

The Geography of Auditor Independence and SEC Enforcement*

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Abstract

This paper examines how auditor incentives are affected by the proximity of the client's headquarters, and the auditor's engagement office, to the nearest SEC Regional Office. While the distances from the client's headquarters and the auditor's engagement office to the nearest SEC Regional Office are correlated, they are distinctly different in most cases. We find that Big 4 auditors (but not non-Big 4 auditors) are more likely to issue going concern audit opinions when the client's headquarters is located farther away from SEC Regional Offices, after controlling for the effects of auditor distance. This finding is consistent with Big 4 auditors anticipating more misreporting behavior by clients farther away from SEC Offices and in turn protecting themselves by issuing more conservative audit reports. We also find that non-Big 4 auditors (but not Big 4 auditors) are less likely to issue going concern audit opinions when the auditor's engagement office is located farther away from SEC Regional Offices, after controlling for the effects of client distance. This result is consistent with more remote offices of non-Big 4 auditors perceiving a lower risk (smaller cost) of SEC enforcement actions, and thus being more willing to compromise their independence and report favorably for clients. Our study contributes to the literature on audit quality by providing evidence that the geography of SEC enforcement is an important factor in explaining cross-sectional differences in the behavior of Big 4 and non-Big 4 auditors across their engagement offices.

JEL classification: G18; K22; M42; M48

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*“The mountains are high and the emperor is far away.”
-Ancient Chinese proverb*

1. Introduction

The Securities and Exchange Commission (SEC) is the primary federal agency charged with assuring high quality financial reporting in the US capital markets by listed companies. This mandate includes oversight of SEC registrants and their auditors, with broad powers to sanction misconduct, including, in extreme cases, delisting registrants and banning auditors from audits of SEC registrants. An intrinsically important question therefore is whether and how audit quality is affected by the SEC. While a large body of research spanning several decades investigates a multitude of factors that potentially explain cross-sectional differences in audit quality, little attention has been paid to the role of SEC enforcement. Our paper attempts to fill this void by drawing on recent literature that examines the influence of geography on economic behavior to test whether geographic proximity of the SEC’s Regional Offices to clients’ headquarters and auditors’ engagement offices affects audit quality.

Recent research suggests that geographic proximity influences a broad set of economic behavior and generally concludes that closer geographic proximity is associated with lower information asymmetry and lower monitoring costs.¹ A study in this line of research that has important implications for our investigation is Kedia and Rajgopal (2007), which finds that SEC registrants with headquarters located farther from

¹ For example, Audretsch and Feldman (1996) and Audretsch and Stephan (1996) find that information transfers across firms are more likely with close geographic proximity; Ivkovic and Weisbenner (2005) and Coval and Moskowitz (1999) report that investors are biased towards geographically proximate firms; Coval and Moskowitz (2001) find that mutual fund managers earn higher returns on their investments in local firms; Malloy (2005) reports that analysts make more accurate forecasts for firms in closer proximity; and Kedia et al. (2005) find that acquirer returns are higher for acquisitions of closer geographic proximity.

the nearest SEC Regional Office are more likely to restate prior years' financial statements, indicating that these registrants are more likely to misreport. Their findings are consistent with managers located farther away from SEC Regional Offices having a lower assessment of the likelihood of being caught and punished for financial misreporting, which in turn leads to more aggressive accounting and hence to a higher incidence of subsequent restatements.²

Drawing on the implications of this prior literature we expect the proximity of the client's headquarters to the nearest SEC Regional Office to influence audit quality. As in prior research we use auditor independence as a measure of audit quality, where auditors are considered to be more independent when they have a higher conditional likelihood of issuing a going concern audit opinion (Reynolds and Francis, 2000; DeFond, Raghunandan and Subramanyam, 2002). If clients that are farther from SEC Regional Offices are more likely to misreport (as found in Kedia and Rajgopal, 2007), and auditors anticipate this behavior, then auditors have greater incentives to issue going concern audit reports to these clients. These incentives arise because clients that misreport are more likely to experience financial difficulties and most litigation against auditors involves financially distressed and/or bankrupt clients (Palmrose 1999). The issuance of a going concern opinion, however, reduces both the likelihood of auditor litigation as well as the size of the settlement in the event of litigation from distressed clients that declare bankruptcy (Carcello and Palmrose, 1994). Thus, *ceteris paribus*, our

² The findings in Kedia and Rajgopal (2007) are consistent with Becker (1968), which argues that the decision to engage in illegitimate activity is a function of the expected costs and benefits of the activity, and with Sah (1991), which argues that the perceived costs of committing a crime vary with the subjective information available to the agent.

first prediction is that auditors of clients located farther from SEC Regional Offices are more likely to issue going concern audit reports. In addition, because prior research finds that Big 4 auditors have relatively stronger incentives to provide high quality audits, we expect that Big 4 auditors (as compared to non-Big 4 auditors) are relatively more likely to issue going concern opinions when their clients are farther from SEC Regional Offices.

We also expect the proximity of the auditor's engagement office to the closest SEC Regional Office to influence audit quality. While the distances from the client's headquarters and the auditor's engagement office to the nearest SEC Regional Office are correlated, they are distinctly different in most cases. The proximity of the auditor's engagement office to SEC Regional Offices will affect information transfers that influence the auditor's belief set regarding the probability that the SEC will detect and punish breaches of auditor independence. If auditors located farther from SEC Regional Offices believe there is less likelihood they will be caught and punished in the event of a breach, it decreases the expected costs of compromising their independence, and hence reduces their incentives to issue a going concern opinion. Or, to paraphrase an ancient Chinese proverb, the mountains are high and the SEC Regional Office is far way. Thus, *ceteris paribus*, our second prediction is that auditors located relatively farther away from SEC Regional Offices (after controlling for client distance) are more likely to compromise their independence, and hence less likely to issue going concern audit reports. In addition, because non-Big 4 auditors have relatively weaker incentives to provide high quality audits, we expect that non-Big 4 auditors (as compared to Big 4 auditors) are relatively less likely to issue going concern audit reports when the engagement office is farther from SEC Regional Offices.

Consistent with our predictions, our multivariate test results find that the likelihood of auditors issuing going concern audit opinions: (1) *increases* as the distance between the client's headquarters and the nearest SEC Regional Office increases (after controlling for auditor distance from the nearest SEC Regional Office), but only among Big 4 auditors; and (2) *decreases* as the distance between the auditor's engagement office and the nearest SEC Regional Office increases (after controlling for client distance from the nearest SEC Regional Office), but only among non-Big 4 auditors. Thus, our evidence is consistent with both client and auditor geographic proximity to SEC Regional Offices influencing audit quality.

Our study contributes to the literature in several ways. First, our findings are consistent with SEC Regional Offices having a significant impact on auditor independence. This is an important contribution because prior literature has devoted little attention to understanding the SEC's impact on audit quality, despite the fact that the SEC has oversight of financial reporting quality in the US capital markets. Second, we find evidence that the geographic location of both the client's headquarters and the auditor's engagement office, relative to SEC Regional Offices, influences auditor behavior which is consistent with geography being a factor that helps explain cross-sectional variations in audit quality. These findings contribute to the relatively new but rapidly growing literature on the economics of geography.

Finally, a major contribution of our study is that we provide insights into the factors that help explain audit quality differences among non-Big 4 auditors. The influence of the SEC on the behavior of non-Big 4 auditors is particularly interesting in the context of our study for several reasons. First, non-Big 4 auditors are significantly

more likely to be censured in Auditing and Accounting Enforcement Releases issued by the SEC when compared to Big 4 auditors, and once censured they are significantly more likely to be penalized by the SEC (Feroz et al., 1991). Therefore the SEC's effectiveness in assuring high quality auditing among non-Big 4 audit firms is an inherently important topic. Second, large numbers of public companies are switching to non-Big 4 auditors in the wake of the Sarbanes-Oxley Act, resulting in a dramatic increase in the market share of non-Big 4 auditors (Plitch and Wei 2004). This phenomenon is reflected in our sample, where the proportion of clients audited by non-Big 4 auditors more than doubles over the period of our analysis, growing from 22% in 2000 to 46% in 2006. Third, because of the composition of their clientele, non-Big 4 auditors issue a disproportionately larger share of going concern reports compared to Big 4 auditors. For example, while non-Big 4 auditors comprise 31% of our sample observations, they issue 54% of the going concern opinions. Thus, our study increases our knowledge of an important and growing segment of the audit market that is not well studied, and consequently not as well understood, as the large Big 4 accounting firms.

The remainder of the paper proceeds as follows. Discussion of the SEC and auditor reporting incentives are developed more fully in the next section. Section 3 presents the research design including sample selection and measurement of variables. The primary results are reported in section 4, and section 5 explores whether the effects of metropolitan area characteristics explain our results. Section 6 reviews recent AAERs and determines that sanctioned auditors are relatively closer to SEC Regional Offices, which is consistent with the hypothesized incentives with respect to auditor distance. Section 7 summarizes and concludes the study.

