THE CONTAGION EFFECT OF OFFICE-LEVEL AUDIT FAILURES

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The undersigned, appointed by the dean of the Graduate School,

have examined the dissertation entitled

THE CONTAGION EFFECT OF OFFICE-LEVEL AUDIT FAILURES

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A candidate for the degree of

Doctor of Philosophy

And hereby certify that, in their opinion, it is worthy of acceptance.

Professor Jere Francis

Professor John Howe

Professor Inder Khurana

Professor Elaine Mauldin

To my wife, Mariah Michas,

whom without I could not have completed this journey.

You share this accomplishment equally with me.

To my parents, Kathryn and Nicholas Michas,

for their love, support and advice throughout this journey and my life.

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ABSTRACT

I investigate if the presence of an audit failure in an auditor office location in a given fiscal year indicates the presence of a *contagion effect* on the quality of other concurrent audits conducted by the office. Audit quality is inferred by cross-sectional differences in clients' audited earnings, specifically, abnormal accruals. I find that the presence of at least one audit failure (defined as a downward restatement of net income by a client) is indicative of contagion within the office. Specifically, for offices with one or more client restatements, abnormal accruals of other clients in the office are significantly larger (on average) than in those offices that have no restatements. This result holds for offices of both Big Four and non-Big Four auditors. Further analysis indicates the contagion in Big Four offices occurs in smaller offices and in Big Four offices where a low percentage of audits are conducted in those industries in which an office is the city-level industry leader (irrespective of office size).

Chapter 1

Introduction

I investigate if the existence of at least one audit failure in an auditor office location indicates a more systematic problem in office-level audit quality for publicly-traded client companies.[1] It is possible that a "contagion effect" exists within an auditor office location due to office-specific characteristics including personnel and quality-control procedures. I define a contagion effect as the existence of a lower level of overall audit quality, on average, for all client companies of an auditor office due to these office-specific characteristics. However, a contagion effect is very difficult to identify for those outside the audit firm as the specific characteristics of an auditor office that directly affect overall audit quality are not observable (i.e. the auditor office is, to a large extent, a "black box" to outsiders). In this study I provide a method for outsiders to assess whether such a contagion effect may exist within a particular auditor office based on easily obtainable publicly-available information.

Prior research provides evidence that differences in characteristics across offices of accounting firms is an important determinant of audit quality. This literature shows that differences in audit quality can exist even within the same firm, depending on office-level characteristics. For example, Francis and Yu (2009) and Choi et al. (2010) show that audit quality is higher in relatively large Big Four auditor offices. Research also

[1] Throughout the paper I define an audit failure as a material downward restatement of net income made by a client company subsequent to the audit opinion date. Such a restatement is indicative that the audit conducted was of low quality (Palmrose and Scholz 2004). I discuss this in detail in section 3.

shows that industry expertise within an office is positively associated with engagement-specific audit quality and audit pricing (Francis et al. 2005; Reichelt and Wang 2010). Finally, Choi et al. suggest that regulators' focus should be shifted towards auditor office size and away from a simple Big Four / non-Big Four dichotomy. In sum, this research highlights the importance of investigating auditor office-level characteristics and their effects on audit quality, and is consistent with the view that offices are the primary decision-making units in accounting firms (Wallman 1996).

Different stakeholders could benefit from being able to infer audit quality at the auditor office level. For example, regulators can benefit from such knowledge as it provides a way to focus on auditor office locations that are more likely to be problematic from a quality-control perspective. Audit standard setters can benefit as they may be able to formulate auditing standards that are better able to address the determinants of audit quality at the auditor office level. Audit firms can benefit by better identifying specific offices that may not be implementing the firm's quality-control procedures appropriately.[2] Consequently, audit firms will be able to more effectively use finite resources to improve the firm's overall audit quality and reduce litigation risk exposure by focusing on offices that are more likely to be conducting audits of lower overall quality. Finally, investors may be able to use the results to assess earnings quality based on the auditor office that performs the audit.

My results indicate that in auditor offices where at least one audit failure in a year is identified, other clients of that office exhibit a higher level of discretionary accruals

[2] While audit failure information has obviously been available to national offices in the past, mine is the first study that empirically investigates whether any party, including the national office of audit firms, can infer something about an office's overall audit quality by identifying a specific audit failure as having occurred in an office.

compared to offices with zero audit failures. These higher levels of discretionary accruals are indicative of overall lower audit quality, consistent with prior research (Francis et al. 1999a; Francis and Yu 2009; Reichelt and Wang 2010). These results hold for all offices of non-Big Four auditors, and for all but the largest quartile of Big Four offices. Further, a contagion effect exists only in those Big Four offices where the portion of audits conducted in an office's areas of industry expertise is relatively low. This suggests that a systematic problem in audit quality exists only in Big Four offices that make low use of industry-specific human capital. My results are robust to assessing restatement materiality at various thresholds (two, five and 10 percent), as well as measuring the frequency of audit failures within an office as a percentage of total audit engagements.

The remainder of the paper proceeds as follows. I discuss the motivation for the paper, and develop my hypotheses in section II, while section III presents the sample, research design and descriptive statistics. Section IV reports the main results and I conclude the paper in section V.

Chapter 2

Background, Motivation and Hypotheses Development

2.1 Background and Motivation

Prior research argues that offices are the primary decision-making units in accounting firms (Wallman 1996; Francis et al. 1999b; Francis and Yu 2009). However, the extant literature that investigates the determinants of audit quality at the auditor office-level is relatively scant. Francis and Yu (2009; 2010) and Choi et al. (2010) are the only studies that currently provide a way to distinguish *overall* audit quality at the office level by providing evidence that the size of an auditor office is positively associated with audit quality.[3] While these studies attempt to look into the "black box" of auditor offices to investigate office-level characteristics associated with differential audit quality, office size is a somewhat crude tool that may not be as useful to outsiders as a measure that is more specific. Further, given that auditor office size is likely to be very stable from year to year, this measure is not able to discern yearly variations in office-level audit quality. Given the relatively high amount of turnover within audit firms (Hiltebeitel et al. 2000), a measure that provides an indication of overall audit quality within an office in a particular year is likely to be more useful compared to office size alone. Further, my measure can be used in conjunction with auditor office size and, consequently, provides an important contribution to the literature as well as a more refined way to assess office-level audit quality. My study also investigates differences in offices of both Big Four and non-Big

[3] As discussed below, research also investigates the impact of industry expertise on audit quality. However, given that auditor offices conduct audits for clients both within and outside of the office's industry of expertise, these studies do not provide evidence on *overall* audit quality within an auditor office.

Four audit firms. This is important as the non-Big Four firms now conduct audits for about 30 percent of public-traded companies, and their market share has grown steadily since the collapse of Arthur Andersen in 2002.

Prior research also indicates there are differences in engagement-level audit quality based on the auditor's industry expertise (Choi et al. 2010; Francis et al. 2005; Francis and Yu 2009; Francis and Yu 2010; Reichelt and Wang 2010). However, while an auditor office is often classified as an expert in a particular industry, that office will typically audit many clients outside of its areas of industry expertise. For example, an office may be an expert in the banking sector; however, if that office also performs audits for other clients outside of banking, the percentage of audits in the office that are for banks may be relatively low, say, only 40 of total engagements. Therefore, the above industry-based studies that investigate the quality of audits at the *engagement level* do not assess the overall level of audit quality in an office as they do not combine the 60 percent of non-specialist audit engagements with the 40 percent that are specialist bank audits. Rather, these studies compare the entire group of industry expert audit engagements (regardless of the specific office) with the group of non-industry expert engagements (regardless of office). In other words, the unit of analysis is engagement-specific industry expertise, not office-specific expertise. In contrast, I compare the quality of all audits within offices where an audit failure is identified, to all audits in those offices where no audit failures are identified. Therefore, I am investigating variation in overall office-level characteristics instead of variation in the type of specific audit engagement (industry expert vs. non-industry expert). My study makes an important contribution to the literature as it provides a way to assess audit quality at the office-level in a new and more

refined manner compared to those found currently in the literature based on office size and engagement-specific industry expertise.

2.2 Hypotheses Development

As discussed above, cross-sectional differences in audit quality at the office level have been attributed to industry expertise that resides with the unique personnel of an office location, and thus is not captured by the audit firm as a whole (Ferguson et al. 2003). Under this perspective, it is the human capital of the audit office that is important in determining audit quality based on the industry expertise of engagement personnel. This perspective can be widened beyond industry expertise to argue that the overall quality and amount of human capital possessed by personnel in an office location is the main determinant of office-level audit quality. This suggests that, in addition to industry-specific expertise, auditor office locations likely exhibit differences in overall audit quality based on differences in human capital and quality control procedures in general. Francis and Yu (2009) and Choi et al. (2010) provide direct evidence of these differences by showing that overall audit quality is higher for clients of auditor office locations that are larger in size. Francis and Yu (2009) argue that this is the case because larger offices possess more collective human capital due to more extensive experience dealing with public companies.[4]

However, the use of auditor office size to infer overall audit quality within the office is somewhat limited. For example, office size is very similar from year-to-year which limits the ability to identify variation in audit quality within the same office across different years. Given the relatively high turnover rate of office personnel in the audit

[4] Choi et al. (2010) attribute this finding to larger offices being less economically dependent on any one client.

field (Hiltebeitel et al. 2000), audit quality may vary from year-to-year based on the specific human capital characteristics of office personnel in a specific year, even though office size remains relatively constant over time. Thus, the identification of an audit failure can provide outsiders with a way to "peer into" the office in a way that is more specific from year-to-year compared to a general measure of office size.[5]

The existence of a specific audit failure within an auditor office may indicate one of two possibilities. First, it may simply indicate that a one-off audit engagement was of low quality for engagement-specific or idiosyncratic reasons. The second possibility, and the one that I investigate, is that one audit failure may *reveal* a more systemic problem, due to the characteristics of office personnel, that affects the quality of other concurrent audits conducted by the office. I term this a *contagion*. Specifically, it is possible that more general characteristics of office-level personnel including the level of expertise and knowledge (or overall human capital), or the lack of robust office-level quality-control procedures, lead to the audit failure and to other low quality audits in the office as well. If this is the case, and one can objectively identify the existence of at least one audit failure as having occurred within an office, then it provides useful information about the quality of other audits performed within that office.

In a related paper, Gunny and Zhang (2010) investigate whether audit quality is lower for clients of auditors in which the Public Company Accounting Oversight Board

[5] Krishnan (2005) also analyzes office-level audit quality. He finds that the clients of the Houston office of Arthur Andersen, which audited Enron, exhibit less timely reporting of bad news compared to a sample of Houston-based clients audited by other Big Six audit firms, as well as clients of Andersen's Atlanta office, in the same year as the Enron audit failure. Krishnan (2005) concludes that the Houston office of Arthur Andersen provided a lower level of audit quality for its clients compared to another Andersen office (Atlanta) and other Big Six offices in Houston. Krishan's study provides evidence that office-level characteristics within the same audit firm may lead to varying audit quality. However, he does not investigate what these office-level charactistics might be.

