the propensity of hiring an affiliated auditor in the pre-SOX period. Overall, we find mixed evidence that proxies for audit committee quality reduce the probability of selecting an affiliated auditor in the pre-SOX period and no evidence of an audit committee quality effect during the post-SOX period.<sup>16</sup>

With respect to our control variables, we find board characteristics ( $\%IND\_BOARD$ ,  $\#MEET\_BOARD$ ) do not systematically influence selection of an affiliated auditor as the coefficients are generally statistically insignificant. The recency of the manager's former employment with an audit firm ( $RECENT$ ) and the dismissal of the predecessor auditor rather than auditor resignation ( $DISMISSAL$ ) are positively associated with hiring an affiliated auditor. The effect appears to be driven by the pre-SOX period as the coefficients on  $RECENT$  and  $DISMISSAL$  are insignificant post-SOX. Overall, our evidence suggests managers continue to influence their companies' choice of Big 4 auditors in the post-SOX period and this result does not appear to be mitigated by common proxies for audit committee quality.

16. In untabulated results, we interact two of our audit committee quality proxies ( $AC\_SIZE$ ,  $AC\_MEET$ ) with  $MGMTXX$  and reestimate (1). We find qualitatively similar results to those reported above; that is, there is little evidence that audit committee quality influences the hiring of an affiliated auditor.

### *Multivariate analysis of auditor independence*

As the above results suggest that management continues to exert influence over auditor selection in the post-SOX period, we next examine the association between hiring an affiliated auditor and proxies for audit quality.

We use the auditor's propensity to issue a going-concern opinion and the company's propensity to meet or just beat analyst earnings forecasts to gauge whether affiliations have a negative impact on audit quality. Table 4 provides descriptive statistics for the test and control variables. For both the going-concern and meet or just beat tests, we include the first two fiscal-year ends after the Big 4 appointment. To verify that the affiliate relationship continues post-switch, we hand-collect management affiliation data from subsequent proxy statements. If the management affiliate remains with the company, *HIREDAFF* is coded equal to one, zero otherwise. Table 4, panel A (Going concern sample) and panel B (Analyst forecast sample) partition the sample on whether the company year has an affiliated auditor (*HIREDAFF*). The going-concern sample yields 2,302 observations while the analyst forecast sample yields 1,860 observations.

### *Propensity to issue a going-concern opinion*

The probability of issuing a going-concern opinion (after controlling for company financial health) has been used in prior studies as a measure of audit quality (e.g., Lennox 2005; DeFond et al. 2002; Francis and Yu 2009).<sup>17</sup> If hiring an affiliate auditor results in lower audit quality, we would expect the hired affiliate auditors are less likely to issue a going-concern opinion. We utilize a logistic regression similar to Reichelt and Wang (2010) to examine the effect of hired affiliate auditors on the propensity to issue a going-concern opinion. The dependent variable (*GC*) equals one when a going-concern opinion is issued; zero otherwise. Our model is as follows:

$$\begin{aligned} Pr(GC = 1) = & F(\beta_0 + \beta_1 HIREDAFF + \beta_2 POST + \beta_3 POST \times HIREDAFF + \beta_4 LAG\_GC \\ & + \beta_5 LNAT + \beta_6 STDEARN + \beta_7 LOSS + \beta_8 MTB + \beta_9 LIT + \beta_{10} ZSCORE \\ & + \beta_{11} ROA + \beta_{12} SPEC + \beta_{13} ACCRUALS + yearFE + industryFE + e). \end{aligned} \quad (4)$$

*HIREDAFF* is equal to one for each company year with an affiliated auditor; zero otherwise. *POST* is an indicator variable equal to one for all company-year observations where the Big 4 firms were appointed after January 15, 2004. If management influence over auditor selection has a negative impact on audit quality as presumed in SOX, then we would expect companies with hired affiliate auditors would have a lower likelihood of receiving going-concern opinions. Therefore, under Hypothesis 2a, we expect  $\beta_1 + \beta_3$  to be negative. For brevity, the control variables are defined in the Appendix.<sup>18</sup> We include year and industry fixed effects (based on Fama-French 17 classification) and cluster standard errors at the company level.