2. Background

2.1 *The influence of client distance on the auditor's incentives*

Our first prediction is that, *ceteris paribus*, auditors of clients with headquarters located relatively farther from SEC Regional Offices are more likely to issue going concern audit reports. This expectation arises because clients located farther from SEC Regional Offices are more likely to misreport (Kedia and Rajgopal, 2007), and consequently their auditors have incentives to take actions that mitigate the potential costs associated with auditing such clients. Auditing clients with a greater propensity to misreport is potentially costly because they are more likely to be financially distressed (Kinney and McDaniel, 1989; DeFond and Jiambalvo, 1991), and financially distressed clients are positively associated with costly litigation against the auditor. For example, Palmrose (1999) reports that 61% of shareholder litigation against auditors involves financially distressed and/or bankrupt clients. This means that the risk of costly shareholder lawsuits against auditors increases in the presence of clients that misreport. However, an action by the auditor that potentially mitigates this risk is the issuance of a going concern audit opinion. Prior research finds that the issuance of a going concern opinion reduces both the likelihood of shareholder lawsuits against auditors as well as the size of the settlements against the auditors among clients that go bankrupt (Carcello and Palmrose, 1994). This suggests that auditors of clients that are farther away from SEC Regional Offices will find it in their best interests to adopt a lower threshold for issuing a going concern audit opinion. We also expect that the likelihood of issuing a going concern audit report to clients that are farther from SEC Regional Offices is greater among Big 4 auditors than among non-Big 4 auditors, because prior research suggests

that Big 4 auditors have greater incentives to provide higher quality audits (DeAngelo, 1981).³

Another reason why the client's distance from a SEC Regional Office potentially influences the issuance of a going concern report is that it is likely to impact managements' incentives to put pressure on the auditor to avoid the receipt of a going concern opinion. The direction of this affect, however, is difficult to predict. On one hand, because clients located farther from SEC Regional Offices are under less scrutiny by the SEC, management may be *less concerned* that a going concern opinion will attract the SEC's attention, and hence put less pressure on the auditor to avoid a going concern opinion. On the other hand, because these clients are more likely to misreport, management may be *more concerned* about attracting the SEC's attention, and hence put more pressure on the auditor to avoid a going concern opinion. Therefore, it is an empirical question whether managers of clients located farther from SEC Regional Offices are likely to put more or less pressure on their auditors to avoid the receipt of a going concern opinion. It is important to note, however, holding constant their concern about SEC scrutiny, managers of all public companies have strong incentives to avoid the receipt of a going concern opinion because of its potentially adverse affects on share value. Thus, even in the absence of greater SEC scrutiny, it is reasonable to expect that managers prefer to avoid the receipt of a going concern opinion.

It is also important to observe that while clients located farther from SEC Regional Offices are more likely to misreport because misreporting is less likely to lead

³ Research establishing lower quality auditing among smaller auditors includes Palmrose (1988); DeFond (1992); Becker, DeFond, Jiambalvo and Subramanyam (1998); Francis et al. (1999); and Francis (2004).

to a SEC investigation (Kedia and Rajgopal, 2007), auditors still have incentives to protect themselves by issuing going concern opinions to these clients. The reason is that misreporting can come to light through a variety of mechanisms and Kinney, Palmrose and Scholz (2004) report that only 24% of restatements were initiated by SEC investigations over the period 1996-1999. This is important because it helps to understand both the client's incentives to misreport (most investigations are not initiated by the SEC), and the auditor's incentives to be proactive given that such reporting often comes to light (even without a SEC investigation). We recognize that it is possible that more restatements are now the result of SEC investigations, following the Sarbanes-Oxley Act of 2002, though we have no data on this.

2.2 The influence of auditor distance on auditor incentives

Our second prediction is that, *ceteris paribus*, auditors located relatively farther from SEC Regional Offices are likely to be less independent of their clients and consequently less likely to issue going concern audit reports. This is because we expect the proximity of an auditor's engagement office to a SEC Regional Office to impact information transfers that influence the auditor's belief set regarding the probability that the SEC will detect and punish breaches of auditor independence. If auditors located farther from SEC Regional Offices believe there is less likelihood they will "get caught" in the event of a breach, it decreases the expected costs of compromising their independence: or, to paraphrase an ancient Chinese proverb, the mountains are high and the SEC Regional Office is far way. Thus, *ceteris paribus*, we predict that auditors located relatively farther away from SEC Regional Offices are likely to be less independent of their clients and because of this are less likely to issue negative (going

concern) audit reports.⁴ As with our first prediction, we also expect differences in behavior across Big 4 and non-Big 4 auditors. Specifically, we expect that non-Big 4 auditors are relatively more likely than Big 4 auditors to fail to appropriately issue a modified audit opinion when located relatively farther from SEC Regional Offices, because non-Big 4 auditors have weaker incentives to maintain high audit quality.

We expect auditors to have incentives to avoid being investigated by the SEC because the attendant consequences are likely to be costly. The SEC summarizes the results of its formal investigations of accounting and auditing misconduct in public documents known as Accounting and Auditing Enforcement Releases (AAERs), and it is common for the SEC to implicate the outside auditor in AAERs. For example, Feroz et al. (1991) report that the outside auditor is censured in 45% of the 224 AAERs issued from 1982 to 1989; and Dechow et al. (1995) document that auditors are the subject of enforcement actions in 35% of the 436 AAERS issued from 1982 to 1992. The SEC often invokes significant penalties on errant auditors, including revocation of the auditor's ability to practice before the SEC.⁵ Being censured by the SEC may also have indirect consequences. For example, Wilson and Grimlund (1990) find that auditors suffer a loss in market share following the issuance of AAERs due to adverse reputation effects, and this impact is strongest in the state where the offending office is located (which is consistent with geography playing a role in client perceptions of audit quality). Further, all information collected during a SEC investigation is admissible in civil and

⁴ The engagement office of the accounting firm that administers the audit and issues the audit report (on office-level letterhead) is obtained from 10-K filings and is available from the Audit Analytics database.

⁵ Specifically, Rule 102(e) (1) (iii) of the SEC's Rules of Practice provides (among other things), that the SEC may censure a person or deny, temporarily or permanently, the privilege of appearing or practicing before it in any way to any person who is found ... [t]o have willfully violated, or willfully aided and abetted the violation of any provision of the Federal securities laws or the rules and regulations there under.

criminal courts, and the SEC routinely refers investigation targets to the Department of Justice for criminal prosecution. In addition, shareholders are more likely to sue the auditor after bankruptcy filings that are accompanied by an AAER (Carcello and Palmrose, 1994), and payouts in shareholder litigation are significantly higher in the presence of an AAER (Cox and Thomas, 2003).

Auditors located closer to SEC Regional offices are likely to gain a greater awareness of the SEC's investigative activities, as well as the punitive consequences of those activities, through a variety of channels. For example, because auditors have incentives to attract new clients, they are typically involved in a variety of professional and civic organizations in their local communities. Such activities are likely to bring these auditors into contact with a cross-section of other business professionals, including lawyers, corporate executives and other auditors of publicly-held clients. Auditors are also likely to have frequent interactions with other auditors in the process of meeting continuing professional education requirements, particularly non-Big 4 auditors who are less likely to have regular in-house training. When auditors are located in communities that are in close proximity to a SEC Regional Office, the other professionals they come into contact with are more likely to have first-hand experience with the SEC's enforcement activities, or know someone with such experience. In addition, auditors in closer proximity to SEC Regional Offices are more likely to directly encounter and interact with SEC staff members through the various professional development programs and activities described above.

The eleven SEC Regional Offices are located in cities across the United States and play a major role in the detection and prosecution of financial misreporting.⁶ While the SEC does not formally publish the sources that trigger its investigations, the SEC website lists Regional Offices as a major source of information for enforcement actions, and a current SEC Regional Director with 17 years experience in multiple SEC Regional Offices, told us in a private interview that the majority of SEC investigations of suspected accounting misconduct originate with the SEC Regional Offices.⁷

All of the SEC Regional Offices have accounting staff that are actively engaged in identifying potential accounting misconduct through a variety of channels, many of which are likely to be biased towards identifying companies that are geographically closer. For example, one source of investigative leads for Regional Office staffers is stories in the regional press, which by its nature tends to focus on local events.⁸ This means that unless SEC staffers carefully monitor the newspapers of all cities in their regions (which typically span several states) this source is likely to bias investigations towards geographically proximate companies. Potential misconduct also comes to the attention of the Regional Office staff through their casual review of SEC filings that happen across their desk or that serendipitously pique their interest. If SEC staffers have a greater awareness and knowledge of local companies, consistent with the proclivities of local investors (Ivkovic and Weisbenner 2005; Coval and Moskowitz, 1999), this channel

⁶ A more detailed discussion of the role of the SEC Regional Offices and their organizational structure is presented in the Appendix.

⁷ The investigations of suspected accounting misconduct that do not originate with the SEC Regional Offices are typically referred to them by the Office of Corporation Finance (Corp Fin) at SEC Headquarters in Washington DC, primarily as a result of the Corp Fin's systematic review of corporate SEC filings.

⁸ Former Chief Accountant of the SEC Enforcement Division, Robert Sack opines that approximately 30% of SEC investigation leads are initiated by scanning the financial press (Feroz et al., 1991).

is also likely to bias towards initiating investigations of registrants that are geographically closer.⁹ The SEC Regional Offices also necessarily operate with limited financial resources, which is also likely to bias their investigations towards more convenient and geographically proximate targets and we report evidence in section six which is consistent with these conjectures.

3. Empirical analysis

3.1 Proxy for auditor independence

Following prior literature, our proxy for the theoretical construct of auditor independence is the conditional probability of issuing a going concern audit report, where auditors are considered to be relatively less independent when they are less likely to issue a going concern opinion for a given set of financial and market characteristics of the client (DeFond, Raghunandan and Subramanyam, 2002; Reynolds and Francis, 2000). Auditors have strong incentives to issue going concerns opinions to their clients when circumstances warrant. In particular, auditors are more likely to be sued when their clients are in poor financial health, but the issuance of a modified audit report in the year prior to bankruptcy substantially reduces the likelihood of shareholder lawsuits and also reduces the dollar amount in event there if there is a settlement against an auditor (Carcello and Palmrose, 1994).¹⁰ In order to issue a going concern opinion, however, the auditor must be able to impartially evaluate the client's financial condition in an unbiased

⁹ Other channels through which SEC Regional Offices identify investigation targets include whistle blowers, anonymous informants, investors who identify questionable reporting during the course of their independent analysis of companies' financial reports, and companies that voluntarily self-report the discovery of financial misconduct.