(PCAOB) audit inspection report indicates there was a failure in the enforcement of generally accepted accounting principles. While they do find a negative association between the receipt of such a report and the overall accruals quality of that audit firm's client base, they are only able to conclude this for clients of the audit firm (as a whole) because the PCAOB report does not identify the specific office or engagement where the problem occurred.[6] Furthermore, the name of the client company remains confidential making it impossible to independently infer the specific audit office in question. This is a major limitation because prior research has provided evidence that variation in audit quality does exist across offices (Choi et al. 2010; Francis et al. 2005; Francis and Yu 2009; Reichelt and Wang 2010; Reynolds and Francis 2000). Consequently, it is important to investigate whether a contagion effect exists at the office level, especially given that human capital characteristics of personnel across offices, even within the same audit firm, are likely very different.

In contrast, I test whether a contagion effect exists at the office-level based on the identification of one or more audit failures as having occurred in a specific audit office in a given fiscal year. This investigation requires me to devise a way to identify and measure audit failures. Palmrose and Scholz (2004) argue that a material restatement of originally audited financial statements is a strong indication that a particular audit was likely to have been of low quality. Kinney et al. (2004) use this argument and provide evidence that restatements involving GAAP violations are positively associated with

[6] Certain deficiencies in PCAOB reports are made public only after the auditor has been given one year to address the deficiency. Deficiencies that are made public immediately are those that evaluate the audit quality concerning work performed on a specific engagement, although the client name is not disclosed (Gunny and Zhang 2010). Importantly, those kept private for a year are those that concern the auditor's overall quality control system. Only then, at the end of one year, if this type of deficiency has not been rectified, is the information made publicly-available.

unspecified non-audit services. Their conclusion is that auditors that provide a large amount of non-audit services to a client are less independent concerning the external audit because of an increased economic dependence on the client.[7]

A company may restate net income for various reasons. Plumlee and Yohn (2010) identify four main reasons for restatements: internal company error, intentional manipulation, transaction complexity, and characteristics of accounting standards. They conclude that the majority (57 percent) of restatements are caused by internal company error followed by characteristics of the accounting standard used (37 percent), including lack of clarity in the standard and the need to use judgment during application of the standard. A company's external auditor bears some responsibility for allowing a company to issue financial statements that are misstated by a material amount due to any of these four determinants of restatements. This is the case because auditors have "a responsibility to plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or fraud," (SAS No. 1 1972). Consequently a high quality audit should, *ceteris paribus*, detect possible misstatements due to any of the reasons above at a higher rate compared to a low quality audit. This in turn suggests that the existence of a restatement is indicative that a relatively low quality audit was performed.

I predict that for auditor offices where at least one client subsequently restates net income downward by a material amount (an audit failure), audit quality is lower, on average, for all clients audited by that office in the same year in which the misstatement

[7] However, Kinney et al. (2004) find that tax-related services provided by the auditor are *negatively* associated with restatements and suggest that the increased financial reporting quality benefits due to tax-related services more than compensate for any economic dependence created by providing such services.

originally occurred. That is, the presence of one audit failure reveals a contagion within the office that affects the quality of other concurrent audits. Consequently, I state my first hypothesis in alternative form:

> **H1:** The existence of an audit failure in an auditor office is indicative of a contagion effect which results in other concurrent low quality audits in the office.

There also exists a large literature on differences in audit quality between Big Four and non-Big Four auditors. It is clear from this literature that differences in audit quality exist when comparing Big Four and non-Big Four accounting firms, with Big Four auditors exhibiting higher audit quality (Francis 2004; Francis 2011). Of importance to my study are specific differences in the training of audit personnel and quality-control procedures between Big Four and non-Big Four accounting firms. Specifically, larger Big Four auditors possess stronger incentives to implement in-house personnel training and quality-control monitoring procedures to protect against a reputation-damaging audit failure (DeAngelo 1981). They also possess greater resources with which to implement training and monitoring procedures given their size. Consequently, it is less likely that any one specific audit failure within a Big Four office is indicative of a contagion effect of poor audit quality for other concurrent clients of the same office. This in turn makes it *more likely* that any one specific audit failure in a Big Four office is due to engagement-specific or idiosyncratic characteristics of a specific audit rather than a systemic contagion effect throughout the auditor office. This leads to my second hypothesis, stated in alternative form:[8]

[8] Some research has argued that there is a selection bias when comparing audit quality of Big Four clients to non-Big Four clients as the choice of which type of auditor to hire may be contingent on company-specific accounting characteristics that affect audit quality and/or audit pricing (Chaney et al. 2005). This is a limitation of investigating H2 as I am analyzing the contagion effect in non-Big Four compared to Big

H2: There is less contagion in Big Four offices than in non-Big Four offices when an audit failure occurs.

Given the results in Francis and Yu (2009) and Choi et al. (2010) that audit quality is higher for larger Big Four auditor offices, it is likely that the existence of an audit failure in a relatively large Big Four office is less indicative of a contagion effect of lower overall audit quality compared to a small auditor office. The logic leading to this hypothesis is the same as that for H2 in that larger offices of Big Four auditors possess more resources to ensure that high audit quality is implemented for all engagements. This leads to my third hypothesis, stated in alternative form:

H3: There is less contagion in large Big Four offices than in small Big Four offices when an audit failure occurs.

Finally, the literature on auditor industry expertise finds that office-specific industry expertise is an important determinant of engagement-level audit quality (Reichelt and Wang 2010). However, audits at the office level are conducted for clients that operate both within the office's areas of industry expertise as well as in other industries. Furthermore, the number of audits where the office is an industry expert, as a percentage of the total number of audits in the office, likely varies across offices. In offices where the vast majority of audits are in the office's areas of industry expertise, engagement personnel are more able to apply their industry-specific knowledge and

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Four offices. Consequently, I cannot rule out that results for H2 are affected by the selection bias problem. I do not perform analyses that attempt to statistically control for the selection bias, such as instrumental variables methods, as research argues these methods are extremely difficult to implement appropriately in an accounting setting (Francis et al. 2010; Larcker and Rusticus 2010). However, I note that since the remaining three hypotheses do not compare non-Big Four to Big offices, the potential threat of selection bias does not affect these analyses (H1, H3 and H4 compare offices of Big Four auditors where an audit failure has occurred to Big Four offices where no audit failure has occurred. Similarly, non-Big Four offices with audit failures are compared to non-Big Four offices without audit failures. While the regression models pool both auditor types, the interaction variables effectively split the sample so that these within-auditor office comparison are possible).

human capital to the office's overall client portfolio which should result in high quality audits. In contrast, in offices where relatively few audits are conducted within the office's areas of industry expertise, audit personnel cannot make use of their industry-specific knowledge as often. This leads to my fourth and final hypothesis stated in alternative form:

> **H4:** There is less contagion in a Big Four office where most audits are in the office's areas of industry expertise, compared to Big Four offices where fewer audits are conducted in the office's areas of industry expertise.

I test for a contagion effect by comparing the quality of clients' audited earnings in those offices with an audit failure, with the quality of clients' earnings in those offices with no audit failures. Earnings are jointly produced by the client and the auditor (Antle and Nalebuff 1991). Clients are responsible for preparing the financial statements in accordance with GAAP (generally accepted accounting principles), and the auditor's role is to enforce compliance with GAAP and to require changes be made if necessary to conform to GAAP. If the client refuses, then a qualified audit report is required. However, since the SEC does not accept an audit report with a GAAP qualification, the client and auditor must resolve disagreements through a negotiation process that results in the final audited earnings number.

The research design linking statistical properties of earnings with auditing can be described as follows (Francis 2011):

$$\text{Earnings Quality} = f(\text{Audit Attributes} + \text{Controls})$$

Earnings quality is measured by cross-sectional variation in statistical properties of earnings. Following prior research, I examine systematic variation in abnormal or discretionary accruals, and earnings are assumed to be of higher quality when

abnormal/discretionary accruals are smaller in magnitude, *ceteris paribus*. In my study, the audit attribute tested is whether the engagement office has an audit failure as evidenced by a client restatement. A contagion effect is evidenced if earnings quality is lower (larger accruals) on average for clients in offices with an audit failure, compared to those clients in offices with no audit failure. To summarize, earnings quality metrics are not a direct measure of audit quality. But given that earnings are jointly produced by clients and auditors, systematic cross-sectional differences in the statistical properties of earnings can be used to infer differences in the underlying quality of audits based on auditor characteristics.

Chapter 3

Sample, Research Design and Descriptive Statistics

3.1 Sample

As described in detail in the next sub-section, I define an audit failure as occurring in an office when there is a material downward restatement of net income by a client subsequent to the statutory audit. The year of the audit failure is the year in which the misstated earnings were *originally* issued. I use the Compustat Unrestated U.S. Quarterly file to obtain originally released as well as subsequently restated accounting data in order to identify restatements and the year of the original misstatement.[9] This database provides originally-reported quarterly financial statement data, including net income, and many of the data items available in the Compustat Fundamentals Quarterly and Annual Files. The Unrestated Quarterly file also includes the most current restated values for each data item. Therefore, one can compile quarterly data, both for the original unrestated data as well as the currently reported restated data (if any restatement was made) alongside each other to determine whether a company has issued a restatement subsequent to its statutory audit. For companies where no restatement took place, the data value is exactly the same in both the unrestated and restated item columns. A company's annual earnings (both unrestated and restated) is computed by summing the four quarters of the fiscal year. The database does not indicate when the restatement was subsequently made. However, for my purpose this does not matter since I am only interested in determining the year in which the restated earnings were *originally* issued as this is the

[9] Studies that use the Compustat Unrestated Quarterly file to obtain originally released accounting data include Bronson et al. (2010), Price et al. (2010) and Comprix et al. (2010), among others.

point in time when the audit failure historically occurred. To summarize, my treatment observations are those concurrent firm-year observations in offices where there was an audit failure, and the control sample comprises those firm-year observations in offices where there was no audit failure.

My sample begins in the year 2000 as data on the specific auditor office location that performed the external audit for a company is not available in the Audit Analytics database until this year. I end the sample in 2006 to ensure that the vast majority of subsequent restatements are reflected in the data. For example, a client company that restates fiscal year 2006 financial statements may not do so until, say, 2008. Therefore, including the most recent few years where originally released financial data is available (2007-2009) may classify companies that subsequently go on to restate, say in 2011, as non-restating companies.[10] I significantly reduce this possible important misclassification by limiting my sample to the years 2006 and earlier.