Table 5, panel A tabulates the number of going-concern opinions by year. There are 138 going-concern opinions (approximately 6 percent of our sample). Table 5, panel B,

17. An alternative research design would be to limit the sample to companies filing for bankruptcy and model the propensity of these firms to receive going-concern opinions (Feldman and Read 2010; Geiger, Raghunandan, and Rama 2005). Given our design choice (auditor switches), we are unable to obtain a sufficient sample size using this alternative method. Furthermore, as clients likely prefer a "clean" audit opinion, we are interested in an auditor's willingness to issue a going-concern opinion rather than the accuracy of those opinions as predictors of future bankruptcies.

18. We exclude a measure of leverage from our model due to collinearity between leverage and *ZSCORE* which includes leverage as a component of the bankruptcy risk measure. Our results are unchanged if we drop *ZSCORE* and include leverage.

TABLE 4  
Descriptive statistics for audit quality tests (Hypothesis 2)

Descriptive statistics for going concern and propensity to meet or just beat analyst forecasts tests.						
<b>Panel A:</b> Going concern ( $N = 2,302$ )						
Variable	No hired affiliates			Hired affiliates		
	<i>N</i>	Mean	Median	<i>N</i>	Mean	Median
<i>GC</i>	2,157	0.06	0.00	145	0.07	0.00
<i>POST</i>	2,157	0.59	1.00	145	0.31	0.00
<i>LAG_GC</i>	2,157	0.04	0.00	145	0.04	0.00
<i>LNAT</i>	2,157	5.22	5.20	145	4.72	4.52
<i>STDEARN</i>	2,157	81.57	9.55	145	37.13	6.74
<i>LEV</i>	2,157	0.29	0.24	145	0.33	0.28
<i>LOSS</i>	2,157	0.46	0.00	145	0.54	1.00
<i>MTB</i>	2,157	2.30	1.81	145	1.05	1.56
<i>LIT</i>	2,157	0.23	0.00	145	0.26	0.00
<i>ZSCORE</i>	2,157	-1.58	-2.70	145	-1.69	-2.24
<i>ROA</i>	2,157	-0.08	0.05	145	-0.07	0.03
<i>SPEC</i>	2,157	0.19	0.00	145	0.15	0.00
<i>ACCRUALS</i>	2,157	-0.14	-0.07	145	-0.10	-0.07
<i>AC_SIZE</i>	411	3.57	3.00	45	3.51	3.00
<i>AC_MEET</i>	408	8.61	8.00	45	8.40	8.00
<i>AC_ACC_EXP</i>	409	0.69	1.00	45	0.73	1.00
<b>Panel B:</b> Propensity to meet or just beat analyst forecasts ( $N = 1,860$ )						
Variable	No hired affiliates			Hired affiliates		
	Observations	Mean	Median	Observations	Mean	Median
<i>JUST MEET</i>	1,760	0.23	1.00	100	0.20	0.00
<i>MVE</i>	1,760	6.43	6.33	100	5.75	5.75
<i>NOA</i>	1,760	3.44	0.62	100	1.05	0.73
<i>DOWNREV</i>	1,760	0.53	1.00	100	0.62	1.00
<i>FIRIMAGE</i>	1,760	19.15	12.00	100	15.25	11.00
<i>SPEC</i>	1,760	0.19	0.00	100	0.15	0.00
<i>ANALYSTS</i>	1,760	8.90	7.00	100	6.79	6.00
<i>STDEV</i>	1,760	0.16	0.05	100	0.16	0.05
<i>LEV</i>	1,760	0.22	0.18	100	0.28	0.26
<i>HORIZON</i>	1,760	4.27	4.00	100	4.17	4.00
<i>POSUE</i>	1,760	0.42	0.00	100	0.37	0.00
<i>AC_SIZE</i>	452	3.61	3.00	47	3.55	3.00
<i>AC_MEET</i>	448	8.87	8.00	47	8.06	8.00
<i>AC_ACC_EXP</i>	449	0.69	1.00	47	0.70	1.00

**Notes:**

This table provides descriptive statistics for the variables used to test Hypothesis 2, after partitioning the sample by *HIREDAFF*. *HIREDAFF* is an indicator variable equal to one if the company has hired an affiliated auditor for the respective year. In panel A, the sample size is determined by including the switch year and year + 1 identified in Table 2, and meeting the necessary data requirements for (3). The sample in Panel B is obtained in the same manner, subject to the necessary data requirements for (4). See the Appendix for variable definitions.