¹⁰ It is also notable that Cox and Thomas (2003) find that the most significant determinant in predicting the likelihood of a SEC action is poor financial health.

manner and withstand client pressure to issue a clean opinion.¹¹ Thus, *ceteris paribus*, an auditor's level of independence is expected to be positively correlated with the propensity to issue a going concern opinion. When compared to alternative proxies of auditor independence that draw inferences from clients' financial reporting characteristics, such as discretionary accruals or earnings restatements, going concern opinions have the advantage of being a direct result of the auditor's behavior and are measured with less noise. For example, the auditor's influence on discretionary accruals is likely to be relatively indirect, and there are a myriad of empirical challenges in measuring discretionary accruals (Guay et al., 1996; Dechow et al., 1995; Hribar and Collins, 2002).¹² Similarly, there are numerous reasons for earnings restatements unrelated to auditor behavior.¹³ In contrast, the auditor is directly and exclusively responsible for the audit opinion, and measuring the audit opinion outcome is unambiguous.

While the auditor has incentives to be independent and to issue unfavorable going concern opinions in appropriate circumstances, there are also consequences to the auditor for doing so. Clients who receive such audit reports are likely to engage in opinion shopping behavior (Lennox 2000), and Krishnan (1994) reports that approximately 25% of clients switch auditors after receiving a going concern report, compared to a base rate of around 5% for clients receiving clean opinions. So in a practical sense the auditor is always weighing the costs and benefits of issuing a clean versus going concern audit

¹¹ As noted in Kinney (1999), the securities acts do not define auditor independence and there is no generally accepted definition in the literature. Our definition, which emphasizes auditor objectivity, impartiality and the ability to withstand client pressure, is consistent with those generally used in the literature.

¹² We acknowledge that this limitation applies to many papers in the literature, including Becker et al. (1998) and Francis et al. (1999).

¹³ This is consistent with the observation that auditors are not implicated in the majority of AAERs that are issued with respect to earnings restatements.

report. Our argument is that at the margin, auditors in offices that are farther away from SEC Regional Offices have a lower estimated cost of the enforcement consequences of compromising their independence. Thus, such auditors are more likely to succumb to management pressure to engage in non-independent behavior such as issuing a clean audit opinion when a going concern report is warranted.¹⁴

3.1 Sample selection

We test our predictions using a sample of 8,466 client-year observations of financially distressed companies, including 637 first-time going-concern opinions, collected from the Audit Analytics database over the period 2000 through 2006. We restrict our analysis to financially distressed firms and include only first-time going-concern opinions because the going concern opinion decision is most salient among this set of firms (Hopwood et al., 1994; Mutchler et al., 1997; DeFond et al., 2002). Along with our test variables of interest and the control variables traditionally used to model the auditor's going concern decision, our model also includes variables capturing the size of the auditor's engagement office (i.e., number of clients and total client assets audited by the auditor's office) because several studies document that audit quality is influenced by the auditor's office size (e.g., Reynolds and Francis, 2000; Francis and Yu, 2009).

¹⁴Therefore, as in prior literature (e.g., DeFond et al., 2002; Reynolds and Francis, 2000) we are assuming that the propensity to issue a going concern opinion is correlated with the auditor's propensity to maintain his or her independence from the client, rather than suggesting that the auditor's failure to issue a going concern opinion is likely to draw the attention of the SEC, per se. However, it is notable that there is a relatively long history of public criticism of auditors for failing to appropriately issue timely going concern reports. For example, the Government Accounting Office issued a 1989 report criticizing the auditing profession for issuing clean opinions to Savings and Loan Associations in the year prior to their failure (Blacconiere and DeFond, 1997). More recently, the auditing profession has been criticized for issuing clean opinions just prior to failure of 12 of the largest bankruptcies in history, all of which occurred during 2001 (Venuti, 2004).

Table 1 summarizes the sample selection process using data from the Audit Analytics database for the years 2000 through 2006. We start with the year 2000 because the Audit Analytics database has relatively limited data prior to that time. As shown in Table 1, we begin with 69,422 client-year observations after excluding investment management companies and clients and auditors located outside of the continental United States. We drop 44,865 client-year observations because of missing financial information in the Compustat or SDC database, which is primarily due to 18,604 private company observations included in Audit Analytics and the fact that Compustat is biased toward larger firms and has smaller coverage than the Audit Analytics database. We then exclude 803 client-year observations related to companies in the financial services industry or that have changed fiscal year-end during our sample period. We also drop 2,419 client-year observations with incomplete or inaccurate client headquarters' street addresses and 3,245 client-year observations for which we are unable to locate the street address of the auditor's office, including 1,203 Arthur Andersen clients (prior to Andersen's collapse in 2002) due to difficulties in obtaining street addresses of former Arthur Andersen offices.

[Insert Table 1 Here]

Following prior literature, we restrict the analysis to financially distressed firms and delete firms that receive going concern opinions in the prior year, where financial distress is defined as reporting either negative earnings or negative operating cash flows during the current fiscal year (Hopwood et al., 1994; Mutchler et al., 1997; DeFond et al., 2002). These restrictions are made because the going concern opinion decision is most

salient among distressed firms that receive a first-time going concern opinion. These restrictions result in dropping 9,211 and 413 observations, respectively.

After applying all of the above described filters, we have a final sample of 8,466 client-year observations (3,172 unique clients) with 637 first-time going concern audit reports, which are audited by 332 unique audit firms. For these 332 audit firms, there are 679 unique offices in the sample that administer the audit engagements: 245 unique Big 4 offices and 434 unique offices of non-Big 4 firms.

3.2 Measuring auditor and client distance

Table 2 lists the 11 SEC Regional Offices along with the names of the regions and the states included in each region. Our primary variable of interest is the distance of the engagement office of the auditor that issues the audit opinion from the nearest SEC Regional Office in the auditor's region, which we term our "auditor distance" measure. Audit Analytics reports the name of the audit firm that issues each audit opinion, as well as the city of the auditor's engagement office that issues the opinion. With this information we use the internet to identify the street addresses of the auditor offices, and use the SEC website to identify the street addresses of the 11 SEC Regional Offices. We then match each auditor office with the nearest SEC Regional Office within the auditor's region. For example, KPMG's office in Princeton, New Jersey falls under the jurisdiction of the SEC's Northeast region, which has offices in New York, Boston, and Philadelphia. Thus, we find the driving distance (in kilometers) from KPMG's Princeton office to each of the three SEC Regional Offices in the Northeast region (using Google Maps and MapQuest), and choose the SEC regional office with the shortest driving

distance as the auditor distance measure, which turns out to be Philadelphia at 69.2 kilometers. We use the same approach to measure the distance from the client's headquarters to the closest SEC Regional Office.

[Insert Table Here]

3.3 Going concern model

Our first prediction is that client distance from the nearest SEC Regional Office increases the likelihood of a going concern report, and this effect is likely to be strongest among Big 4 audit firms. Our second prediction is that auditor distance from the nearest SEC Regional Office decreases the likelihood of a going concern report, and this effect is likely to be strongest among non-Big 4 audit firms. We test our predictions by estimating the coefficients in the following logistic regression, which models the auditor's probability of issuing a first-time going concern opinion:

$$\begin{aligned} \text{Pr}(\text{Going Concern}) = & \alpha + \beta_1 \text{Client Distance} \times \text{Big 4 Dummy} + \beta_2 \text{Client Distance} \times \text{Non - Big 4 Dummy} \\ & + \beta_3 \text{Auditor Distance} \times \text{Big 4 Dummy} + \beta_4 \text{Auditor Distance} \times \text{Non - Big 4 Dummy} \\ & + \beta_5 \text{Number of Clients} + \beta_6 \text{Auditor Assets} + \beta_7 \text{Non - Big 4 Dummy} \\ & + \beta_8 \text{Client Assets} + \beta_9 \text{Leverage} + \beta_{10} \text{Change in Leverage} + \beta_{11} \text{Loss Dummy} \\ & + \beta_{12} \text{Firm Age} + \beta_{13} \text{New Finance Dummy} + \beta_{14} \text{Operating Cash Flows} \\ & + \beta_{15} \text{Reporting Lag} + \beta_{16} \text{Investment} + \beta_{17} \text{Bankruptcy Probability} + \beta_{18} \text{Stock Return} \\ & + \beta_{19} \text{Volatility} + \sum_{k=2001}^{2006} \lambda_k \text{Year}_k + \varepsilon \end{aligned}$$

where:

Going Concern	= a dummy variable equal to 1 if the client receives a going concern opinion for the current fiscal year, and 0 otherwise
Client Distance×Big 4 Dummy	= natural logarithm of driving distance in kilometers between the Big 4 client's headquarters and the nearest SEC Regional Office, from Google Maps and MapQuest

Client Distance×non-Big 4 Dummy	= natural logarithm of driving distance in kilometers between the non-Big 4 client's headquarters and the nearest SEC Regional Office, from Google Maps and MapQuest
Auditor Distance×Big 4 Dummy	= natural logarithm of driving distance in kilometers between the Big 4 auditor's office and the nearest SEC Regional Office, from Google Maps and MapQuest. Auditor distance is orthogonalized relative to client distance by regressing log of auditor distance on log of client distance, and using the residual error term as the auditor distance metric.
Auditor Distance×non-Big 4 Dummy	= natural logarithm of driving distance in kilometers between the non-Big 4 auditor's office and the nearest SEC Regional Office, from Google Maps and MapQuest. Auditor distance is orthogonalized relative to client distance by regressing log of auditor distance on log of client distance, and using the residual error term as the auditor distance metric.
Number of Clients	= natural logarithm of the number of clients the auditor's office has in the current fiscal year
Auditor Assets	= natural logarithm of the total assets of the clients in the auditor's office in the current fiscal year, in billions of dollars
Non-Big 4 Dummy	= a dummy variable equal to 1 if the auditor to which the local office belongs is a member of the non-Big 4, and 0 otherwise
Client Assets	= natural logarithm of the total assets of the client in current fiscal year, in millions of dollars
Leverage	= the ratio of the client's total liabilities to total assets at the end of current fiscal year
Change in Leverage Loss dummy	= change in leverage during the fiscal year = a dummy variable equal to 1 if the client's net income in the prior fiscal year is negative, and 0 otherwise
Firm Age	= natural logarithm of the number of years of data for the client in Compustat from the start of coverage to the current fiscal year
New Finance Dummy	= a dummy variable equal to 1 if the client has a new issuance of equity or debt securities in the subsequent year
Operating Cash Flows	= operating cash flows scaled by total assets during the current fiscal year