Table 1 presents the sample selection. There are 70,661 annual firm-year observations in the Compustat Fundamentals file for the years 2000 through 2006. I delete 19,957 financial and utility companies due to the specific operating and accounting

[10] I choose to cut off the sample at 2006 based on a significant drop in the number of restatements beginning in 2007. For example, the percentage of firms that restate net income drops from about 15 percent during the years 2004 through 2006 to 11 percent in 2007 and as low as seven percent in 2009. Furthermore, the percentage of auditor offices that have at least one client that restates net income drops from about 73 percent in the years 2004 through 2006 to about 61 percent in 2007 through 2009. In a report issued by Audit Analytics, Cheffers et al. (2010) reports a drop in restatements beginning in 2007 and continuing through 2009. However, these statistics reflect the number of restatements issued within a calendar year regardless of the original corresponding company year-end. Therefore, even though there has clearly been a drop in restatements in recent years, it is still not possible to infer from the Cheffers et al. data whether a sample that includes 2007 through 2009 fiscal year-ends successfully identifies most or all restating companies for those fiscal year-ends. Finally, Cheffers et al. (2010) show that the average time lag between the original financial statement release and a restatement during the years 2005 to 2007 is about 700 days, or roughly two years. Therefore, cutting off my sample in 2006 provides confidence that I am classifying the vast majority of restating and non-restating companies accurately.

characteristics of these firms. CIK numbers used to merge accounting data with auditor office location information drawn from Audit Analytics are missing for 5,442 observations, while the specific auditor office location data is missing in Audit Analytics for 10,875 observations. Finally 11,579 observations are deleted due to missing information necessary to compute firm-level accounting variables, including discretionary accruals and stock price based variables. The final sample is comprised of 22,808 firm-year observations of 5,073 unique companies during the 2000 through 2006 time period.

Table 2 presents the sample of total auditor office locations for Big Four and non-Big Four accounting firms during each sample year. The totals indicate that roughly half of the auditor offices are from each auditor type with some variation from year to year. There are a total of 2,067 (2,038) auditor office-year observations of non-Big Four (Big Four) auditors over the entire sample period and an average of 295 (291) offices per year. As discussed next, audit failures are measured at the auditor office level for each fiscal year using the Compustat year convention.

3.2 Audit Failures within an Auditor Office

I test if an audit failure in an auditor office during a particular fiscal year is indicative of a contagion effect on concurrent clients within that same office/year. My specific measure of an audit failure involves identifying whether one or more clients of a specific auditor office in a given year restate net income by a material amount subsequent to the audit. Palmrose and Scholz (2004) argue that the existence of a restatement implies that the original audit of a particular company's financial statements was of low quality. Consequently, I calculate the percentage restatement of a company's annual net income

by measuring the dollar value difference in net income between the originally released financial information and the most recent, restated net income number. I then scale this by the absolute value of the originally released net income number to obtain a restatement percentage, either positive or negative.[11] I do *not* consider restatements of net income due to a merger or acquisition to be an audit failure.[12]

It should be noted that to the extent a restatement is the result of something other than a low quality audit, I am biasing against finding a significant result as such a classification increases the noise in my measure of audit failures. It is, of course, also possible that some low quality audits, or audit failures, are not being identified as such under my definition because the company does not subsequently issue a restatement even in the presence of an (unobservable) low quality audit. This also adds noise to the measurement of audit failures and biases against finding a statistically significant association between the existence of an audit failure in an auditor office and a contagion effect throughout that office.

I define an audit failure as having occurred when a client company restates net income *downward* by at least two percent of the originally reported value.[13] The audit

[11] Scaling by the absolute value of the originally release net income value ensures that all decreases (increases) in net income due to the restatement are calculated to be a negative (positive) percentage restatement.

[12] I identify mergers and acquisitions using the Compustat Fundamental Annual file variables Acquisition Method (ACQMETH), the measurement the sum of all special items after taxes that correspond to an Acquisition or Merger (AQA), and the measurement of cash outflow of funds used for and/or the costs relating to the acquisition of a company in the current fiscal year (AQC). If the field for ACQMETH contains an acquisition method code, or if either AQA or AQC contain a non-zero value, this indicates the presence of a merger or acquisition for a company during a fiscal year. I classify such observations as an M&A and do not consider such restatements to be an audit failure.

[13] A restatement may have occurred for any of the company's four fiscal quarters for a fiscal year. Quarter-end financial statements for the first three quarters are often reviewed instead of audited However, given that a public company's fiscal year-end financial statements are always audited, and given that fiscal year-

failure is attributed to the year in which the restated earnings were *originally* issued. I also consider minimum restatement thresholds of five and 10 percent in addition to the two percent threshold to ensure that my results are robust to these different materiality levels. Downward restatements indicate that the company's originally released net income was "too high" as originally audited. Given that auditors are concerned with overstatements of net income much more than understatements due to liability concerns (Basu 1997; Kothari et al. 1989; Skinner 1994), and that the existence of income-increasing compared to income-decreasing accruals is more likely to result in auditor reporting conservatism (Francis and Krishnan 1999), I consider only an overstatement of originally reported net income as an audit failure. I note that while I consider only negative, or downward, restatements to be an audit failure in my main analyses, all results are qualitatively the same, and often stronger, if I consider both downward and upward restatements of net income to be an audit failure.

Auditor office locations that have one or more clients with a downward restatement in net income for a particular year are coded one for the variable AUD_FAIL_X, where X indicates the particular percentage restatement threshold being used in a particular model (i.e. X = 2, 5 or 10 percent downward restatement of net income). Auditor offices where zero clients restate net income downward by the threshold amount in a particular year are coded AUD_FAIL_X = 0.

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end net income includes cumulative net income for all four fiscal quarters, each quarter is, in effect, audited at year-end. Furthermore, given that I analyze restatements that occur subsequent to a company's original fiscal year-end audit, a restatement of net income for any of the company's fiscal quarters can be considered a restatement of *audited* (instead of merely reviewed) financial statement numbers.

The year of an audit failure is recorded as the Compustat fiscal year during which the client's restated net income was *originally* reported in the 10K. This is important as I am testing whether the existence of an audit failure in a given year for an auditor office is indicative of other lower quality audits throughout that office within the same year (i.e. a contagion effect).

Table 3 presents the number of downward restatements at threshold levels of two, five and 10 percent of original net income for auditor office-year observations. For example, out of the total of 2,067 (2,038) auditor-office-year observations of non-Big Four (Big Four) auditors, 277 (448) observations have exactly one client that subsequently issues a downward restatement of two percent or more of originally reported net income. The number of material restatements within offices during a year decreases monotonically for both auditor types and across all three restatement thresholds. Overall, about 17 percent (37 percent) of non-Big Four (Big Four) auditor office-year observations have one or more clients that restate net income downward by two percent or more, indicating that this is not an unusual occurrence.

Table 4 presents descriptive statistics on the distributions of both the number of client restatements and the total number of audits for auditor-office-year observations (i.e. n = 2067 and 2038). Only restatements at the two percent threshold are reported for brevity. The first two columns show that the mean number of client restatements in non-Big Four (Big Four) offices is 0.23 (0.66), while the maximum number is 5 (13). The third and fourth columns show that the mean number of audits within non-Big Four (Big Four) offices is 7.25 (14.94), while median values for each are 4.00 (8.00). Finally, the last two columns present the distribution for the number of restatements as a percentage

of total audits within an office. On average, 2.5 (4.1) percent of non-Big Four (Big Four) client companies restate earnings subsequent to the original audit, which is consistent with prior research on restatements. The 90th percentile values are 8.3 (12.9) percent. The maximum values of 100 percent reflect extremely small offices where all clients subsequently restate earnings. These extremely small offices are deleted in analyses that are described in more detail in the Sensitivity Analysis section near the end of the study.

3.3 Empirical Model

The following model is estimated to test if a contagion effect exists in auditor offices:

$$\begin{aligned}\text{ABS\_DISC\_ACC or DISC\_ACC} = {} & \beta_0 + \beta_1 B4 + \beta_2 AUD\_FAIL\_X + {}_3 B4*AUD\_FAIL\_X \\ & + \beta_4 OFFICE\_SIZE + \beta_5 RISK\_PORT + \beta_6 CITY\_IND\_EXP + \beta_7 NAT\_IND\_EXP \\ & + \beta_8 INFLUENCE + \beta_9 SIZE + \beta_{10} LAG\_TOT\_ACC + \beta_{11} CFO + \beta_{12} CFO\_VOL \\ & + \beta_{13} SALES\_GROWTH + \beta_{14} SALES\_VOL + \beta_{15} PPE\_GROWTH + \beta_{16} LEV \\ & + \beta_{17} MB + \beta_{18} RETURN + \beta_{19} RET\_VOL + \beta_{20} SHARE\_ISSUE + \beta_{21} LOSS \\ & + \beta_{22} LITIGATE + \beta_{23} BANKRUPTCY + \beta_{24} \#\_OPER\_SEGS + \beta_{25} \#\_GEO\_SEGS \\ & + \text{Industry Fixed Effects} + \text{Year Fixed Effects} + \varepsilon \end{aligned} \quad (1)$$

where ABS_DISC_ACC (DISC_ACC) is the absolute value (signed value) of a company's discretionary accruals in year t, controlling for concurrent performance using a modified Jones model (Jones 1991; Dechow et al. 1995; Kothari et al. 2005). I infer audit quality based on client companies' earnings quality, measured as a company's level of discretionary accruals (ABS_DISC_ACC and DISC_ACC), similar to prior research (Francis et al. 1999a; Francis and Yu 2009; Reichelt and Wang 2010). The calculation of the discretionary accruals variables is detailed in the next sub-section. I analyze both absolute discretionary accruals and income-increasing discretionary accruals because

Hribar and Nichols (2007) demonstrate that the analysis of absolute accruals may be problematic.[14] The variable B4 equals one when a company is audited by a Big Four auditor in year t, and zero otherwise. The variable AUD_FAIL_X is as previously defined.

I control for auditor office characteristics as prior research shows these to be important. For example, office size is controlled for because Francis and Yu (2009) and Choi et al. (2010) show that Big Four office size is negatively associated with client discretionary accruals. Consistent with their measurement, the variable OFFICE_SIZE is the natural log of the total dollar value of audit fees charged by an auditor office in a year. A dichotomous version of this variable is also used as a test variable in Tables 12 and 13 to investigate whether auditor office size affects the extent to which an audit failure is indicative of a contagion effect in Big Four offices (test of H3).[15]

I control for the overall client risk portfolio within an auditor office (RISK_PORT) to mitigate the concern that client-specific characteristics may be driving either the likelihood that at least one restatement occurs within an office, or the level of discretionary accruals of those clients, or both. I compute an office's risk portfolio by first calculating the mean level of client assets, leverage, and return on assets within each

[14] Hribar and Nichols (2007) show that tests of absolute discretionary accruals are subject to a correlated omitted variable problem that signed accruals are not. They also find that both absolute and signed accruals are correlated with companies' sales volatility and cash flow volatility. Therefore, I control for both of these variables in all analyses.

[15] I note that OFFICE_SIZE is often not significant in Tables 4 through 7, which is not consistent with Francis and Yu (2010). However, they do not include the variable RISK_PORT in their models, which shows an untabulated correlation of -.54 with OFFICE_SIZE. If RISK_PORT is left out of my analyses, OFFICE_SIZE is often negative and significant, which is consistent with Francis and Yu (2010). This suggests that the high correlation between the two variables may be driving the insignificant coefficient on OFFICE_SIZE in my analyses.

office-year, similar to prior research (Johnstone and Bedard 2004).[16] I then standardize these mean levels so as to have a mean of zero and a standard deviation of one (for each variable) so as to not under/over-weight any one variable over the remaining two. Finally, I add together the standardized mean values of assets and return on assets, and subtract the mean value of leverage, and then multiply this sum by -1 (so that a higher value reflects a riskier portfolio) to obtain the final value of RISK_PORT. I note that all results are very similar if median, instead of mean, values are used instead. I do not make a prediction for the sign on this variable.