TABLE 5  
Hired affiliate auditors and the propensity to issue a going-concern opinion

Logistic regression on the impact of hired affiliate auditors on the propensity to issue a going-concern opinion. Dependent variable (*GC*) equals one if a going-concern opinion is issued.

Panel A: Going concern opinion frequencies by year

Year	<i>N</i>	<i>GC</i> = 1	Percent	Year	<i>N</i>	<i>GC</i> = 1	Percent
1995	69	2	2.9	2003	432	14	3.2
1996	145	13	8.9	2004	95	0	0.0
1997	175	19	10.8	2005	76	3	4.0
1998	169	18	10.6	2006	73	2	2.7
1999	132	12	9.1	2007	80	2	2.5
2000	118	16	13.6	2008	91	7	7.7
2001	114	11	9.6	2009	91	2	2.2
2002	429	17	4.0	2010	13	0	0.0
				Total	2,302	138	6.0

Panel B: Multivariate going-concern reporting model

$$Pr(GC = 1) = F(\beta_0 + \beta_1 HIREDAFF + \beta_2 POST + \beta_3 POST \times HIREDAFF + \beta_4 LAG\_GC + \beta_5 LNAT + \beta_6 STDEARN + \beta_7 LOSS + \beta_8 MTB + \beta_9 LIT + \beta_{10} ZSCORE + \beta_{11} ROA + \beta_{12} SPEC + \beta_{13} ACCRUALS + yearFE + industryFE + e)$$

Variable	[1] Pooled sample		[2] Pre-SOX		[3] Post-SOX		[4] Post-SOX		[5] Post-SOX		[6] Post-SOX	
	Coeff.	<i>p</i> -value	Coeff.	<i>p</i> -value	Coeff.	<i>p</i> -value	Coeff.	<i>p</i> -value	Coeff.	<i>p</i> -value	Coeff.	<i>p</i> -value
<i>HIREDAFF</i>	0.251	0.62	0.345	0.47	-3.085	0.00	-17.733	0.00	-5.560	0.02	-15.046	0.00
<i>POST</i>	-0.824	0.37										
<i>POST</i> × <i>HIREDAFF</i>	-0.706	0.46										
<i>AC_SIZE</i>							-0.285	0.55				

(The table is continued on the next page.)



TABLE 5 (continued)

**Panel B:** Multivariate going-concern reporting model

$$Pr(GC = 1) = F(\beta_0 + \beta_1 HIREDAFF + \beta_2 POST + \beta_3 POST \times HIREDAFF + \beta_4 LAG\_GC + \beta_5 LNAT + \beta_6 STDEARN + \beta_7 LOSS + \beta_8 MTB + \beta_9 LIT + \beta_{10} ZSCORE + \beta_{11} ROA + \beta_{12} SPEC + \beta_{13} ACCRUALS + yearFE + industryFE + e)$$

Variable	[1] Pooled sample		[2] Pre-SOX		[3] Post-SOX		[4] Post-SOX		[5] Post-SOX		[6] Post-SOX	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
<i>AC_SIZE</i> × <i>HIREDAFF</i>							3.820	<b>0.00</b>				
<i>AC_MEET</i>									0.081	0.48		
<i>AC_MEET</i> × <i>HIREDAFF</i>									0.152	0.47		
<i>AC_ACC_EXP</i>												
<i>AC_ACC_EXP</i> × <i>HIREDAFF</i>												
<i>LAG_GC</i>	3.439	<b>0.00</b>	3.344	<b>0.00</b>	2.017	0.13	2.135	0.14	1.816	0.19		
<i>LNAT</i>	-0.549	<b>0.00</b>	-0.506	<b>0.00</b>	-1.581	<b>0.00</b>	-1.523	<b>0.00</b>	-1.578	<b>0.00</b>	12.655	<b>0.00</b>
<i>STDEARN</i>	0.000	0.30	0.002	<b>0.01</b>	0.000	0.91	0.000	0.89	0.000	0.83	0.000	0.86
<i>LOSS</i>	2.022	<b>0.00</b>	2.025	<b>0.00</b>	1.064	0.23	1.140	0.25	0.871	0.31	0.734	0.51
<i>MTB</i>	-0.005	<b>0.11</b>	-0.005	0.14	0.119	<b>0.00</b>	0.113	<b>0.00</b>	0.117	<b>0.00</b>	0.112	<b>0.00</b>
<i>LIT</i>	0.300	0.33	0.000	0.99	2.782	<b>0.01</b>	2.726	<b>0.01</b>	2.666	<b>0.01</b>	2.482	<b>0.05</b>
<i>ZSCORE</i>	-0.019	0.19	-0.026	0.16	0.407	<b>0.05</b>	0.392	<b>0.07</b>	0.384	<b>0.05</b>	0.396	<b>0.09</b>
<i>ROA</i>	-0.292	0.24	-0.404	0.20	0.724	<b>0.57</b>	0.780	0.53	0.489	0.71	0.526	0.68
<i>SPEC</i>	0.436	0.18	0.111	0.74	1.417	0.24	1.379	0.25	1.357	0.26	1.574	0.29
<i>ACCRUALS</i>	-0.045	0.21	-0.045	0.20	0.623	<b>0.34</b>	0.614	0.35	0.601	0.34	0.156	0.87
Intercept	-3.337	<b>0.00</b>	-12.207	<b>0.00</b>	-0.421	0.83	0.203	0.91	-0.608	0.75	1.504	0.68
Joint hypothesis $\beta_1 + \beta_3$	0.59						<b>0.00</b>					<b>0.03</b>
N	2,032		1,696		337		333		333		333	
Pseudo R <sup>2</sup>	0.42		0.44		0.63		0.63		0.63		0.64	