Reporting Lag	= number of days between the fiscal year end and the earnings announcement date
Investment	= investment assets of the client at year-end, measured as the sum of cash and cash equivalents, short-term investments, and long term investments in equity, scaled by total assets
Bankruptcy Probability	= probability of bankruptcy of the firm, following the Reynolds and Francis (2000) formula and converted into probabilities
Stock Return	= the client's annual stock return over the current fiscal year
Volatility	= the variance of the client's monthly stock returns over the current fiscal year
Year	= year dummies

The logistic model is estimated for a pooled sample of firm-year observations from 2000-2006, and the significance level of the coefficients are based on asymptotic t-statistics and the related p-values are two-tailed based on robust standard errors clustered by audit firm to control for potential serial dependence. The results are also robust to an alternative clustering by client to control for potential serial dependence. Our independent variables of interest are the distance from the nearest SEC Regional Office to the client's headquarters and to the auditor's engagement office, both partitioned on whether the auditor is a Big 4 or non-Big 4 firm. If our first prediction is correct, and auditors are more likely to issue a going concern opinion when their clients are located relatively farther from a SEC Regional Office, we expect the coefficients on the client distance variables to be positive. If our second prediction is correct, and auditors are less likely to issue a going concern opinion when their engagement office

is located relatively farther from a SEC Regional Office, we expect the coefficients on the auditor distance variables to be negative.¹⁵

We use logged measures of the client and auditor distance from the nearest SEC Regional Office as our distance measures. However, because the correlation between these measures is high ($r=0.67$), we orthogonalize these measures by regressing $\log(\text{auditor distance})$ on $\log(\text{client distance})$, and use the residual error term to measure auditor distance. Thus, by construction, the client and auditor distance measures are uncorrelated.

In addition to our test variables of interest, the going concern model includes two auditor office-level control variables, along with a set of variables commonly used in the literature to model the going concern decision. The office-level control variables measure office size by the number of clients and the total assets of all clients in the audit office (Francis and Yu, 2009). The other control variables are as follows. We include leverage and the change in leverage in the going concern model because Mutchler et al. (1997) find that debt covenant violations are positively associated with the probability of issuing a going concern opinion, and leverage is likely to capture the proximity to covenant violation (Beneish and Press 1993). The change in leverage tells us whether the firm is moving closer to covenant violation (Reynolds and Francis 2000). As in Reynolds and Francis (2000) and DeFond et al. (2002), we also include a dummy variable indicating whether there is a loss in the prior year because firms with

¹⁵ In order to directly examine the effects of client and auditor distance separately for Big 4 and non-Big 4 firms, we interact the distance measures with Big 4 dummy and non-Big 4 dummies. Econometrically, this specification is equivalent to including a main effect for client and for auditor distance, plus an interaction term to capture the marginal effect.

multiple year losses are more likely to fail.¹⁶ Log of firm age is included since younger firms are more prone to failure (Dopuch et al. 1987). A dummy variable capturing firms that issue new debt or equity securities in the subsequent year is added because Mutchler et al. (1997) finds that new financing mitigates the probability of bankruptcy. We include operating cash flows divided by total assets because poor operating cash flows are often associated with the probability of bankruptcy. The reporting lag between the fiscal year end and the earnings announcement date is included because longer lags are associated with a higher probability of receiving a going concern opinion (Raghunandan and Rama 1995; Carcello et al. 1995). The variable Investments (sum of the firm's cash and investment securities scaled by total assets) is a liquidity measure and is included because firms with greater liquidity are better equipped to stave off bankruptcy in the event of financial difficulties. We also include the Altman Z-Score as a summary measure of the probability of bankruptcy, and code the variable so that higher values indicate a higher probability of bankruptcy. We include market-based risk measures based on current fiscal year (annual) stock returns and the volatility of monthly stock returns for the current fiscal year. Finally, we also include a set of indicator variables for an observation's fiscal year (2000 through 2006) to control for any systematic time-period effects.

3.4 Descriptive statistics

Table 3 presents descriptive statistics on the data and the variables used in the primary analysis. Panel A reports data on some of the key attributes of the sample, while

¹⁶ We do not include a dummy for current year loss because our sample selection criterion is based on the firm incurring a loss (or negative operating cash flow) during the current year.

Panel B reports detailed descriptive statistics on the variables used in the going concern model for the sample of 8,466 firm-year observations. While all of the continuous variables in Panel B are winsorized at the 99th percentile of their absolute values in estimating the going concern model, Panel A presents unwinsorized data for descriptive purposes.

[Insert Table 3 Here]

In Table 3, Panel A, the first row reports that we have 3,172 distinct audit clients in our pooled sample and that the mean (median) distance from a client's headquarters to the closest applicable SEC Regional office is 238 (77) kilometers. The standard deviation of the client distance is about 305 kilometers, and ranges from a minimum of less than one kilometer to a maximum of 2,025 kilometers. Thus, there is a wide variation in our sample with respect to the distance from the client headquarters to the nearest SEC Regional Office.¹⁷ The second and third rows indicate that about 65% of our client-years are audited by Big 4 auditors (2,529/3,939), and that the mean distance between from nearest SEC Regional Office is 239 kilometers for Big 4 clients and 220 kilometers for non-Big 4 clients.¹⁸

The fourth row reports that we have 679 distinct auditor offices in our pooled sample and that the mean (median) distance from the auditor's office to the nearest applicable SEC Regional Office is about 256 (141) kilometers. The standard deviation of

¹⁷ The maximum client distance of 2,025 kilometers is the distance between a client named Sillwater Mining in Billings, Montana and the nearest SEC Regional Office in this region is located in San Francisco, California.

¹⁸ Note that the first row is less than the sum of rows two and three because each client headquarters is included only once in the first row, while clients that change from Big 4 to non-Big 4 auditors (or vice-versa) may appear in both rows two and three.

the auditor distance is about 294 kilometers, and ranges from a minimum of less than one kilometer to a maximum of 2,033 kilometers. Thus, as with client distance, there is a wide variation in our sample with respect to auditor distance.¹⁹ The fifth and sixth rows report these distances separately for Big 4 offices (mean = 342 kilometers) and non-Big 4 offices (mean = 206 kilometers), and finds that Big 4 offices tend to be quite a bit farther, on average, from the nearest SEC Regional Office when compared to non-Big 4 offices.

The seventh row reports the absolute value of the differences between the client and auditor distances from the closest SEC Regional Office, for each client/auditor pair in our sample. The mean (median) difference in distance is about 73 (21) kilometers, with a standard deviation of 163 kilometers and a range from zero to 1,969 kilometers.²⁰ Thus, the difference between the client and auditor distance metrics can be very large for a given client/auditor pair, and has a wide range in the sample. This demonstrates that the auditor's engagement office location is not necessarily the same as the client location, and therefore that client distance and auditor distance are distinct concepts.²¹

The eighth row of Panel A reports that our sample includes 2,586 unique client-office pairings, and that the mean and median number of clients per auditor office-year is approximately 17 and 10, respectively, and ranges from 1 to 201. The ninth row reports that the mean and median total client assets per auditor office-year is approximately \$67

¹⁹ The maximum auditor distance reported in Table 3, Panel A of 2,033 kilometers is the distance between the KPMG office in Billings Montana and the nearest SEC Regional Office in this region is located in San Francisco, California.

²⁰ The maximum difference between auditor and client distance reported in Table 3, Panel A of 1,969.19 is for a client located in Kalispell, Montana (Semitool, Inc.) whose nearest SEC Regional Office in San Francisco, and their auditor (Grant Thornton) located in Salt Lake City, Utah, whose nearest SEC Regional Office is in Salt Lake City.

²¹ In fact, only 299 of our 8,466 sample observations report a zero difference between the client and auditor distance from the nearest SEC Regional Office.

billion and \$1 billion, respectively, and ranges from less than \$10 million to about \$4.5 trillion. Thus, we have a very wide range of office sizes in our sample in terms of both number of clients and total client assets. The tenth row of Panel A reports that we have 332 distinct audit firms in the pooled sample and that the mean and median number of offices per audit firm is about 2 and 1, respectively, with a minimum of 1 and a maximum of 73. This suggests that while the typical audit firm is relatively small, the largest firms (the Big 4) are quite large in terms of the number of offices.

Table 3, Panel B reports statistics on the variables used to empirically estimate the going concern model for the 8,466 client-year observations (3,172 unique firms) in the sample, with all continuous variables winsorized at the 99th percentile of their absolute values. The first row reports that 8% of the client-year observations in the sample receive going concern opinions, which is consistent with the 9% reported in Reynolds and Francis (2000) and the 8% reported in DeFond et al. (2002). In addition, also consistent with prior literature, untabulated results find that non-Big 4 auditors are responsible for a disproportionately large share of these going concern reports. Specifically, about 5% of the clients of Big 4 auditors receive going concern reports in our sample, while about 13% of the clients of non-Big 4 auditors receive going concern reports. The higher rate of going concern reports among non-Big 4 clients is attributable to the relatively poorer financial health and greater riskiness of non-Big 4 clients, which suggests that the going concern opinion is a more critical decision for non-Big 4 auditors.