I also include an additional auditor variable for the test of H4 which examines if the percentage of audits conducted within an auditor office where that office is the city-level industry expert has an impact on the contagion effect (test of H4). The variable OFFICE_EXP_% is measured as the number of audits conducted in a Big Four office in a year where the Big Four office is the city-level industry leader, scaled by the total number of audits conducted by the office in the year. A dichotomous version of this variable is created by splitting the sample at the median value for the test of H4 in Tables 14 and 15.

Engagement-specific auditor industry expertise is controlled using both city- and national-level measures in which the auditor with the largest dollar amount of audit fees in an industry (either at the city-level or nationally) is considered the industry expert (Francis et al. 2005; Reichelt and Wang 2010). Consistent with Francis et al. (2005) only Big Four auditors are considered to be city and/or national industry experts. City industry expertise is based on each audit firm's market share of audit fees within a two-digit SIC

[16] Johnstone and Bedard (2004) include additional variables in calculating their risk portfolio measure. However, these variables were obtained through a questionnaire specific to their study. I use variables that are available in Compustat. Further, Johnstone and Bedard (2004) do not include client assets as a risk variable, although they do include it as a control variable in their analyses.

category within a specific city. Following Francis et al. (2005) and Reichelt and Wang (2010), I define a city using the Metropolitan Statistical Area (MSA) as classified by the U.S. Census Bureau. Auditor cities are collected from Audit Analytics and are then categorized by MSA using the U.S. Census Bureau's MSA cross-map.[17] The national industry expertise variable is based on each audit firm's market share of audit fees in the United States within a two-digit SIC category. Both city and national industry expertise are recalculated each year.

The variable CITY_IND_EXP is coded one if the auditor on a specific client engagement is the city-specific market share leader in terms of audit fees in a given year and NAT_IND_EXP is coded one if the auditor is the national market share leader in terms of audit fees in a given year. Based on prior research I expect CITY_IND_EXP will be negatively associated with discretionary accruals (Reichelt and Wang 2010). Results on national industry expertise are mixed in prior research so I do make a prediction for NAT_IND_EXP.

Firm-level variables are included in all analyses to control for the various characteristics that affect a company's level of discretionary accruals. The variable INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total fees charged by the auditor office in a year. Francis and Yu (2009) include this variable to control for the possibility that a specific client that provides a relatively high percentage of total fees to an auditor office may affect auditor objectivity, and thus, audit quality for that client. In most of their analyses

[17] The U.S. Census Bureau's MSA cross-map (2008 definition) is available at the following web-site: http://www.census.gov/population/www/metroareas/metroarea.html. For cities not listed on the cross-map, I hand-collect the closest MSA using the 2008 map available at the web-site listed above and Google Maps. I thank Brett Kawada and Sarah Stein for their help in this hand collection.

this variable is not significant so I do not predict a sign for the coefficient on INFLUENCE.

The variable SIZE is the natural log of a company's total assets in year t while the variable LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is the company's cash flows from operations in year t scaled by total assets and CFO_VOL is the standard deviation of CFO from years t-2 through year t. SALES_GROWTH is the one year growth in sales from year t-1 to year t and SALES_VOL is the standard deviation of sales from year t-2 through year t. PPE_GROWTH is the one year growth in net property, plant and equipment from year t-1 to year t, and LEV is the company's total debt scaled by total assets in year t. MB is a company's market value of equity scaled by book value of equity in year t and RETURN is the company's one year stock price return, including dividends, during year t-1. RET_VOL is the standard deviation of the 12 monthly stock price returns during year t, and SHARE_ISSUE is a dichotomous variable that equals one if the company issues additional stock during year t, and zero otherwise. The variable LOSS equals one when a company's net income is below zero in year t, and equals zero otherwise. The variable LITIGATE equals one for companies in industries with a high threat of litigation (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370) as in Francis and Yu (2009). The variable BANKRUPTCY is the Altman Z-score as used in Francis and Yu (2009) and is included to control for the possibility that a company may have problems continuing as a going-concern, which could affect discretionary accruals.[18]

[18] Francis and Yu (2009) calculate the Altman-Z score, based on Altman (1983) as [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)].

Finally, #_OPER_SEGS (#_GEO_SEGS) is the total number of a company's operating (geographic) segments.[19] Based on prior research I expect SIZE, LAG_TOT_ACC, CFO, LOSS and BANKRUPTCY will be negatively associated with discretionary accruals while I expect CFO_VOL, SALES_GROWTH, SALES_VOL, PPE_GROWTH, MB, RET_VOL and LITIGATE will be positively associated with discretionary accruals (Choi et al. 2010; Francis and Yu 2009; Hribar and Nichols 2007; Reichelt and Wang 2010). I do not predict a sign for LEV, RETURN, SHARE_ISSUE #_OPER_SEGS and #_GEO_SEGS due to absent or conflicting results in prior literature (Francis and Yu 2009).[20]

3.4 Discretionary Accruals

Firm-year discretionary accruals are calculated with a modified Jones model (Dechow et al. 1995; Jones 1991) controlling for concurrent performance (Kothari et al. 2005) within industry-year groups for separate samples of Big Four and non-Big Four clients, where industries are defined by a company's 2-digit SIC code. I require a

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[19] I use the Compustat Segments file to calculate these variables. When segment data does not exist in the file for a company I assign a segment value of one. Results that exclude these two variables are very similar to those presented.

[20] Francis and Yu (2009) also include a variable TENURE that indicates whether a company has been audited by the same audit firm for at least three years, based on Johnson et al. (2002). They are able to include this variable for their entire sample because they begin their analysis in the year 2003. However, given that this variable requires two years of lagged data to compute, its inclusion would force me to eliminate observations in the years 2000 and 2001 because specific auditor information is not available in Audit Analytics prior to this date. Given the effect on sample size, I do not present analyses including TENURE. However, I note that all results are qualitatively the same when TENURE is included and the sample size is correspondingly reduced.

minimum of 10 observations within a grouping and estimate the following model separately for each group to calculate discretionary accruals:[21]

$$TOT\_ACC = \alpha_0 + \alpha_1(1/ASSETS) + \alpha_2(\Delta SALES - \Delta AR) + \alpha_3 PPE + \alpha_4 ROA + \varepsilon \quad (2)$$

In all analyses, the variable ABS_DISC_ACC is the absolute value of the observation-specific residual ε from equation (2) and the variable DISC_ACC is the signed value of the residual ε. For DISC_ACC I analyze only income-increasing discretionary accruals because auditors are typically more concerned with overstatements of net income more than understatements due to liability concerns (Basu 1997; Kothari et al. 1989; Skinner 1994).[22] The variable TOT_ACC is calculated as a company's net income before extraordinary items less cash flows from operations. ASSETS is a company's total assets at the end of year t-1, SALES is a company's sales in year t and t-1 scaled by lagged total assets, AR is a company's net total receivables at the end of year t and t-1 scaled by lagged total assets, PPE is net property, plant and equipment at the end of year t scaled by lagged total assets, ROA is net income in year t scaled by lagged total assets. I estimate equation (2) separately for clients of Big Four and non-Big Four accounting firms (for separate industry-year subsamples) as these clients exhibit different operating and accounting characteristics (Francis et al. 1999a).

[21] Observations for which any value of the variables in equation (2) is above the .99 value or below the .01 value of all companies are excluded from the calculation of parameter values for equation (2) to mitigate the effect of these extreme values on the calculation of expected accruals. However, these companies are included in the final sample of 22,808 company-year observations.

[22] Analyses that include only companies that exhibit income-*decreasing* discretionary accruals show results that are qualitatively similar to those in Tables 4 through 7 in that clients' income-decreasing discretionary accruals are more negative (i.e. are of lower quality) when audited by an office where at least one audit failure occurs. The results in Table 7 on industry expertise are less clear with regard to income-decreasing discretionary accruals.

I estimate equation (2) using a sample of firm-year observations for companies that *do not* restate their originally reported net income subsequent to the financial statement audit. In other words, in calculating the coefficient parameters for equation (2) I exclude those firm-year observations that subsequently restate net income by any amount because the restatement is evidence that overall accruals included in the originally audited net income number were either over- or under-stated.[23] Including companies with misstated earnings could bias the calculation of the coefficient parameters. I do, however, calculate discretionary accruals for restatement firms using the coefficient parameters from equation (2) that are derived using the non-restatement sample. I calculate discretionary accruals for restatement firms based on these firms' originally released financial statement numbers that are available in the Compustat Unrestated Quarterly file. For all non-restatement companies, I use data from the Compustat Fundamental Annual file.

3.5 Descriptive Statistics

Table 5 presents the distribution of all variables used in the study. ABS_DISC_ACC has a mean (median) value of .078 (.049) which is similar to other studies (Reichelt and Wang 2010; Reynolds and Francis 2000). The mean value of DISC_ACC for all observations is zero by construction as it is a residual from equation 2 (Kothari et al. 2005), and the median value is also close to zero (.004). The dichotomous variable AUD_FAIL_2 equals one when at least one client restates net income downward

[23] It is of course also possible that cash flows were incorrectly recorded in some way by the company that led to the subsequent restatement. However, Cheffers et al. (2010) show that the percentage of restatements that are due to cash considerations averages 4.8 percent from 2001 to 2006, indicating that this is a relatively uncommon occurrence.

by two percent or more within an auditor-office in a year, and zero otherwise. The mean value of .269 indicates that an audit failure (at the two percent threshold) occurs in 26.9 percent of auditor-office-year observations. This value is calculated over the total number of auditor-office-year observations (4,105) instead of over the entire sample of company-year observations to provide a meaningful interpretation of the frequency of audit failures across offices. The mean values of AUD_FAIL_X decrease as the threshold level rises (to five and then 10 percent).

The variable PERC_FAIL_X is a second way to measure the extent of audit failures within an auditor office. PERC_FAIL_2 represents the percentage of total audit clients in a year within an office that restate net income downward by at least two percent. This measure considers the frequency or number of restatements within an auditor office relative to its clientele. It seems reasonable that a single restatement in an office with 500 clients is much less suggestive of a contagion effect than a single restatement in an office with only 5 clients. PERC_FAIL_5 and PERC_FAIL_10 are calculated in the same manner except that only downward restatements of either five or 10 percent are considered when calculating the percentage of restatements in an auditor office. The mean value of PERC_FAIL_2 is .029 indicating that almost three percent of an office's clients subsequently restate net income downward by at least two percent. Again, these values are lower as the restatement level increase to five and 10 percent. The regression analyses use a ranked version this variable that ranges from one to 10 based on the actual values of PERC_FAIL_X. Ranks are formed so that an equal number of observations are contained within each of the 10 ranks.