**Notes:**

p-values are calculated based on two-tailed tests. All regressions include year and industry fixed effects (based on Fama-French 17 classification) and standard errors are clustered at the company level. Variables are defined in the Appendix.

Numbers shown in italics are p-values; p-values shown in bold are statistically significant at the 10 percent level or better (two-tailed).

column [1] reports the results of (4) on the pooled sample.<sup>19</sup> The coefficients on  $\beta_1$  and  $\beta_1 + \beta_3$  are insignificant ( $p = 0.62$  and  $0.59$ ) suggesting no impact of hired affiliate auditors on the propensity to issue a going-concern opinion.<sup>20</sup>

Table 5, panel B, column [2] reports results using pre-SOX observations only and we again find the coefficient on *HIREDAFF* is statistically insignificant. Table 5, panel B, column [3] reports results using the post-SOX observations only. We find the coefficient on *HIREDAFF* is negative and statistically significant ( $p < 0.01$ ). However, given the small sample of going-concern opinions post-SOX and the lack of statistical significance on *POST*×*HIREDAFF* in column [1] we avoid drawing strong conclusions from this result. Our control variables are generally consistent with prior studies examining the propensity to issue a going-concern opinion, for example, Reichelt and Wang (2010).<sup>21</sup>

We next examine the effect of audit committee quality on the relationship between management affiliation and going-concern reporting using post-SOX-only observations. We include *AC\_MEET*, *AC\_SIZE*, and *AC\_ACC\_EXP* separately in (4) and interact the audit committee quality variable with *HIREDAFF*. In columns [4] and [6], the coefficients on *HIREDAFF*×*AC\_SIZE*, and *HIREDAFF*×*AC\_ACC\_EXP* are both positive and statistically significant ( $p < 0.05$ ) suggesting that audit committees that are larger or have accounting expertise increase the propensity of hired affiliate auditors to issue going-concern opinions. This result may be due to the increased ability of a larger audit committee to influence the external auditor as well as audit committees with greater accounting expertise having a deeper understanding of the need for a going-concern opinion. The combined coefficient on  $\beta_1 + \beta_3$  remains negative and statistically significant ( $p < 0.03$ ) suggesting that hired affiliates are negatively associated with the propensity to issue a going-concern opinion even in the presence of higher quality audit committees.

### ***Propensity to meet or just beat analyst earnings forecasts***

Our second proxy for audit quality is the auditor's ability to constrain earnings management, through reducing the likelihood of meeting or just beating analyst earnings forecasts (Davis, Soo, and Trompeter 2009). We obtain analyst earnings forecast data from I/B/E/S and model the probability of meeting or just beating these forecasts. We compare the actual earnings per share (EPS) with the median analyst forecast prior to the fiscal year-end. The difference is the earnings surprise which reflects new information available to investors. Our model is based on Davis et al. (2009) and Menon and Williams (2004),

19. Table 4 reports 2,302 observations in the going-concern sample. Table 5 reports regressions beginning with a sample size of 2,032 observations. The loss of observations is due to the inclusion of industry and year fixed effects in the regression analysis. Results are unchanged if we drop the fixed effects and report results on the sample of 2,302 observations.