The second and third rows of Table 3, Panel B report that the mean (median) client distance from the nearest SEC Regional Office for Big 4 auditors is 237 (74), and for

non-Big 4 auditors is 214 (74).²² The third and fourth rows report that the mean (median) auditor distance from the nearest SEC Regional Office for Big 4 auditors is 228 (74), and for non-Big 4 auditors is 171 (45).²³

The sixth row indicates that the mean and median of the number of clients per auditor office for all of our 8,466 client-year observations is 40.89 and 27.00, respectively. The seventh row reports that the mean and median of the total client assets per auditor office, in billions of dollars, for our 8,466 client-year observations is 156.56 and 28.90, respectively. The eighth row indicates that 31% of our sample clients are audited by non-Big 4 auditors, which is higher than the 9% non-Big 4 auditors reported in DeFond et al. (2002). This higher proportion in our study is due primarily to the fact that DeFond et al. (2002) restrict their sample firms to have data in the CRSP database, which is biased towards larger firms. The ninth row reports that the mean and median total assets of the clients in our sample, in millions of dollars, are 752.69 and 71.13, respectively. This is comparable to similar studies, such as DeFond et al. (2002), although the largest and smallest clients in our sample are somewhat more extreme. The tenth and eleventh rows report that mean and median leverage is 60% and 46%, respectively, and that the change in leverage tends to be quite small. The twelfth row shows that 72% of our sample consists of loss firms, which is not surprising given the criteria used to select our financially-distressed sample.

²² The client and auditor distances reported in Panel B differ from the distances reported in Panel A because the data in Panel B is winsorized and based on the entire pooled sample of 8,466 client-year observations, while the statistics in Panel A are not winsorized and both auditor and client distance measures are based on the distinct number of clients (3,172) and auditors (679) in our sample.

²³ Note that in our regression analysis we use an orthogonalized auditor distance metric for Big 4 and non-Big 4 clients by regressing log of auditor distance on log of client distance, and using the residual error as the measure of auditor distance.

The thirteenth row reports that the mean and median client age is about 13 and 9 years, respectively. The fourteenth row indicates that 13% of the sample obtained new financing in the subsequent year and the fifteenth row shows that the mean and median reporting lag is approximately 65 and 61 days, respectively. The sixteenth row indicates that mean and median operating cash flows divided by total assets are both negative, which reflects our sample selection criteria. The seventeenth row reports that mean and median investments are 31% and 21%, respectively, which is nearly identical to the percentages reported in DeFond et al. (2002). The eighteenth row indicates that the mean and median bankruptcy scores are .42 and .30, respectively. The nineteenth row finds that the mean and median stock returns for the current fiscal year are 6% and -16%, respectively, and the twentieth row reports mean and median stock price volatility measures of 0.07 and 0.04, respectively.

Table 4 reports a matrix of the Pearson correlation coefficients for the variables included in the going concern model, using the variables as they are measured in the regression, including the orthogonalized auditor distance variable, which has a zero correlation with client distance. Correlations between the control variables and the client/auditor distance variables are quite low, 0.11 or less with the exception of the -0.30 correlation between client distance and number of clients, i.e., more distant clients are audited by offices with fewer clients. Consistent with prior research, we also find relatively high correlations among several of the control variables, although these would have no effect on the test variables of interest. For example, the non-Big 4 dummy is relatively highly correlated with number of clients (-0.44) and client asset size (-0.54) which is not surprising, i.e., non-Big 4 offices are likely to be smaller in size than Big 4

offices and to audit smaller clients. In addition, the probability of bankruptcy is relatively highly correlated with losses (0.36) and operating cash flows (-0.48), and operating cash flows are relatively highly correlated with client asset size (0.46) and change in leverage (-0.45).

[Insert Table 4 Here]

4. Primary results

Table 5 reports the results from estimating the logistic regression model in equation (1) after sequentially including the client and auditor distance measures. Specifically, Model 1 reports the results with just the client distance measure, Model 2 reports the results with just the auditor distance measure, and model 3 reports the results with both distance measures. All three models are significant at the $p < .01$ with pseudo r-squares of 33 percent. In addition, Table 5 shows that coefficients on seven of the 12 traditional control variables in the going concern models are significant at $p < .10$ in the expected direction, while neither of the office-level control variables are significant.

[Insert Table 5 Here]

With respect to our prediction regarding client distance, Table 5 indicates that the coefficient on the Big 4 client distance variable is positively significant at $p < .01$ in Models 1 and 3, while the coefficient on the non-Big 4 client distance variable is significant at $p < .10$ in Model 1, but is not significant at the .10 level in Model 3 when both auditor and client distance measures are included. These results indicate that Big 4 auditors are more likely to issue going concern reports when their client's headquarters are farther away from the closest SEC Regional Office (after controlling for auditor

distance), while non-Big 4 auditor reporting is unaffected by the geographic distance of the client.

With respect to our prediction regarding auditor distance, Table 5 indicates that the coefficient on the non-Big 4 auditor distance variable is positively significant at $p < .05$ in Models 2 and Model 3, while the coefficient on the Big 4 auditor distance variable is not significant at the .10 level in either model. These results indicate that non-Big 4 auditors are less likely to issue going concern reports when their engagement offices are farther away from the closest SEC Regional Office (after controlling for client distance), while Big 4 auditor reporting is unaffected by the geographical distance of their engagement office. Finding that Big 4 audit quality is invariant to auditor distance suggests that Big 4 auditors are able to maintain a uniform level of audit quality across engagement offices irrespective of their geographical proximity to SEC Regional Offices. Together, the combined results in Table 5 are consistent with our predictions and indicate that Big 4 auditors report more conservatively when their clients are located farther away from the closest SEC Regional Office, and that non-Big 4 auditors report less conservatively when their engagement office is located farther away from the nearest SEC Regional Office.

In summary, our primary analysis in Table 5 finds that Big 4 auditors are significantly more likely to issue going concern audit opinions to clients that are located relatively farther from SEC Regional Offices (after controlling for auditor distance), but that the geographical location of the client has no impact on the propensity of non-Big 4 auditors to issue going concern opinions. This finding is consistent with Big 4 auditors anticipating more misreporting behavior by clients farther from SEC Offices and in turn

protecting themselves by issuing more conservative audit reports. We find the opposite behavior with respect to auditor distance from the closest SEC Regional Office. Specifically, non-Big 4 auditors are less likely to issue going concern reports when their engagement offices are located farther from SEC Regional Offices, while geographic location of the engagement office has no impact on the propensity of Big 4 auditors to issue going concern opinions. This result is consistent with the more remote offices of non-Big 4 auditors perceiving a lower risk (smaller cost) of SEC enforcement actions, and thus being more willing to compromise their independence and report favorably for clients.

5. Controlling for variation in metropolitan-area area characteristics

This section tests a potential alternative explanation for observing the effect of geography on auditor behavior. Specifically, auditors located relatively farther away from SEC Regional offices may be located in smaller metropolitan areas, which may adversely impact the auditor's ability to obtain the inputs necessary for high quality audits. For example, smaller cities may have limited access to qualified employees that possess the diverse skills and expertise necessary to perform high quality audits. This alternative explanation suggests that while geography is indeed a factor that explains variations in audit quality, it does so for reasons that are not necessarily related to the proximity of a SEC Regional Office.

We test this potential alternative explanation in Table 6 by rerunning our analysis after including additional control variables for differences across metropolitan areas that may impact audit quality inputs. Specifically, we rerun our primary analysis (Model 3 in

Table 5) by adding a dummy variable capturing whether the metropolitan area is considered urban or rural (where rural is defined as having a population less than one million), and by adding continuous measures of population size and median household income for the metropolitan areas in the sample. Table 6, Panel A presents the descriptive statistics for these newly introduced variables. The first row of Panel A indicates that only 4% of auditor offices are located in rural areas (cities under one million). The second row reports that the mean and median of the population of the metropolitan areas in which the auditors' engagement offices are located are approximately 7.9 million and 5.8 million, respectively. The last row in Panel A indicates that the mean and median of household income of metropolitan areas in the sample are about \$52,000 and \$49,000, respectively.

[Insert Table 6 Here]

Table 6, Panel B presents the new results. Model 1 reports the results of adding an indicator variable for urban vs. rural population center interacted with Big 4 and non-Big 4 auditors. The results on the auditor and client distance variables are unchanged from Table 5, and the urban/rural indicator variables are insignificant. Model 2 reports the results of adding a control variable for city population size interacted with Big 4 and non-Big 4 auditors, and Model 3 reports the results of adding median city income interacted with Big 4 and non-Big 4 auditors. In both Model 2 and Model 3 the new control variables are insignificant and the auditor/client distance variables remain significant as in Table 5. Finally, Model 4 reports a combined model in which all three of the additional control variables (interacted with Big 4 and non-Big 4 auditors) are added, and again these variables are insignificant and the auditor/client distance variables are

significant as in Table 5. In sum, the results reported in Table 6 indicate that the primary results in Table 5 continue to hold after including these new population-related control variables and that none of the newly included variables are statistically significant at the .10 level.

6. Effect of geographic proximity on auditors censured by the SEC

Our results suggest that non-Big 4 auditors are more independent of their clients when they are located relatively closer to SEC Regional Offices, consistent with auditors perceiving that closer proximity to a SEC Regional Office increases their chances of being investigated by the SEC for misconduct. We further explore this issue by examining whether the SEC is indeed more likely to investigate auditors in closer proximity to SEC Regional Offices.