Approximately 77 percent of companies in the sample use a Big Four auditor, which is consistent with prior research (Francis et al. 1999a). OFFICE_SIZE is presented in Table 5 in raw form and is the total dollar amount of audit fees charged by an auditor office in a year in $thousands. The mean (median) value of audit fees charged is about $6.1 million ($722,000). The mean (median) values of the variable that measures an office's risk portfolio (RISK_PORT) are .668 (-.041). The variable OFFICE_EXP_% is the percentage of total audits conducted by an office in a year where the auditor is the city-specific industry leader. Therefore, OFFICE_EXP_% is a continuous variable that is specific to each auditor-office-year observation. The mean (median) values for OFFICE_EXP_% over the 2,038 Big Four auditor-office-year observations is .691 (.750). This indicates that in the average Big Four office, the auditor is the city-level industry expert on a little over two-thirds of its audit engagements. Non-Big Four offices are excluded from this as well as all auditor expertise calculations as they are rarely, if ever, determined to be the expert within any industry (Francis et al. 2005).

The variable CITY_IND_EXP is a firm-year specific variable that takes on a value of one when a company is audited by the city-level industry leaders in a year, and zero otherwise. The mean value of CITY_IND_EXP over the 17,408 Big Four client company observations is .509, indicating that about half of all Big Four audit engagements in the sample are conducted by a city-level industry expert. The mean value of NAT_IND_EXP is .232 indicating that for about 23 percent of Big Four audits, the auditor is classified as the national industry expert.

The variable INFLUENCE has a mean (median) value of .235 (.066) indicating that the average client company represents 25.2 percent of the total fees charged to all

clients of an office. The median value is only 6.6 percent which indicates that this variable is skewed and that some particularly highly influential clients are driving the mean. The company-level variable SIZE is also presented in raw form in $millions and the mean (median) value of companies' total assets is about $1.2 billion ($162 million). The mean (median) values for LAG_TOT_ACC are -.276 (-.060). The mean (median) value of CFO, a company's cash flows from operations, is -.079 (.051), while the same values for CFO volatility (CFO_VOL) are .190 (.096). Companies exhibit a mean (median) growth in sales over the previous year (SALES_GROWTH) of about 18 percent (7 percent) while the same values for sales volatility (SALES_VOL) are .940 (.152). The mean (median) values for growth in net property, plant and equipment from the previous year (PPE_GROWTH) is about 10.5 (0) percent, while companies are levered at a mean (median) value of 25.7 (17.0) percent of total assets. Companies' mean (median) market-to-book ratio (MB) is about 2.7 (1.7), while the stock price return including dividends (RETURN) during year t-1 shows values of 24.3 (3.9) percent. The mean (median) values for the standard deviation of a company's twelve monthly stock returns during year t (RET_VOL) is .170 (.129), and about 73 percent of companies issue new shares (SHARE_ISSUE) during year t. Net losses are recorded by about 43 percent of companies while about 30 percent of companies are in high litigation industries. The mean (median) value of the Altman Z-score (BANKRUPTCY) is .142 (1.715). Finally, on average companies operate in 1.0 operating segment and 1.2 geographic segments.

Table 6 presents univariate results comparing the mean and median values of companies' absolute and income-increasing discretionary accruals in Non-Big Four offices with at least one audit failure compared to offices with zero audit failures. The

values for AUD_FAIL_X=0 are the mean and median levels of client company absolute discretionary accruals (ABS_DISC_ACC) and income-increasing discretionary accruals (DISC_ACC > 0) audited by auditor offices with no audit failures in a year. AUD_FAIL_2, AUD_FAIL_5, and AUD_FAIL_10 present the same values for office-years with at least one audit failure at the two, five and 10 percent threshold levels, respectively. Therefore, the mean/median level of discretionary accruals in offices with at least one audit failure at each threshold level is compared to the mean/median level in offices with no audit failures. Results indicate that both the mean and median level of client discretionary accruals (both absolute and income-increasing) are significantly higher in non-Big Four offices with at least one audit failure compared to non-Big Four offices with no audit failures.

Table 7 presents mean/median values for Big Four offices and shows results that are very similar to Table 6. Taken together, the results in both Tables 6 and 7 provide preliminary univariate evidence that a contagion effect exists in both non-Big Four and Big Four auditor offices.

Untabulated (for brevity) Pearson and Spearman correlations indicate that the discretionary accruals variables often exhibit either negative or insignificant correlations with the six audit failure variables. I do note, however, that absolute discretionary accruals are positively and significantly ($p<.01$) correlated with all three PERC_FAIL_X variables. While the negative and insignificant results are somewhat surprising, these correlations do not consider other auditor- and company-specific factors that affect a company's level of discretionary accruals. The vast majority of the remaining correlations are all below .50 (except among the six audit failure measures) indicating

that multicollinearity is not likely to be of concern. This conclusion is supported by the VIF's in the regression model estimations which are less than 6.5, well below the threshold of 10 suggested in Kennedy (1992).

Chapter 4

Results

4.1 Tests of H1 and H2 – Contagion in non-Big Four and Big Four Auditor Offices

Table 8 presents the first set of regression results testing H1 and H2, where the dependent variable is a company's level of absolute discretionary accruals (ABS_DISC_ACC).[24] All models are significant at p<.01 with r-squares around 41 percent, similar to prior research that investigates the determinants of discretionary accruals (Reichelt and Wang 2010). These and all subsequent models include industry (based on 2-digit SIC codes) and year fixed effects, and t-statistics which are based on standard errors clustered at the auditor-office level.[25] Auditor and company-level control variables are generally consistent with predictions.

In Table 8, the positive and significant (p<.05) coefficients on AUD_FAIL_X in all three models indicate that clients audited by a non-Big Four auditor office where at least one audit failure occurred exhibit higher absolute discretionary accruals, on average,

[24] All models exclude some observations compared to the full sample of 22,808 firm-year observations. The reason for this is that, for example, in the first model that considers restatements at the two percent or greater threshold level, I drop offices where client restatements greater than zero but less than two percent exist, but where no restatements over the two percent threshold exist. Therefore, AUD_FAIL_X in the first model tests whether client absolute discretionary accruals are higher in offices with at least one audit failure of two percent or greater compared to offices with zero audit failures, *after excluding offices with client restatements only between zero and two percent.* Including these offices with between zero and two percent restatements would effectively consider these very low threshold restatements (between zero and two percent) as not being a restatement at all, which is obviously not appropriate. The same exclusion applies for the second model considering the five percent threshold (i.e. offices with *only* restatements between zero and *five* percent are excluded) as well as the third model considering the 10 percent threshold (i.e. offices with *only* restatements between zero and *10* percent are excluded).

[25] I cluster standard errors at the auditor-office level instead of the company level because my variables of interest vary at the office level, not the company level. Therefore, standard errors that are not clustered may be inflated due to including multiple observations of the same auditor office in the sample. However, I note that if standard errors are clustered at the company level instead, all results are very similar in terms of the statistical significance on all variables.

compared to non-Big Four offices where no audit failures occurred. These results support H1 and provide evidence that a contagion effect exists in non-Big Four auditor offices.

The interaction coefficient B4*AUD_FAIL_X measures the *incremental* effect of the existence of a contagion effect in Big Four auditor offices relative to non-Big Four offices (test of H2). The coefficient is negative, but insignificant, in all three cases, which indicates that the contagion effect is no different, on average, in Big Four compared to non-Big Four auditor offices. Thus, H2 is not supported.

To test whether an overall contagion effect exists in Big Four offices (H1) I calculate the F-statistic on the combined coefficients AUD_FAIL_X + B4*AUD_FAIL_X for all model estimations. All of the combined coefficients are negative and the F-statistics are significant ($p<.01$), which indicates that a contagion effect also exists, on average, *in Big Four offices* when considering client absolute discretionary accruals.

Table 9 analyzes whether these results hold when looking only at companies that exhibit positive, or income-increasing, discretionary accruals. Results for non-Big Four auditors are similar compared to Table 8 except that two of coefficients on AUD_FAIL_X are significant only at the .10 level. The remaining coefficient is not significant at conventional levels (although the p-value is very close to significance at .119) With respect to Big Four auditors, the interaction coefficients are, again, not significant. Finally, the significant ($p<.01$) F-statistics in all models indicate again that a contagion effect exists overall in Big Four auditor offices. Later in the study I investigate more specific differences across Big Four offices that may affect the existence or magnitude of the contagion.

Taken together the results in both Tables 8 and 9 indicate that contagion occurs in the offices of both non-Big Four and Big Four accounting firms. These results are robust to alternative definitions of an audit failure based on restatement thresholds of two, five and 10 percent. I conclude that the presence of a downward material client restatement of net income provides a method for assessing the quality of other audits in an auditor office for the same year by analyzing very simple, publicly-available information.

The results in Tables 8 and 9 are also economically significant. Given that AUD_FAIL_X is an indicator variable that takes on a value of either zero or one, the results in the first model of Table 8 indicate that a non-Big Four client company's level of absolute discretionary accruals is higher by a magnitude of .008 when audited by an office where at least one audit failure occurs. This magnitude represents an increase of 5.2 and 11.1 percent over non-Big Four client companies' *mean* values of absolute discretionary and total accruals, respectively.[26] Similarly, the .008 magnitude represents a 9.4 and 9.9 percent increase over the *median* values of absolute discretionary and total accruals. For Table 9, the magnitude of the coefficient on AUD_FAIL_X in the first model of .007 represents a 5.2 and 9.7 percent increase over non-Big Four client companies' mean values of income-increasing discretionary and total accruals, respectively.[27] Similarly, the .007 magnitude represents a 7.8 and 8.7 percent increase over the median values of income-increasing discretionary and total accruals.

[26] The untabulated mean/median values of *absolute* discretionary and (total) accruals for non-Big Four client companies are .1550/.0852 and (-.0718/-.0809).

[27] The untabulated mean/median values of *income-increasing* discretionary accruals for non-Big Four client companies are .1336/.0902. See footnote 26 for mean and median values of total accruals for non-Big Four clients.

Finally, I calculate economic significance for Big Four auditor offices in both Tables 8 and 9 as well. The .007 magnitude on the combined coefficient (AUD_FAIL_X + B4*AUD_FAIL_X) in the first model in Table 8 represents an increase of 9.1 and 9.8 percent over Big Four client companies' mean values of absolute discretionary and total accruals, respectively.[28] Similarly, the .007 magnitude represents a 15.0 and 11.4 percent increase over the median values of absolute discretionary and total accruals. For Table 9, the magnitude of the coefficient on (AUD_FAIL_X + B4*AUD_FAIL_X) in the first model of .005 represents a 6.5 and 7.0 percent increase over Big Four client companies' mean values of income-increasing discretionary and total accruals, respectively.[29] Similarly, the .005 magnitude represents a 10.7 and 8.1 percent increase over the untabulated median values of income-increasing discretionary and total accruals.

In summary Tables 8 and 9 provide evidence that the existence of a contagion effect is statistically and economically significant in both non-Big Four and Big Four auditor offices. Further, the results are robust to the measurement of an audit failure at various restatement threshold levels.