20. The positive and statistically insignificant coefficient on *HIREDAFF* in Table 5, panel B, column [1] is different from prior literature examining going-concern reporting and auditor affiliations in the pre-SOX period (Lennox 2005; Ye, Carson, and Simnett 2011). However, our sample is constructed differently as we are focused on management influence over auditor selection, and therefore we restrict our sample to companies that switch auditors. In contrast, Lennox (2005) limits his sample to companies with a predicted probability of bankruptcy greater than 10 percent with no regard for auditor switches. We acknowledge that this is a limitation of our analysis. On the other hand, we examine multiple proxies of audit quality and find no consistency evidence to suggest management affiliation influences audit quality in the pre- or post-SOX period, whereas Lennox (2005) only examines modified audit opinions.

21. In untabulated results, we limit our going-concern model to companies that report negative cash flows from operations or a net loss ("distressed" companies) as prior studies have examined going-concern reporting using this sample specification (DeFond et al. 2002; Lim and Tan 2008; Reichelt and Wang 2010). We find qualitatively similar results to those reported in Table 5, that is, no association between *HIREDAFF* and a going-concern opinion in the pooled or pre-SOX samples, but a negative and statistically significant coefficient on *HIREDAFF* in the post-SOX sample.

TABLE 6  
Hired affiliate auditors and the propensity to meet or just beat analyst earnings forecasts

Logistic regression on the impact of hired affiliate auditors on the propensity to beat analyst earnings forecasts. The *Beat* variable equals one when actual earnings are greater than or equal to the median analyst earnings forecast, zero otherwise

$$Pr(\text{JUSTMEET} = 1) = F(\beta_0 + \beta_1 \text{HIREDAFF} + \beta_2 \text{POST} + \beta_3 \text{POST} \times \text{HIREDAFF} + \beta_4 \text{MVE} + \beta_5 \text{NOA} + \beta_6 \text{DOWNREV} + \beta_7 \text{FIRMAGE} + \beta_8 \text{SPEC} + \beta_9 \text{ANALYSTS} + \beta_{10} \text{STDEV} + \beta_{11} \text{LEV} + \beta_{12} \text{HORIZON} + \beta_{13} \text{POSUE} + \text{yearFE} + \text{IndustryFE} + e)$$

Variable	[1] Pooled sample		[2] Pre-SOX		[3] Post-SOX		[4] Post-SOX		[5] Post-SOX		[6] Post-SOX	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
<i>HIREDAFF</i>	-0.168	0.64	-0.205	0.58	0.640	0.15	-0.328	0.89	0.969	0.39	-0.418	0.73
<i>POST</i>	-0.490	0.21										
<i>POST</i> × <i>HIREDAFF</i>	0.463	0.41										
<i>AC_SIZE</i>							-0.040	0.82				
<i>AC_SIZE</i> × <i>HIREDAFF</i>							0.269	0.69				
<i>AC_MEET</i>									0.001	0.96		
<i>AC_MEET</i> × <i>HIREDAFF</i>									-0.04	0.71		
<i>AC_ACC_EXP</i>											0.394	0.24
<i>AC_ACC_EXP</i> × <i>HIREDAFF</i>											1.263	0.34
<i>MVE</i>	0.168	0.00	0.167	0.01	0.146	0.23	0.156	0.21	0.140	0.25	0.183	0.13
<i>NOA</i>	-0.019	0.09	-0.209	0.03	-0.003	0.57	-0.003	0.58	-0.003	0.57	-0.002	0.61
<i>DOWNREV</i>	-0.243	0.05	-0.184	0.19	-0.431	0.12	-0.424	0.12	-0.431	0.12	-0.415	0.14
<i>FIRMAGE</i>	-0.001	0.90	-0.004	0.52	-0.007	0.52	-0.007	0.53	-0.006	0.54	-0.007	0.49
<i>SPEC</i>	-0.079	0.61	-0.057	0.76	-0.084	0.82	-0.085	0.81	-0.094	0.79	-0.181	0.62
<i>ANALYSTS</i>	0.012	0.31	0.008	0.52	0.049	0.09	0.047	0.10	0.050	0.09	0.041	0.15
<i>STDEV</i>	-4.235	0.00	-5.609	0.00	-1.685	0.36	-1.697	0.36	-1.670	0.36	-1.607	0.36
<i>LEV</i>	-0.383	0.23	-0.071	0.85	-0.582	0.37	-0.572	0.37	-0.578	0.36	-0.560	0.37
<i>HORIZON</i>	-0.035	0.05	0.033	0.10	-0.059	0.14	0.057	0.15	0.059	0.13	0.070	0.08
<i>POSUE</i>	-0.076	0.58	-0.076	0.64	-0.183	0.46	-0.189	0.45	-0.183	0.46	-0.234	0.38
Intercept	-1.257	0.09	-2.454	0.00	-2.087	0.04	-1.981	0.06	-2.071	0.051	-2.545	0.01
Joint test $\beta_1 + \beta_3$		0.11						0.72		0.71		0.21