We begin this analysis by examining all AAERs issued from January 2004 through April 2008 (the most recent period available). We find that auditors located in 35 distinct offices are censured and/or punished by the SEC over this time period and that the mean and median distance between these auditor's offices and the nearest SEC office is 180 kilometers and 52 kilometers, respectively. These distances are significantly smaller than the mean and median distances between the auditor's office and the nearest SEC offices in our sample: 256 kilometers and 141 kilometers, respectively (at $p \leq .10$, two-tailed) as reported in Table 3, Panel A. Thus, this analysis is consistent with auditors being rational in their perceptions that close proximity to a SEC Regional Office increases the probability of being investigated by the SEC. However, this analysis should be interpreted with caution, since more definitive results would require a more formal

model of auditor investigations by the SEC that would control for many other factors, including the severity of the misconduct.

7. Summary and conclusions

Our study addresses the question of whether SEC enforcement influences auditor behavior. This is a compelling question because, while the SEC is the regulatory agency responsible for assuring high quality financial reporting (including the role of auditing) in the US capital markets, we know relatively little about its effectiveness. We attempt to fill this void by appealing to the recent literature on the economics of geography to test whether auditors located relatively farther away from SEC Regional Offices have reduced incentives to be independent and therefore are less likely to issue going concern audit opinions. We also explore whether non-Big 4 auditors are more likely than Big 4 auditors to be influenced by their proximity to SEC Regional Offices. The impact of the SEC on non-Big 4 auditor behavior is particularly important because the market share of public clients audited by non-Big 4 auditors has grown dramatically since Sarbanes-Oxley, non-Big 4 auditors issue a disproportionately large number of going concern audit reports because their clientele is risky, and prior literature suggests that non-Big 4 auditors tend to perform lower quality audits as evidenced by a greater propensity for non-Big 4 auditors to be censured and punished in SEC enforcement actions.

Our analysis finds that Big 4 auditors (but not non-Big 4 auditors) are more likely to issue going concern audit reports as client distance from the nearest SEC Regional Office increases. Kedia and Rajgopal (2007) find that distant clients are more likely to misreport, and our finding is consistent with Big 4 auditors anticipating the possibility of

such client behavior by reporting more conservatively. We also examine if auditor engagement office distance from the closest SEC Regional Office (after controlling for client distance), affects auditor behavior. Here we find that the likelihood of issuing a going concern audit report decreases as the distance between the auditor's office and the SEC Regional Office increases, but only among non-Big 4 auditors, which suggests less independent behavior and is consistent with a lower perceived likelihood of detection and punishment by the SEC.

Overall our analysis finds evidence consistent with the geography of SEC enforcement influencing the economic incentives of both Big 4 and non-Big 4 auditors, with greater client distance leading to more conservative Big 4 reporting, and with greater auditor distance leading to less conservative non-Big 4 reporting. This study adds new insight to the widespread evidence that Big 4 auditors are of higher quality than non-Big 4 auditors, with the geography of SEC enforcement affecting the incentives and behavior of both groups of auditors and leading to systematic differences in audit quality across Big 4 and non-Big 4 engagement offices.

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Appendix

The SEC Regional Offices²⁴

The SEC Regional Offices constitute one crucial component of the strategic organizational structure put in place within the SEC to fulfill the agency's ultimate goal: the enforcement of compliance with Federal Securities Laws. As shown in the SEC Organization Chart in Figure 1, the eleven Regional Offices carry out their duties under the leadership of both the Division of Enforcement and Office of Compliance Inspection & Examination. Accordingly, the responsibilities of all regional offices are twofold: one is to promote compliance with the laws (under the supervision of the Office of Compliance Inspection & Examination), and the other is to enforce the Federal Securities Laws (under the supervision of the Division of Enforcement).

[Insert Figure 1 Here]

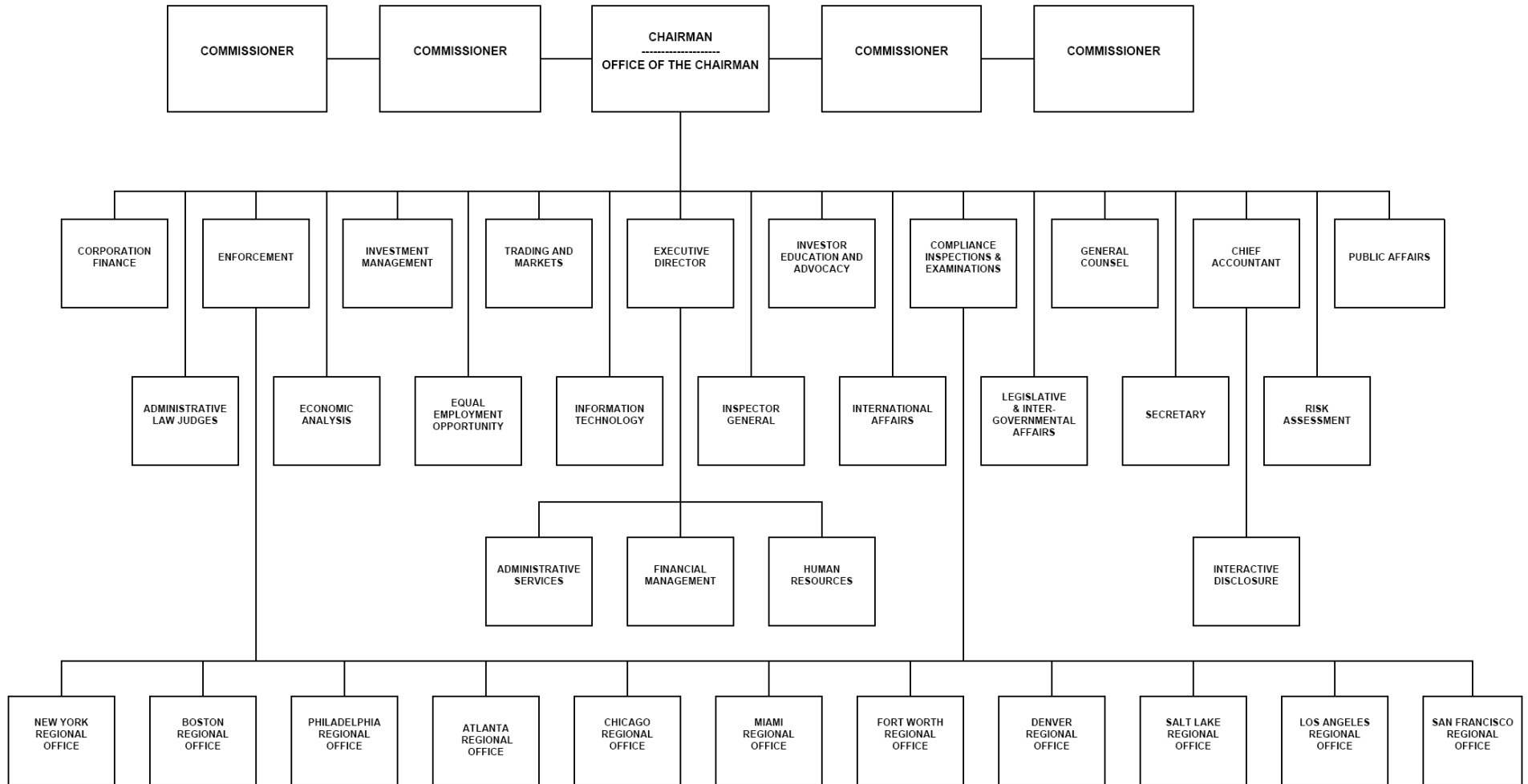
The history of the Regional Offices can be traced back to the beginning of the SEC in early 1930s, following the enactment of the Securities Acts of 1933 and 1934. The composition of the Regional Offices has changed from time to time, but the current composition of 11 regional offices has remained stable during our sample period from 2000 through 2006. With regards to the SEC's enforcement authority, the regional offices, acting as the enforcement arm of the SEC, seek to detect violations quickly, publicize misconduct where appropriate to alert investors to possible wrongdoing, and take prompt action to halt misconduct and its effects (SEC 2003). It is notable that financial reporting related investigations and inquiries account for 25% of all cases under investigation by the SEC, and is consistently ranked at the top among all core enforcement program areas.

²⁴ The description regarding the SEC Regional Offices is based on information garnered from the SEC website (www.sec.gov).

The SEC is a law enforcement agency, and with the help of the Regional Offices every year the SEC brings hundreds of civil enforcement actions against individuals and companies for violation of the securities laws. All of the SEC Regional Offices have accounting staff that are actively engaged in identifying potential accounting misconduct through a variety of channels including surveillance activities, research and data analysis, tips and complaints from the public, the media, and the agency's examination and disclosure review programs (SEC 2003). In sum, the Regional Offices are an integral part of the enforcement efforts at the SEC, and in many cases, they act proactively as initiators of investigations as well as inquiries into the potential violations of Federal Securities Laws.