4.2 Audit Failures as a Percentage of Office-Level Audit Engagements

Tables 10 and 11 present the exact same analysis as that in Tables 8 and 9 except the test variable for audit failures (PERC_FAIL_X) is calculated differently. PERC_FAIL_X is measured as the number of client downward restatements of net income of threshold level X in an auditor office scaled by the total number of audit

[28] The untabulated mean/median values of *absolute* discretionary and (total) accruals for Big Four client companies are .0770/.0467 and (-.0716/-.0616).

[29] The untabulated mean/median values of *income-increasing* discretionary accruals for Big Four client companies are .0768/.0469. See footnote 28 for mean and median values of total accruals for Big Four clients.

clients of the office in a year. This variable is then ranked from 1 to 10 so that an equal number of observations are within each of the 10 ranks. Results for both auditor types are almost exactly the same when comparing them to Tables 8 and 9. Therefore, I conclude that the results are largely the same, regardless of whether there is a single restatement or multiple restatements in an office for a given year.

4.3 Tests of H3 – Contagion Effect Based on Big Four Office Size

Tables 12 and 13 investigate whether the contagion effect in Big Four offices is affected by the size of the office (H3), and is motivated by the findings in Francis and Yu (2009, 2010) and Choi et al. (2010) that Big Four office size affects audit quality. Table 12 presents results on a sub-sample of Big Four clients of very large auditor offices compared to a sub-sample of Big Four clients in smaller offices. For this analysis I create an indicator variable LARGE_OFFICE. This variable is coded one for Big Four offices that are larger than the 75th percentile value of Big Four OFFICE_SIZE (audit fees of $11.8 million), and is coded zero otherwise. Therefore, I am comparing the largest quartile of Big Four auditor office size with the other 75 percent of offices. Partitioning at the 75th instead of the 50th percentile classifies fewer offices as being large and biases against finding a contagion effect in smaller offices.

In Tables 12 and 13, the variable AUD_FAIL_X tests if a contagion effect exists in the small Big Four offices. The interaction coefficient AUD_FAIL_X * LARGE_OFFICE tests the incremental difference within the largest offices (test of H3) and the F-statistic on (AUD_FAIL_X + LARGE_OFFICE*AUD_FAIL_X) tests if a contagion effect exists at all in the larger set of offices. The positive and significant ($p<.01$) coefficients on AUD_FAIL_X in Table 12 (absolute abnormal accruals) indicates

that a contagion effect exists in "smaller" Big Four offices. The results on AUD_FAIL_X are significant at p<.05 and p<.01 in Table 13 for income-increasing abnormal accruals. It is worth noting again that this set of "small" offices comprises 75 percent of all Big Four offices in the sample, suggesting that a contagion effect occurs in most Big Four offices.

The coefficients on the interaction terms are insignificant in four of the six models in Tables 12 and 13, and significant at the .05 and .10 levels in the other two models. On balance there does not seem to be a significant incremental difference between small and large Big Four offices in Tables 12 and 13. However, the insignificant (p>.358) F-statistics in all six models in Tables 12 and 13 indicate that no contagion occurs in the largest Big Four offices. This indicates that larger Big Four offices not only conduct audits of higher quality on average as shown by Francis and Yu (2009), but also that a contagion effect does not occur in the largest quartile of Big Four offices.

4.4 Tests of H4 – Contagion Effect Based on Big Four Office-Level Industry Expertise

Tables 14 and 15 present the results of testing if a contagion effect in a Big Four office depends on the percentage of audits performed in the office's area(s) of city-level industry leadership (H4). I analyze only city-level industry expertise because prior research shows that city-level rather than national-level leadership is the main determinant of auditor industry expertise (Francis et al. 2005; Reichelt and Wang 2010). For brevity, Tables 14 and 15 only test income-increasing discretionary accruals. The results are robust to testing absolute discretionary accruals.

The indicator variable HIGH_OFFICE_EXPERTISE in Tables 14 and 15 is coded one when the value of OFFICE_EXP_% for a Big Four office is greater than the median value of .75. [30] Therefore, the variable AUD_FAIL_X in all models tests if a contagion effect occurs in offices where the auditor conducts a relatively *low* percentage of audits in its areas of city-level of industry leadership, relative to the sample mean. The F-statistic on the sum of the coefficients (AUD_FAIL_X + AUD_FAIL_X * HIGH_OFFICE_EXPERTISE) tests if a contagion effect exists in offices where the auditor conducts a relatively *high* percentage of audits in its areas of city-level of industry expertise, relative to the sample mean.

The positive and significant ($p<.01$) coefficients on AUD_FAIL_X in all models indicates that a contagion effect exists in the Big Four auditor offices that conduct a relatively low percentage of audits in its areas of industry expertise. The insignificant ($p>.169$) F-statistics in all models indicate that no contagion occurs in Big Four offices where the auditor conducts a relatively *high* percentage of audits in its areas of city-level industry expertise. Thus, H4 is supported and provides evidence that the knowledge base and human capital of office personnel developed through auditing a more focused group of industries, mitigates the contagion effect.

As a sensitivity analysis, Table 15 investigates whether a contagion effect occurs for the largest 25 percent of Big Four offices when an office has a smaller percentage of audits in office's areas of industry expertise. This is important as prior research indicates that Big Four office size is an important determinant of audit quality (Francis and Yu

[30] I exclude all offices with less than 10 clients in the analyses in Table 7 to avoid the possibility that very small offices are significantly influencing the calculation of OFFICE_EXP_%. This is possible because a very small denominator (total number of clients) for this variable calculation could create very large expertise percentages and possibility bias results.

2009l Choi et al. 2010). The positive and significant (p<.01) coefficients on HIGH_OFFICE_EXPERTISE in all models indicates that a contagion effect does exist, even in very large Big Four offices, when the office makes relatively low use of industry expertise. However, the insignificant (p>.957) F-statistics on the combined coefficients in all models indicates that a contagion effect does *not* exist in these large offices when they make use of their industry expertise on a relatively high percentage of audit engagements. This indicates that industry-specific knowledge is an important determinant of audit quality, even in the largest Big Four offices.

4.5 Sensitivity Analyses

Another way to control for differences across auditor offices is to include auditor-office fixed effects, which control for systematic clientele differences across offices that affect the level of client discretionary accruals. This is an important control that mitigates the concern that a selection bias is driving results. All reported results are very similar after including office fixed-effects.

I also investigate if those outside the auditor office, including investors, are able to use the information contained in a restatement to infer something about the current level of audit quality for clients of that same office. If the contagion within an office persists over time for two or more years, outsiders can infer something about the current level of audit quality in an office based on restatements of past year financial statements. That is, if the office-level characteristics that lead to low audit quality in an office that are revealed by the existence of a restatement persist over time, this provides information on current audit quality. I test this in two ways. First I regress AUD_FAIL_X on lagged values (one through five year lags) of AUD_FAIL_X, the office-level control variables

use in the above analyses, as well as the office-year median level of all firm-specific control variables, as well as audit firm and year fixed effects. An *insignificant* coefficient on the lagged audit failure variable in this analysis would indicate that offices have, on average, only one year with an audit failure during my sample period and, thus, the contagion effect is not persistent over time. Performing these probit regressions, I find that the existence of at least one audit failure in years t-1 through t-4 are positive and significantly ($p<.01$) associated with the existence of at least one audit failure in year t, for both non-Big Four and Big Four offices. This provides some additional evidence on the existence of a contagion effect, as well as evidence that the effect is persistent over time within offices. Secondly, I regress the current level of company discretionary accruals on lagged AUD_FAIL_X. This analysis is the same in all respects to results in Tables 8 through 15 except for the replacement of AUD_FAIL_X at year t with AUD_FAIL_X at year t-1). Results indicate that at least one audit failure in year t-1 is positively and significantly ($p<.05$) associated with the level of companies' discretionary accruals (both absolute and income-increasing) in the current year. This provides more evidence that a contagion not only persists, but that this persistence provides useful information about current audit quality in an office. Furthermore, these tests provide some evidence that the national offices of audit firms are not making use of the information about audit quality contained in the existence of client restatements within a specific office. This suggests that audit firms may benefit by using my findings to direct additional quality-control resources to offices that exhibit a contagion effect.

Many non-Big Four accounting firms are comprised of only a few office locations. For example, untabulated analysis shows that out of the total of 2,067 non-Big

Four offices in the sample, 971 are from single-office audit firms. Therefore, it is possible that these very small audit firms are driving the results for non-Big Four auditors. In order to test whether the main results are sensitive to this I delete all observations where a company is audited by a non-Big Four audit firm with only one office location. I repeat this by deleting all audit firms with less than five offices. In both cases, all tabulated results are very similar, and often stronger, using this reduced sample.

Similarly, it is possible that auditor offices with very few clients are driving the results. To address this concern I delete all companies audited by a non-Big Four (Big Four) auditor office where the total number of clients of the office in a year is less than 2 (4). These client number values represent the 25^{th} percentile level for each auditor type (i.e. 25 percent of non-Big Four and Big Four auditor offices have less than two and four clients, respectively). Results are qualitatively the same compared to tabulated results.

There are instances where firms restate earnings due to an updated interpretation of an accounting standard. In this case, the restatement may not reflect an audit failure, *per se*. However, it is very difficult to obtain data on the exact reason for a restatement. It is, however, likely that offices with a relatively large number of restatements in a year are a reflection of an updated GAAP interpretation as many audits in an office are focused on a small number of industries (as reflected by the median value of .75 for industry-expertise usage reported earlier). Therefore, a way to mitigate this concern is to delete offices that exhibit a high number of client restatements in a year. I do this by deleting all observations from offices with more than two, as well as five, restatements. All results under both of these analyses are very similar.

Finally, I analyze whether a contagion effect still exists after the passage of the Sarbanes-Oxley act in 2002 given the law's significant effect on the audit profession in the U.S. I do this by repeating the analyses in Tables 8 through 11 on separate samples of non-Big Four and Big Four clients. I also add, in addition to AUD_FAIL_X and PERC_FAIL_X, an indicator variable POST that represents the post-SOX period of 2004 through 2006, as well as the interaction between the audit failure variables and POST.[31] In all cases untabulated results indicate that a contagion effect continues to exist within non-Big Four offices in the post-SOX period as the interaction coefficient that indicates whether a contagion effect is incrementally different in the post-period is never significant at the .05 level. Results for Big Four auditors are less clear. The interaction coefficient is negative and significant at the .05 level in nine of the 12 regressions in Tables 8 through 11. This indicates that Sarbanes-Oxley may have heightened awareness of quality-control issues within Big Four offices, leading to a reduced contagion effect. However, given the relatively short sample period of only three years in the post-SOX period, additional research is necessary to investigate whether this result is robust and whether any post-SOX effect that may exist continues in years subsequent to 2006, or whether it was a temporary effect due to the law's passage.

[31] I eliminate 2003 as this is the year in which SOX was first implemented.

Chapter 5

Conclusion

I investigate if an audit failure indicates whether there is a "contagion effect" in office-level audit quality. A contagion occurs if there is a systemically low level of audit quality in an office due to office-specific characteristics such as the level of human capital and quality control procedures. I test this by determining if the presence of at least one audit failure, measured as a downward restatement of net income by a client subsequent to the audit, indicates a systematic problem in the overall quality of concurrent audits performed in the same office in the same year the misstated earnings were originally reported.