(The table is continued on the next page.)

TABLE 6 (continued)

Logistic regression on the impact of hired affiliate auditors on the propensity to beat analyst earnings forecasts. The *Beat* variable equals one when actual earnings are greater than or equal to the median analyst earnings forecast, zero otherwise

$$Pr(JUSTMEET = 1) = F(\beta_0 + \beta_1 HIREDAFF + \beta_2 POST + \beta_3 POST \times HIREDAFF + \beta_4 MVE + \beta_5 NOA + \beta_6 DOWNREV + \beta_7 FIRMAGE + \beta_8 SPEC + \beta_9 ANALYSTS + \beta_{10} STDEV + \beta_{11} LEV + B_{12} HORIZON + B_{13} POSUE + yearFE + IndustryFE + e)$$

Variable	[1] Pooled sample	[2] Pre-SOX	[3] Post-SOX	[4] Post-SOX	[5] Post-SOX	[6] Post-SOX
<i>N</i>	1,856	1,358	476	475	474	473
Pseudo <i>R</i> <sup>2</sup>	0.11	0.12	0.12	0.12	0.12	0.13

**Notes:**

*p*-values are based on two-tailed tests. All regressions include year and industry fixed effects (based on Fama-French 17 classification) with standard errors clustered at the company level. Variables are defined in the Appendix.

Numbers shown in italics are *p*-values; *p*-values shown in bold are statistically significant at the 10 percent level or better (two-tailed).

augmented with a dummy variable for an industry specialist auditor (Reichelt and Wang 2010). Our model is as follows (subscripts omitted):

$$\begin{aligned} Pr(JUSTMEET = 1) = & F(\beta_0 + \beta_1 HIREDAFF + \beta_2 POST + \beta_3 POST \times HIREDAFF \\ & + \beta_4 MVE + \beta_5 NOA + \beta_6 DOWNREV + \beta_7 FIRMAGE \\ & + \beta_8 SPEC + \beta_9 ANALYSTS + \beta_{10} STDEV + B_{11} LEV \\ & + B_{12} HORIZON + B_{13} POSUE + yearFE + IndustryFE + e). \end{aligned} \quad (5)$$

The *JUSTMEET* variable is equal to one if the earnings surprise (actual earnings – forecast earnings) is between two cents per share and zero; and zero otherwise. *HIREDAFF* is equal to one for each company-year observation where a hired affiliate auditor is present. *POST* is equal to one for all company-year observations where the Big 4 audit firms were appointed after January 14, 2004. For brevity, the control variables are defined in the Appendix. We also include year and industry fixed effects and cluster standard errors at the company level. Under Hypothesis 2(b), we expect  $\beta_1 + \beta_3$  to be positive and significant; that is, hired affiliates are *less likely* to constrain earnings management during the post-SOX period.

Table 6 reports the results of (5). Column [1] reports the results of the pooled sample. We find the coefficient on  $\beta_1 + \beta_3$  is positive but statistically insignificant ( $p = 0.11$ ). Results for the control variables are generally consistent with prior literature (Davis et al. 2009; Menon and Williams 2004). Table 6, column [2] reports the results of (5) for the pre-SOX period alone. The *HIREDAFF* coefficient is negative and statistically insignificant. Table 6, column [3] reports the results of (5) for the post-SOX period alone. Again, the coefficient on *HIREDAFF* is positive but insignificant ( $p = 0.15$ ). The results on the propensity to meet or just beat analyst forecasts provide no evidence that hired affiliate auditors are less likely to constrain earnings management.