Figure 1

SEC Organizational Chart and Reporting Responsibilities of SEC Regional Offices²⁵



²⁵ Source: SEC (2007)

Table 1
Sample selection

	Client-year observations
From Audit Analytics database, 2000-2006 (excluding auditors and clients located outside of the continental US and investment management companies)	69,422
Less:	
Missing financial data in Compustat or SDC	(44,865)
Financial industry clients and clients changing year end	(803)
Missing client headquarters street address	(2,419)
Missing auditor office street addresses (including all 1,203 former Arthur Andersen clients in the database)	(3,245)
Excluding non-financially distressed observations	(9,211)
Excluding non-first-time going concern opinions	(413)
Final sample	8,466

Table 2
SEC Regional Offices, Regions, and States in each Regional Jurisdiction

SEC Regional Office	Region	States in Regional Jurisdiction
New York Philadelphia Boston	Northeast	Connecticut Delaware District Of Columbia Maine Maryland Massachusetts New Hampshire New Jersey New York Pennsylvania Rhode Island Vermont Virginia West Virginia
Chicago	Midwest	Illinois Indiana Iowa Kentucky Michigan Minnesota Missouri Ohio Wisconsin
Atlanta Miami	Southeast	Alabama Florida Georgia Louisiana Mississippi North Carolina South Carolina Tennessee
Dallas-Fort Worth Denver Salt Lake City	Central	Arkansas Colorado Kansas Nebraska New Mexico North Dakota Oklahoma South Dakota Texas Utah Wyoming
San Francisco Los Angeles	Pacific	Arizona California Idaho Montana Nevada Oregon Washington

Table 3
Descriptive Statistics

Panel A: Overview of auditor and client distance data, and auditor office-level descriptive data

Variable*	N	Mean	Standard Deviation	Minimum	Median	Maximum
1. Client distance (kilometers)	3,929	232.26	303.14	0.16	75.64	2,024.55
2. Client distance (kilometers, Big 4)	2,529	238.93	311.55	0.16	75.64	2,024.55
3. Client distance (kilometers, non-Big 4)	1,400	220.21	287.04	0.32	75.64	1,969.84
4. Auditor distance (kilometers)	679	256.26	294.03	0.06	140.82	2,032.60
5. Auditor distance (kilometers, Big 4)	245	341.88	297.85	0.16	305.78	2,032.60
6. Auditor distance (kilometers, non-Big 4)	434	206.34	272.34	0.06	70.41	1,591.64
7. Difference in auditor and client distance (kilometers)	3,929	72.75	163.21	0.00	20.79	1,969.19
8. Number of clients per auditor office-year	2,586	17.41	22.32	1.00	10.00	201.00
9. Total client assets per auditor office-year (\$ Billions)	2,586	67.48	281.42	0.00	1.36	4,515.39
10. Number of auditor offices per audit firm	332	2.38	7.88	1.00	1.00	73.00

- All variables in Pane A are unwinsorized.

Table 3 (continued)

Variable definitions:

Client distance (Big 4/non-Big 4)	= driving distance from the headquarters of the client to closest SEC Regional Office, per Big 4 and non-Big 4 auditor office, measured in kilometers using Google Maps and MapQuest.
Auditor distance (Big 4/non-Big 4)	= driving distance from the auditor's office to the closest SEC Regional Office, per Big 4 and non-Big 4 auditor office, measured in kilometers using Google Maps and MapQuest.
Difference in auditor and client distance	= abs (auditor distance – client distance).
Number of clients per auditor office-year	= number of clients per auditor office over all years of our sample period.
Total client assets per auditor office-year	= sum of the total assets of clients in the office, measured per auditor office-year, in billion dollars.
Number of auditor offices per audit firm	= number of distinct offices for each audit firm in our sample.

Table 3 (continued)**Panel B: Descriptive statistics for variables used in going concern audit opinion analysis**

<i>Variables</i>	N	Mean	Std. Dev.	Min	Median	Max
1. Going concern	8,466	0.08	0.26	0.00	0.00	1.00
2. Client distance (km, Big 4)	5,820	237.17	314.81	0.16	74.03*	1308.40*
3. Client distance (km, non-Big 4)	2,646	214.38	276.05	0.32	74.03*	1308.40*
4. Auditor distance (km, Big 4)	5,820	227.92	317.07	0.16	74.03*	1342.19*
5. Auditor distance (km, non-Big 4)	2,646	170.94	269.00	0.06	45.06	1342.19*
6. Number of clients	8,466	40.89	39.96	1.00	27.00	172.00
7. Auditor assets (\$billions)	8,466	156.56	440.41	0.00	28.90	2897.16
8. Non-Big 4 dummy	8,466	0.31	0.46	0.00	0.00	1.00
9. Client assets (\$ millions)	8,466	752.69	3234.45	0.00	71.13	62068.00
10. Leverage	8,466	0.60	0.89	0.00	0.46	12.40
11. Change in leverage	8,466	0.04	1.08	-13.15	0.03	13.15
12. Loss dummy	8,466	0.72	0.45	0.00	1.00	1.00
13. Firm age (years)	8,466	13.20	10.80	1.00	9.00	54.00
14. New finance dummy	8,466	0.13	0.34	0.00	0.00	1.00
15. Reporting lag (days)	8,466	65.45	32.20	0.00	61.00	273.00
16. Operating cash flows	8,466	-0.17	0.48	-4.49	-0.04	1.00
17. Investment	8,466	0.31	0.29	0.00	0.21	0.97
18. Bankruptcy probability	8,466	0.42	0.36	0.00	0.30	1.00
19. Stock return	8,466	0.06	0.88	-0.92	-0.16	3.57
20. Volatility	8,466	0.07	0.08	0.00	0.04	0.39

*The maximum values in lines 2 and 3, and in lines 4 and 5, are identical due to the effects of winsorizing the data. Note also that the median value of 74.03 is the same in lines 2, 3 and 4 (which is 46 miles or $46 \times 1.6 = 74.03$ kilometers). It turns out there are a surprisingly large number of observations in the sample in which the client or auditor, after rounding to the nearest mile, is 46 miles from the closest SEC Regional Office: there are 102 firm-year observations for client distance, and 131 firm-year observations for auditor distance equal this value. Given that clients tend to geographically cluster in certain cities and in particular commercial centers within these cities, it is not remarkable that the median client distance would be the same for groups of auditors. It is somewhat surprising that the median Big 4 auditor distance is also 46 miles. But we carefully reviewed the 245 unique Big 4 offices, and the median office distance for the 5,280 clients (firm-year observations) in these offices is 46 miles, or 74.03 kilometers.

Table 3 (continued)

Variable definitions:

Going Concern	= a dummy variable equal to 1 if the firm receives a going concern opinion for the current fiscal year, and 0 otherwise
Client Distance (Big 4)	= driving distance in kilometers between Big 4 client's headquarters and nearest SEC Regional Office, from Google Maps and MapQuest
Client Distance (non-Big 4)	= driving distance in kilometers between non-Big 4 client's headquarters and nearest SEC Regional Office, from Google Maps and MapQuest
Auditor Distance (Big4)	= driving distance in kilometers between Big 4 auditor's office and nearest SEC Regional Office, from Google Maps and MapQuest
Auditor Distance (non-Big 4)	= driving distance in kilometers between non-Big 4 auditor's office and nearest SEC Regional Office, from Google Maps and MapQuest
Number of Clients	= number of clients in the auditor's engagement office in current fiscal year
Auditor Assets	= total assets of the clients in the auditor's engagement office in current fiscal year, in billions of dollars
Non-Big 4 Dummy	= a dummy variable equal to 1 if the auditor to which the engagement office belongs is not a member of the non-Big 4, and 0 otherwise
Client Assets	= total assets of the client in current fiscal year, in millions of dollars
Leverage	= the ratio of the client's total liabilities to total assets at the end of current fiscal year
Change in Leverage	= change in leverage during the fiscal year
Loss dummy	= a dummy variable equal to 1 if the client income in prior fiscal year is negative, and 0 otherwise
Firm Age	= number of years of data for the client in Compustat from the start of coverage to the current fiscal year
New Finance Dummy	= a dummy variable equal to 1 if client has a new issuance of equity or debt in subsequent year
Operating Cash Flows	= operating cash flows scaled by total assets during the current fiscal year
Reporting Lag	= number of days between the fiscal year end and the earnings announcement date
Investment	= investment assets of the client at year-end, measured as the sum of cash and cash equivalents, short-term investments, and long term investments in equity, scaled by total assets
Bankruptcy Probability	= probability of bankruptcy of the firm, following the Reynolds and Francis (2000) formula and converted into probabilities
Stock Return	= the client's annual stock return over the current fiscal year
Volatility	= the variance of the client's monthly stock returns over the current fiscal year

Table 4
Pair-wise Pearson correlation coefficients for variables used in going concern model regression analysis (n=8,466)
(correlations with absolute values 0.02 and higher are significant at p.05)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Going concern (1)	1.00																	
Client distance (2)	0.02	1.00																
*Auditor distance (3)	-0.04	-0.00	1.00															
Auditor assets (4)	-0.04	-0.21	-0.10	1.00														
Number of clients (5)	-0.06	-0.30	-0.10	0.53	1.00													
Non-big 4 (6)	0.14	-0.01	-0.11	-0.24	-0.44	1.00												
Client assets (7)	-0.23	0.05	0.03	0.18	0.24	-0.54	1.00											
Leverage (8)	0.24	0.01	-0.03	-0.02	-0.08	0.15	-0.21	1.00										
Change in leverage (9)	0.12	-0.01	-0.00	0.00	0.01	-0.02	-0.06	0.46	1.00									
Loss (10)	0.09	-0.06	0.00	-0.00	0.06	0.03	-0.18	0.05	0.00	1.00								
Firm age (11)	-0.03	0.04	-0.02	0.05	-0.06	-0.01	0.18	0.01	0.02	-0.19	1.00							
New finance (12)	-0.06	0.01	0.02	0.07	0.11	-0.18	0.15	-0.04	-0.00	0.04	-0.05	1.00						
Op cash flows (13)	-0.30	0.04	0.01	0.04	0.01	-0.16	0.46	-0.45	-0.22	-0.21	0.17	0.02	1.00					
Report lag (14)	0.26	-0.04	-0.08	-0.06	-0.26	0.44	-0.44	0.22	0.05	0.03	0.00	-0.15	-0.16	1.00				
Investment (15)	-0.07	-0.12	0.06	-0.01	0.17	-0.09	-0.21	-0.16	-0.04	0.28	-0.21	0.11	-0.26	-0.17	1.00			
Prob. bank (16)	0.28	-0.09	-0.01	-0.02	-0.01	0.15	-0.39	0.25	0.06	0.36	-0.17	0.02	-0.48	0.17	0.24	1.00		
Return (17)	-0.11	0.01	0.01	-0.01	-0.02	0.05	-0.04	0.00	-0.09	0.06	0.04	0.05	0.05	-0.00	0.04	-0.00	1.00	
Volatility (18)	0.13	-0.06	0.00	-0.05	-0.02	0.15	-0.30	0.14	-0.03	0.15	-0.22	-0.02	-0.22	0.14	0.06	0.28	0.10	1.00

*Note that auditor distance is orthogonalized relative to client distance.