I infer audit quality based on cross-sectional differences in clients' discretionary accruals. My findings indicate that in auditor offices where at least one audit failure in a year is identified, other clients of that office (for the same year) have a higher level of abnormal accruals compared to offices with zero audit failures. These results hold for offices of non-Big Four auditors, and for all but the largest quartile of Big Four offices. Further analysis shows that a contagion effect exists in all Big Four offices where the percentage of audits in the office's areas of city-level industry expertise is relatively low, regardless of office size. This suggests that a systematic problem in audit quality exists in all Big Four offices that make low use of industry-specific human capital.

My results should be of interest to those outside the auditor office such as regulators, standard setters, accounting firms and investors because I provide a method to infer the overall audit quality of an auditor office location through the use of easily

obtainable and publicly-available information. Further, I show that the contagion persists for four years in auditor offices, which also indicates the usefulness of my findings to outsiders. Regulators can use this to identify offices where audits are more likely to be of lower quality (and perhaps even below minimum standards). Standard setters may be able to use this information to implement auditing standards that better address the determinants of audit quality at the auditor office location. Accounting firms can benefit from this method as those in charge of quality-control processes in a firm's national office can use it to identify specific offices that may not be implementing the firm's quality-control procedures appropriately. Finally, investors may be able to use it as one piece of additional information with which to infer something about the earnings quality of a particular company based on the auditor office which performs the audit.

The study also has some important limitations. First, my measure of an audit failure within an auditor office relies on the assumption that every company that "should" restate earnings actually does so. This is not likely to be the case. However, I note that in cases where an audit engagement is misclassified as not being an audit failure (no restatement is issued) when it may in fact be a poor quality audit (that is unobservable) biases against finding a statistically significant result as such mismeasurement introduces noise into my calculation of office-level audit failures. Secondly, my sample is limited to audits of publicly-traded companies. To the extent that a particular auditor office also performs audits of smaller, private companies, my results cannot be generalized to this client base. Finally, in sensitivity analyses I find some weak evidence that Sarbanes-Oxley may have mitigated the contagion effect for Big Four offices, but not for non-Big Four offices. However, the evidence on Big Four offices is only suggestive and the

limited amount of data available in the post-SOX period limits the robustness of the post-SOX analysis. Consequently, further research is necessary to more conclusively investigate the contagion effect in Big Four offices in the post-SOX era.

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Appendix A – Variable Definitions

Variable	Definition
Dependent Variables:	
ABS_DISC_ACC	= the absolute value of a company's discretionary accruals as calculated in Kothari et al. (2005).
DISC_ACC	= the signed value of a company's discretionary accruals as calculated in Kothari et al (2005). Analyses using DISC_ACC investigate only income-increasing discretionary accruals.
Test Variables:	
B4	= 1 if the company hires a Big 4 auditor in year t, and 0 otherwise.
AUD_FAIL_X	= 1 when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when a client company restates net income downward by a material amount subsequent to the audit. X refers to the materiality level of the restatement (i.e. 2 for a two percent or greater downward restatement of net income, 5 for a five percent or greater downward restatement of net income and 10 for a ten percent or greater downward restatement of net income). Company-year observations with a restatement due to a merger/acquisition are not considered to be an audit failure. Auditor office locations are taken from Audit Analytics.
PERC_FAIL_X	= the number of audit failures in an auditor office as calculated by AUD_FAIL_X, scaled by the total number of audit clients served by the auditor office in a year. The percentage values are then ranked from 1 to 10.
LARGE_OFFICE	= 1 for Big Four auditor offices that are larger than the 75th percentile value of OFFICE_SIZE (see below), and 0 otherwise. The 75th percentile value for Big Four offices is $11.8 million in audit fees. This variable is used only in Tables 12 and 13.

HIGH_OFFICE_
EXPERTISE = 1 when the percentage of audits conducted within an auditor office in a year where the auditor is the city-level industry expert is greater than the median value of .75 for all Big Four auditor-offices-year observations and 0 when it is below the median value. The percentage is calculated for each office-year by scaling the number of audits conducted within an office in a year where the auditor is the city-level industry expert by the total number of audit engagements in the office in the same year. An auditor is the city-level industry expert when it has the highest market share of audit fees within a Metropolitan Statistical Area in an industry defined by 2-digit SIC codes (see the variable definition for CITY_IND_EXP below). This variable is used only in Tables 14 and 15.

Auditor Office-Level Control Variables:

OFFICE_SIZE = the natural log of the total dollar amount of audit fees charged to All audit clients within an auditor office in year t. Auditor office locations are taken from Audit Analytics.

RISK_PORT = the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean level are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year.

Firm-Level Control Variables:

CITY_IND_EXP = 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise where industry expertise is calculated based on total audit fees charged by the audit firm to clients within a particular metropolitan statistical area and industry (similar to Francis et al. 2005). The audit firm with the highest amount of audit fees within an industry in a city is classified as the city-level industry expert. Industries are defined at the 2-digit SIC code level.

NAT_IND_EXP = 1 if the company's auditor is the national-level industry expert auditor, and 0 otherwise where industry expertise is calculated based on total audit fees charged by the audit firm to clients in a particular industry within the U.S. The audit firm with the highest amount of audit fees within an industry is classified as the national industry expert. Industries are defined at the 2-digit SIC code level.

INFLUENCE	= the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year.
SIZE	= the natural log of a company's total assets in year t.
LAG_TOT_ACC	= a company's total accruals scaled by total assets in year t-1.
CFO	= a company's cash flows from operations in year t scaled by lagged total assets.
CFO_VOL	= the standard deviation of a company's cash flows from operations from year t-2 through year t.
SALES_GROWTH	= the one-year growth in a company's sales from year t-1 to year t.
SALES_VOL	= the standard deviation of a company's sales from year t-2 through year t.
PPE_GROWTH	= the one-year growth in a company's net property, plant and equipment from year t-1 to year t.
LEV	= a company's total debt, scaled by lagged total assets.
MB	= a company's market value of equity scaled by book value of equity at the end of year t.
RETURN	= a company's 12-month stock return during year t-1.
RET_VOL	= the standard deviation of a company's monthly stock returns during year t.
SHARE_ISSUE	= 1 if the company issued additional shares in year t, and 0 otherwise.
LOSS	= 1 if the company records net income below zero in year t, and 0 otherwise.
LITIGATE	= 1 if a company is within the following SIC codes: 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise.

BANKRUPTCY	= the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)].
#_OPER_SEGS	= the number of operating segments the company operates in.
#_GEO_SEGS	= the number of geographic segments the company operates in.

TABLE 1
Sample Selection

	N
Observations available in the Compustat Fundamentals Annual File from the years 2000-2006 with non-missing assets or income	70,661
Less:	
Financial and Utility Companies (SIC 4400-4999 and 6000-6999)	(19,957)
Observations with missing CIK number to merge with Audit Analytics	(5,442)
Observations with missing auditor location data in Audit Analytics	(10,875)
Observations with missing data necessary to calculate firm-level variables	(11,579)
Final Sample	22,808

TABLE 2
Number of Unique Auditor Office Locations by Year

Year	Non-Big Four	Big Four	Total
2000	146	320	466
2001	247	348	595
2002	299	304	603
2003	318	284	602
2004	357	272	629
2005	380	266	646
2006	320	244	564
Total	2,067	2,038	4,105
Mean Number per year	295	291	586

Big Four indicates that the auditor office is that of a Big Four audit firm in year t. Non-Big Four indicates that the auditor office is that of a non-Big Four audit firm in year t.

TABLE 3
Total Number of Restatements per Office per Year

	Restatement Threshold					
	> 2%		> 5%		> 10%	
Number of Restatements	Non-Big 4	Big 4	Non-Big 4	Big 4	Non-Big 4	Big 4
0	1,710	1,292	1,760	1,392	1,806	1,490
1	277	448	248	416	215	369
2	59	157	44	119	37	112
3	11	77	7	63	7	36
4	9	26	8	20	2	14
5	1	15	-	14	-	7
6	-	13	-	5	-	8
> 6	-	10	-	9	-	2
Total	2,067	2,038	2,067	2,038	2,067	2,038

The figures in this table are for all auditor office locations over all years of the sample from 2000 to 2006 (i.e. observations are at the office-year level). "Number of Restatements" is the number of client companies that restate net income by at least the audit failure threshold listed (i.e. 2, 5 or 10 percent). Big Four indicates that the auditor office is that of a Big Four audit firm in year t. Non-Big Four indicates that the auditor office is that of a non-Big Four audit firm in year t.

TABLE 4
Distribution of Number of Restatements

	Restatement Threshold is > 2% in all cases					
	Number of Restatements		Number of Audits		Restatements as a Percentage of Audits	
	Non-Big 4	Big 4	Non-Big 4	Big 4	Non-Big 4	Big 4
10 %	0	0	1.00	2.00	0	0
25 %	0	0	2.00	4.00	0	0
Mean	.23	.66	7.25	14.94	.025	.041
Median	0	0	4.00	8.00	0	0
75 %	0	1.00	8.00	17.00	0	.063
90 %	1.00	2.00	17.00	35.00	.083	.129
Max	5.00	13.00	194.00	392.00	1.000	1.000

The figures in this table are for all auditor office locations over all years of the sample from 2000 to 2006 (i.e. observations are at the office-year level). "Number of Audits" is the number of audits performed by an office in a year. This table includes only the two percent restatement threshold level for brevity. Big Four indicates that the auditor office is that of a Big Four audit firm in year t. Non-Big Four indicates that the auditor office is that of a non-Big Four audit firm in year t.