Lastly, we examine the effect of audit committee quality on the relationship between management affiliation and the propensity to meet or just beat analyst earnings forecasts. Table 6, columns [4]–[6] report the results using *AC\_SIZE*, *AC\_MEET*, and *AC\_ACC\_EXP* as proxies for audit committee quality. For each proxy the coefficient on  $HIREDAFF \times AC\_SIZE$  (*AC\_MEET* or *AC\_ACC\_EXP*) is statistically insignificant. Overall, we find no significant evidence that hiring an affiliated auditor increases the propensity to meet or just beat analyst forecasts and no evidence of an audit committee quality impact on this relationship.

#### 4. Supplementary analyses

*Audit Committee Affiliations:* We examine whether our results on management influence over auditor selection (Table 3) are robust to other factors that can influence a company's choice of auditor. We consider the impact of audit committee affiliations (i.e., prior employment experience of audit committee members with the Big 4 audit firms). If affiliation influences auditor selection, and if audit committees are active in auditor selection, then an audit committee affiliation may also predict auditor choice. We define *ACXX* in a similar fashion to *MGMTXX*, that is, *ACXX* is equal to one if the company has an audit committee member who previously worked for auditor *XX*. There are 100 audit committee affiliates in the sample of 421 post-SOX Big 4 appointments. We include *ACXX* in (1) for the post-SOX period and find that the coefficient on *MGMTXX* remains positive and significant for three of the four firms, consistent with the results reported in Table 3. The coefficient on *ACXX* is insignificant, suggesting that audit committee affiliation does not significantly influence the company's choice of Big 4 audit firm. This is consistent with our evidence that it is primarily management rather than the audit committee that influences the auditor selection decision.

*Abnormal Accruals:* As prior literature frequently uses abnormal accruals to measure earnings management, we follow Menon and Williams (2004) by estimating the impact of *HIREDAFF* on the level of abnormal accruals. In untabulated results, we find insignificant coefficients on *HIREDAFF* in both the pre- and post-SOX periods. This lack of a relationship between hired affiliates and abnormal accruals is consistent with Geiger et al. (2005), Geiger and North (2006) and Geiger et al. (2008). It is also consistent with our evidence in Table 6 that affiliated hires are not significantly associated with the propensity to meet or just beat analyst earnings forecasts.

**5. Conclusion**

While regulators, and many academic studies, largely assume that audit committees carry out responsibilities for auditor selection during the post-SOX period, the evidence in this study suggests managers continue to have significant influence over auditor selection, at least in the subset of companies who select Big 4 audit firms. These results call into question the effectiveness of Section 301 of SOX with respect to the requirement for audit committees to select the external auditor, and the ability of audit committees to act independently of management. This finding is relevant to regulatory bodies given the extensive regulatory efforts that have been taken to transfer the auditor selection rights from corporate managers to audit committees. However, the lack of consistent evidence for a negative impact on audit quality suggests that the audit committee’s responsibility for auditor selection may be unwarranted.

Our study has some important limitations. The inferences are limited to companies appointing Big 4 audit firms as we exclude switches to non-Big 4 auditors. Therefore, our results need to be considered in the context of the broader auditor switching environment post-SOX, which suggests a large number of companies switching away from Big 4 audit firms (Landsman, Nelson, and Rountree 2009). Also, although we document an association between management affiliation and auditor selection, we are unable to directly observe management influence. Another limitation is that we identify affiliations using information disclosed in proxy statements. Biographical information beyond the five-year disclosure requirement is voluntary and companies may have incentives to withhold additional biographical employee information. Strategic withholding of biographical information about employee affiliations with auditors may bias against finding evidence of audit quality impairment. Lastly, the sample of hired affiliate auditors is rather small which may explain why the audit quality results are generally insignificant.

**Appendix**

Variable	Definition
<i>APPTXX</i>	An indicator variable equal to one if the selected audit firm is equal to “XX” where “XX” is defined as EY (Ernst & Young), KPMG, DT (Deloitte), PWC (PricewaterhouseCoopers), zero otherwise
<i>ACCRUALS</i>	Difference between net income and cash flows
<i>AC_SIZE</i>	The number of audit committee members
<i>AC_MEET</i>	The number of audit committee meetings held in the year of an auditor switch
<i>AC_ACC_EXP</i>	An indicator variable equal to one if the audit committee has at least one member who qualifies as an accounting expert as defined in Dhaliwal et al. (2010). Accounting expertise is identified as work experience as certified

(The table is continued on the next page.)