Table 4, continued

Variable definitions:

Going Concern	= a dummy variable equal to 1 if the client receives a going concern opinion for the current fiscal year, and 0 otherwise
Client Distance	= natural logarithm of driving distance in kilometers between the client's headquarters and the nearest SEC Regional Office, from Google Maps and MapQuest
Auditor Distance	= natural logarithm of driving distance in kilometers between the auditor's office and the nearest SEC Regional Office, from Google Maps and MapQuest. Auditor distance is orthogonalized relative to client distance by regressing log of auditor distance on log of client distance, and using the residual error term as the orthogonalized auditor distance metric
Number of Clients	= natural logarithm of the number of clients the auditor's office has in the current fiscal year
Auditor Assets	= natural logarithm of the total assets of the clients in the auditor's office in the current fiscal year, in billions of dollars
Non-Big 4 Dummy	= a dummy variable equal to 1 if the auditor to which the local office belongs is a member of the non-Big 4, and 0 otherwise
Client Assets	= natural logarithm of the total assets of the client in current fiscal year, in millions of dollars
Leverage	= the ratio of the client's total liabilities to total assets at the end of current fiscal year
Change in Leverage	= change in leverage during the fiscal year
Loss dummy	= a dummy variable equal to 1 if the client's net income in the prior fiscal year is negative, and 0 otherwise
Firm Age	= natural logarithm of the number of years of data for the client in Compustat from the start of coverage to the current fiscal year
New Finance Dummy	= a dummy variable equal to 1 if the client has a new issuance of equity or debt securities in the subsequent year
Operating Cash Flows	= operating cash flows scaled by total assets during the current fiscal year
Reporting Lag	= number of days between the fiscal year end and the earnings announcement date
Investment	= investment assets of the client at year-end, measured as the sum of cash and cash equivalents, short-term investments, and long term investments in equity, scaled by total assets
Bankruptcy Probability	= probability of bankruptcy of the firm, following the Reynolds and Francis (2000) formula and converted into probabilities
Stock Return	= the client's annual stock return over the current fiscal year
Volatility	= the variance of the client's monthly stock returns over the current fiscal year

Table 5
Going concern logit models that include client and auditor distance measures and control variables
for a sample of 8,644 financially distressed firms (including 637 going concern opinions) for fiscal
years 2000 through 2006 (coefficients and asymptotic t-statistics in parenthesis)

	Model 1	Model 2	Model 3
<u>Variables of Interest</u>			
Client Distance*Big 4		15.997***	15.302***
		(5.71)	(4.91)
Client Distance*Non-Big 4		10.653*	8.042
		(1.95)	(1.46)
Auditor Distance*Big 4	2.695		1.747
	(0.85)		(0.45)
Auditor Distance*Non-Big 4	-9.756***		-7.660**
	(-2.65)		(-2.00)
<u>Office-level Control Variables</u>			
Number of Clients	-0.040	0.014	0.002
	(-0.63)	(0.22)	(0.03)
Auditor Assets	-0.006	0.004	0.001
	(-0.17)	(0.13)	(0.03)
<u>Traditional GC-Model Control Variables</u>			
Non-Big 4 Dummy	-0.326	-0.143	-0.214
	(-1.60)	(-0.72)	(-1.00)
Client Assets	-0.073	-0.072	-0.074
	(-1.43)	(-1.35)	(-1.38)
Leverage	-0.005	-0.006	-0.006
	(-0.10)	(-0.12)	(-0.12)
Change in Leverage	0.024	0.024	0.026
	(0.67)	(0.66)	(0.72)
Loss Dummy	0.141	0.147	0.147
	(1.10)	(1.15)	(1.15)
Firm Age	0.180	0.178	0.184
	(1.56)	(1.49)	(1.55)
New Finance Dummy	-0.395**	-0.414**	-0.412**
	(-2.03)	(-1.98)	(-1.97)
Operating Cash Flows	-0.629***	-0.615***	-0.619***
	(-5.38)	(-5.24)	(-5.27)
Reporting Lag	0.017***	0.017***	0.017***
	(9.97)	(9.52)	(9.61)
Investment	-2.270***	-2.214***	-2.226***
	(-5.74)	(-5.64)	(-5.71)
Bankruptcy Probability	2.501***	2.565***	2.555***
	(14.05)	(13.99)	(13.85)
Stock Return	-0.689***	-0.697***	-0.695***
	(-6.51)	(-6.65)	(-6.62)
Volatility	1.590***	1.667***	1.652***
	(2.58)	(2.69)	(2.67)
Observations	8,466	8,466	8,466
Pseudo R-Square	0.33***	0.33***	0.33***

* = .10; ** = .05, and *** = .01 levels of statistical significance. Note that year dummies are included in model estimations but for brevity are not reported in the table.

Table 6
Analysis after controlling for differences across metropolitan areas

Panel A: Descriptive statistics

<i>Variables</i>	N	Mean	Std. Dev.	Min	Median	Max
Rural	8,466	0.04	0.19	0.00	0.00	1.00
Auditor Metro Population (in 000's)	8,466	7931.43	6849.47	23.55	5819.10	21198.15
Auditor Metro Median Income (\$000's)	8,466	51.77	9.51	26.16	48.90	70.83

Variable definitions:

- Rural = a dummy variable equal to 1 if the metropolitan area where the engagement office of the auditor is located has a population less than 1 million, and 0 otherwise. It is measured per auditor office. The metropolitan area designation and population data are from the U.S. census bureau
- Auditor Metro Population = population of the metropolitan area where the auditor office is located, measured in thousands
- Auditor Metro Median Income = median household income of the metropolitan area where the auditor office is located, measured in thousands of dollars.

Table 6 (continued)
Panel B: Going concern models after controlling for differences across metropolitan areas
(coefficients and asymptotic t-statistics in parenthesis)

	Model 1	Model 2	Model 3	Model 4
<u>Variables of Interest</u>				
Client Distance*Big 4	15.327***	15.488***	15.356***	15.686***
	(5.29)	(6.32)	(6.14)	(5.52)
Client Distance*non-Big 4	7.228	7.313	7.645	6.974
	(1.30)	(1.32)	(1.36)	(1.24)
Auditor Distance*Big 4	1.718	1.810	1.750	1.780
	(0.43)	(0.46)	(0.48)	(0.49)
Auditor Distance*Non-Big 4	-8.214**	-8.042**	-7.897**	-8.346**
	(-2.13)	(-2.05)	(-2.06)	(-2.14)
Rural*Big 4	0.121			0.146
	(0.28)			(0.38)
Rural*Non-Big 4	0.259			0.209
	(0.80)			(0.52)
Auditor Metro Pop*Big 4		0.004		0.015
		(0.05)		(0.22)
Auditor Metro Pop*Non-Big 4		-0.037		-0.014
		(-0.54)		(-0.16)
Auditor Metro Inc*Big 4			0.011	0.001
			(0.03)	(0.00)
Auditor Metro Inc*Non-Big 4			-0.123	-0.036
			(-0.31)	(-0.08)
<u>Office-level Control Variables</u>				
Number of Clients	0.008	0.002	0.004	0.006
	(0.12)	(0.03)	(0.07)	(0.10)
Auditor Assets	0.002	0.003	0.000	0.002
	(0.05)	(0.09)	(0.01)	(0.05)
<u>Traditional GC-Model Control Variables</u>				
Non-Big 4 Dummy	-0.215	0.154	1.231	0.440
	(-1.01)	(0.18)	(0.21)	(0.08)
Client Assets	-0.073	-0.073	-0.074	-0.073
	(-1.36)	(-1.37)	(-1.37)	(-1.35)
Leverage	-0.006	-0.006	-0.006	-0.006
	(-0.12)	(-0.11)	(-0.12)	(-0.12)
Change in Leverage	0.025	0.025	0.027	0.025
	(0.70)	(0.68)	(0.74)	(0.70)
Loss Dummy	0.148	0.150	0.148	0.149
	(1.16)	(1.17)	(1.16)	(1.17)
Firm Age	0.185	0.184	0.184	0.184
	(1.58)	(1.55)	(1.54)	(1.56)
New Finance Dummy	-0.415**	-0.412**	-0.411**	-0.414**
	(-1.97)	(-1.98)	(-1.97)	(-1.97)
Operating Cash Flows	-0.619***	-0.620***	-0.618***	-0.619***
	(-5.29)	(-5.29)	(-5.28)	(-5.30)
Reporting Lag	0.017***	0.017***	0.017***	0.017***
	(9.53)	(9.60)	(9.67)	(9.49)
Investment	-2.230***	-2.224***	-2.227***	-2.229***
	(-5.76)	(-5.74)	(-5.75)	(-5.79)
Bankruptcy Probability	2.560***	2.555***	2.554***	2.559***
	(13.98)	(13.93)	(13.84)	(13.94)
Stock Return	-0.697***	-0.698***	-0.695***	-0.697***
	(-6.60)	(-6.63)	(-6.61)	(-6.61)
Volatility	1.658***	1.653***	1.648***	1.655***
	(2.68)	(2.67)	(2.62)	(2.64)
Observations	8,466	8,466	8,466	8,466
Pseudo R-Square	0.33***	0.33***	0.33***	0.33***

* = .10, ** = .05, and *** = .01 levels of statistical significance.