## Appendix (continued)

Variable	Definition
	public accountants, chief financial officers, vice presidents of financial controllers, or any other major accounting position
<i>ANALYSTS</i>	The number of analysts providing forecasts for a company
<i>DISMISSAL</i>	Indicator variable equal to one if the company dismissed the auditor, zero if the auditor resigned
<i>DOWNREV</i>	An indicator variable equal to one if the final analyst forecast was lower than the preceding analyst forecast; zero otherwise
<i>FBIG5</i>	An indicator variable equal to one if the predecessor auditor is a Big 4/5 firm, zero otherwise
<i>FIRMAGE</i>	The number of years a company has been listed on COMPUSTAT
<i>GC</i>	An indicator variable equal to one if the auditor issued a going-concern opinion in the given year, zero otherwise
<i>HIREDAFF</i>	An indicator variable equal to one if a company selects an auditor affiliated with a current manager
<i>HORIZON</i>	Forecast horizon, equal to the number of months between earnings announcement and the month of the earnings forecast
<i>JUSTMEET</i>	An indicator variable equal to one if the actual earnings are equal to or greater than median analyst forecasted earnings as obtained from I/B/E/S by two cents or less
<i>LAG_GC</i>	An indicator variable equal to one if the company received a going-concern opinion in year $t-1$
<i>LOSS</i>	An indicator variable for a company with a loss in the current quarter, zero otherwise
<i>LEV</i>	Leverage is defined as total debt divided by total assets
<i>LIT</i>	An indicator variable equal to one if the company operates in a high litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370); zero otherwise
<i>LNAT</i>	Natural log of total assets
<i>LOSS</i>	An indicator variable equal to one if net income is less than zero in a given year
<i>MATCHXX</i>	An indicator variable equal to one if characteristics of the company match the clientele of the incoming auditor more than they match the clienteles of any of the other Big 4 auditors; zero otherwise. To determine how closely a company matches the clientele of each Big 4 auditor, we estimate auditor choice models for the entire COMPUSTAT population of Big 4 clients during our sample period (1995–2009). The dependent variables in the four auditor choice models indicate the identities of the Big 4 auditing firms and the independent variables capture the company's size, financial health, and two-digit SIC industry code. We use the model coefficients and the independent variables to predict the Big 4 probabilities for each company in the auditor change sample. If the company appoints the Big 4 audit firm which has the highest probability of being appointed, <i>MATCHXX</i> is coded as one, zero otherwise
<i>MGMTXX</i>	An indicator variable set to one if at least one member of management has an affiliation with the incoming auditor; zero otherwise. For example, <i>MGMTEY</i> equals one if a manager is affiliated with Ernst and Young, zero otherwise, <i>MGMTKPMG</i> , <i>MGMTPWC</i> , <i>MGMTDT</i> , are all constructed in the same manner
<i>MTB</i>	Market to book ratio
<i>MVE</i>	Market value of equity

(The table is continued on the next page.)

## Appendix (continued)

Variable	Definition
<i>NOA</i>	Net operating assets, defined similar to Menon and Williams (2004). Net operating assets = $(SEQ - CHE + DLC + DLTT)/SALE$ , derived from COMPUSTAT
<i>POST</i>	An indicator variable equal to one for all observations post-SOX (January 15, 2004)
<i>POSUE</i>	Indicator equal to one if earnings per share in current year is greater than last year
<i>RECENT</i>	Indicator variable equal to one if the management affiliate was employed by its former audit firm within the last five years
<i>ROA</i>	Return on assets, defined as net income divided by total assets
<i>SPEC</i>	An indicator variable set to one if the incoming auditor is an industry specialist as defined by Reichelt and Wang (2010); that is, the auditor has the largest market share in the industry and its' market share is more than 10% higher than the second largest auditor's market share; zero otherwise
<i>STDEV</i>	Standard deviation of earnings forecasts
<i>STDEARN</i>	Standard deviation of income before extraordinary items
<i>ZSCORE</i>	Bankruptcy risk score as defined by Zmijewski (1984). $(-4.3 - (4.5 \times \text{return on assets}) + (5.7 \times \text{leverage ratio}) - (0.004 \times \text{current ratio}))$
<i>#MEET_BOARD</i>	The number of meetings held by board of directors in the year of the auditor switch
<i>%IND_AUDCOM</i>	The percent of audit committee members that are independent directors
<i>%IND_BOARD</i>	The percent of board members that are independent directors

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