TABLE 5
Distributional Properties of Variables

Variable	N	Mean	Std. Dev.	25%	Median	75%
ABS_DISC_ACC	22,808	.078	.087	.021	.049	.102
DISC_ACC	22,808	0	.112	-.046	.004	.052
AUD_FAIL_2	4,105	.269	.443	0	0	1.000
AUD_FAIL_5	4,105	.232	.422	0	0	0
AUD_FAIL_10	4,105	.197	.398	0	0	0
PERC_FAIL_2	4,105	.029	.065	0	0	.020
PERC_FAIL_5	4,105	.024	.058	0	0	0
PERC_FAIL_10	4,105	.019	.052	0	0	0
B4	22,808	.769	.421	1.000	1.000	1.000
OFFICE_SIZE (n=office-years)	4,105	6,093	16,100	134	722	4,124
RISK_PORT (n=office-years)	4,105	.668	2.677	-1.056	-.041	1.495
OFFICE_EXP_% (Big 4 only)	2,038	.691	.328	.400	.750	1.000
CITY__IND_EXP (Big 4 only)	17,408	.509	.499	0	1.000	1.000
NAT_IND_EXP (Big 4 only)	17,408	.232	.422	0	0	0
INFLUENCE	22,808	.235	.399	.018	.066	.237
SIZE	22,808	1,199	3,190	33	162	734
LAG_TOT_ACC	22,808	-.276	9.642	-.125	-.060	-.015
CFO	22,808	-.079	.562	-.113	.051	.147
CFO_VOL	22,808	.190	.266	.046	.096	.207
SALES_GROWTH	22,808	.183	.687	-.050	.072	.226
SALES_VOL	22,808	.940	2.678	.033	.152	.659
PPE_GROWTH	22,808	.105	.585	-.129	.001	.165
LEV	22,808	.257	.322	.011	.170	.366
MB	22,808	2.726	3.806	.867	1.698	3.070
RETURN	22,808	.243	.940	-.314	.039	.461
RET_VOL	22,808	.170	.145	.084	.129	.206
ISSUE	22,808	.735	.441	0	1.000	1.000
LOSS	22,808	.428	.494	0	0	1.000
LITIGATE	22,808	.304	.460	0	0	1.000
BANKRUPTCY	22,808	.142	6.229	.355	1.715	2.774
#_OPER_SEGS	22,808	1.018	.268	1.000	1.000	1.000
#_GEO_SEGS	22,808	1.203	.904	1.000	1.000	1.000

ABS_DISC_ACC is the absolute value of a company's discretionary accruals as calculated per Kothari et al. (2005). DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). PERC_FAIL_X is the number of audit failures in an auditor office in a year as calculated by AUD_FAIL_X, scaled by the total number of clients served by the same office in the same year. The percentage values are then ranked from 1 to 10. B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in. Descriptive statistics for audit failure variables (AUD_FAIL_X and PERC_FAIL_X), OFFICE_SIZE and RISK_PORT are based on a sample of 4,105 auditor-office-year observations. Descriptive statistics for OFFICE_EXP_% are calculated based on a sample of 2,038 Big Four auditor-office-year observations. Descriptive statistics for industry expertise variables (CITY_IND_EXP and NAT_IND_EXP) are calculated over only client companies of Big Four auditors, which results in a reduced sample size of 17,408 observations.

TABLE 6
Differences in Means / Medians of Accruals in Auditor Offices for Non-Big Four Auditors

	ABS_DISC_ACC			DISC_ACC > 0		
	Mean	**Median**	**N**	**Mean**	**Median**	**N**
AUD_FAIL_X = 0	.147	.081	3,250	.129	.087	1,699
AUD_FAIL_2 = 1	.167 ***	.092 ***	1,824	.141 ***	.098 **	942
AUD_FAIL_5 = 1	.167 ***	.092 ***	1,614	.141 ***	.096 *	826
AUD_FAIL_10 = 1	.169 ***	.094 ***	1,413	.142 **	.096 *	728

ABS_DISC_ACC is the absolute value of a company's discretionary accruals as calculated per Kothari et al. (2005). DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income).

TABLE 7
Differences in Means / Medians of Accruals in Auditor Offices for Big Four Auditors

	ABS_DISC_ACC			DISC_ACC > 0		
	Mean	**Median**	**N**	**Mean**	**Median**	**N**
AUD_FAIL_X = 0	.070	.044	4,639	.070	.044	2,398
AUD_FAIL_2 = 1	.080 ***	.048 ***	11,244	.079 ***	.048 ***	5,656
AUD_FAIL_5 = 1	.080 ***	.048 ***	10,176	.080 ***	.048 ***	5,128
AUD_FAIL_10 = 1	.082 ***	.048 ***	9,116	.082 ***	.049 ***	4,613

ABS_DISC_ACC is the absolute value of a company's discretionary accruals as calculated per Kothari et al. (2005). DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income).

TABLE 8
Audit Failures within an Auditor Office and Absolute Discretionary Accruals

		Audit Failure Threshold (AUD_FAIL_X)		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
B4	?	-.002	-.002	-.002
AUD_FAIL_X	+	**.008 ****	**.009 ****	**.009 ****
(p-value)		(.049)	(.035)	(.041)
*B4 * AUD_FAIL_X*	-	-.001	-.002	-.002
(p-value)		(.722)	(.610)	(.700)
Control Variables:				
OFFICE_SIZE	-	-.007	-.007	-.008 *
RISK_PORT	?	.002	.002	.002
CITY_IND_EXP	-	.002	.002	.003
NAT_IND_EXP	?	-.001	-.001	-.002
INFLUENCE	?	.003	.003	.003
SIZE	-	-.008 ***	-.008 ***	-.007 ***
LAG_TOT_ACC	-	-.058 ***	-.058 ***	-.059 ***
CFO	-	-.094 ***	-.092 ***	-.093 ***
CFO_VOL	+	.069 ***	.072 ***	.072 ***
SALES_GROWTH	+	.013 ***	.013 ***	.013 ***
SALES_VOL	+	.002 ***	.002 ***	.002 ***
PPE_GROWTH	+	.016 ***	.016 ***	.016 ***
LEV	?	-.012 **	-.013 **	-.014 **
MB	+	.001 *	.001	.001 *
RETURN	?	.005 ***	.005 ***	.005 ***
RET_VOL	+	.077 ***	.077 ***	.079 ***
SHARE_ISSUE	?	-.004 **	-.003 *	-.004 **
LOSS	-	-.027 ***	-.026 ***	-.026 ***
LITIGATE	+	-.004	-.004	-.005
BANKRUPTCY	-	-.005 ***	-.005 ***	-.005 ***
#_OPER_SEGS	?	.001	.000	.000
#_GEO_SEGS	?	-.001	-.000	-.000
INTERCEPT	?	.109 ***	.108 ***	.098 ***
F-test [AUD_FAIL + B4*AUD_FAIL]		**13.4 *****	**16.0 *****	**15.8 *****
(p-value)		(.000)	(.000)	(.000)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		13,068	11,790	10,529
N (control)		7,889	7,889	7,889
Model p-value		<.001	<.001	<.001
R^2		41.3 %	41.3 %	41.5 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. ABS_DISC_ACC is the absolute value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

TABLE 9
Audit Failures within an Auditor Office and Income-Increasing Discretionary Accruals

		Audit Failure Threshold (AUD_FAIL_X)		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
B4	?	.004	.004	.005
AUD_FAIL_X	+	**.007 ***	**.008 ***	.008
(p-value)		(.090)	(.081)	(.119)
*B4 * AUD_FAIL_X*	-	- .002	- .002	- .000
(p-value)		(.722)	(.727)	(.540)
Control Variables:				
OFFICE_SIZE	-	-.004	-.005	-.005
RISK_PORT	?	.002 *	.002 *	.002 *
CITY_IND_EXP	-	.002	.002	.003
NAT_IND_EXP	?	-.002	-.002	-.004
INFLUENCE	?	.008***	.008***	.008***
SIZE	-	-.013 ***	-.013 ***	-.013 ***
LAG_TOT_ACC	-	-.006	-.003	-.006
CFO	-	-.036 ***	-.034 ***	-.035 ***
CFO_VOL	+	.069 ***	.073 ***	.072 ***
SALES_GROWTH	+	.017 ***	.017 ***	.018 ***
SALES_VOL	+	.002 ***	.002 ***	.002 ***
PPE_GROWTH	+	.008 **	.007 **	.007 *
LEV	?	-.003	-.003	-.003
MB	+	.001	.001	.001
RETURN	?	.005 ***	.005 ***	.005 ***
RET_VOL	+	.094 ***	.092 ***	.090 ***
SHARE_ISSUE	?	.002	.003	.001
LOSS	-	-.034 ***	-.033 ***	-.034 ***
LITIGATE	+	-.012 **	-.010 **	-.010 **
BANKRUPTCY	-	-.007 ***	-.007 ***	-.007 ***
#_OPER_SEGS	?	.003 ***	.003 ***	.002 ***
#_GEO_SEGS	?	.000	.000	.000
INTERCEPT	?	.136 ***	.136 ***	.114 ***
F-test [AUD_FAIL + B4*AUD_FAIL]		**8.6 *** **	**10.0 *** **	**12.0 *** **
(p-value)		(.003)	(.002)	(.000)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		6,596	5,951	5,338
N (control)		4,097	4,097	4,097
Model p-value		<.001	<.001	<.001
R^2		35.6 %	35.7 %	35.6 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

TABLE 10
Percentage of Audit Failures within an Auditor Office and Absolute Discretionary Accruals

		Audit Failure Threshold (PERC_FAIL_X)		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
B4	?	-.002	-.003	-.002
PERC_FAIL_X	+	**.010 ****	**.012 ****	**.013 ****
(p-value)		(.042)	(.032)	(.029)
*B4 * PERC_FAIL_X*	-	-.002	-.002	-.001
(p-value)		(.713)	(.700)	(.768)
Control Variables:				
OFFICE_SIZE	-	-.002	-.002	-.003
RISK_PORT	?	.002	.002	.002
CITY_IND_EXP	-	.002	.002	.003
NAT_IND_EXP	?	-.001	-.002	-.002
INFLUENCE	?	.004 *	.004 *	.004
SIZE	-	-.008 ***	-.008 ***	-.007 ***
LAG_TOT_ACC	-	-.058 ***	-.057 ***	-.059 ***
CFO	-	-.094 ***	-.092 ***	-.093 ***
CFO_VOL	+	.069 ***	.072 ***	.072 ***
SALES_GROWTH	+	.013 ***	.013 ***	.013 ***
SALES_VOL	+	.002 ***	.002 ***	.002 ***
PPE_GROWTH	+	.016 ***	.016 ***	.016 ***
LEV	?	-.013 **	-.013 **	-.015 **
MB	+	.001 *	.001	.001 *
RETURN	?	.004 ***	.005 ***	.005 ***
RET_VOL	+	.077 ***	.077 ***	.079 ***
SHARE_ISSUE	?	-.004 **	-.003 *	-.004 **
LOSS	-	-.027 ***	-.026 ***	-.027 ***
LITIGATE	+	-.004	-.004	-.005
BANKRUPTCY	-	-.005 ***	-.005 ***	-.005 ***
#_OPER_SEGS	?	.001	.000	.000
#_GEO_SEGS	?	-.001	-.000	-.000
INTERCEPT	?	.106 ***	.107 ***	.096 ***
F-test [PERC_FAIL_X + B4*PERC_FAIL_X]		**17.6 *****	**19.7 *****	**22.2 *****
(p-value)		(.000)	(.000)	(.000)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		13,068	11,790	10,529
N (control)		7,889	7,889	7,889
Model p-value		<.001	<.001	<.001
R^2		41.3 %	41.3 %	41.5 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. ABS_DISC_ACC is the absolute value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). PERC_FAIL_X is the number of audit failures in an auditor office in a year as calculated by AUD_FAIL_X, scaled by the total number of clients served by the same office in the same year. The percentage values are then ranked from 1 to 10. B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

TABLE 11
Percentage of Audit Failures within an Auditor Office and Income-Increasing Discretionary Accruals

		Audit Failure Threshold (PERC_FAIL_X)		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
B4	?	.004	.004	.005
PERC_FAIL_X	+	**.010 ***	**.012 ****	**.011 ***
(p-value)		(.062)	(.044)	(.052)
*B4 * PERC_FAIL_X*	-	-.003	-.004	- .003
(p-value)		(.558)	(.576)	(.698)
Control Variables:				
OFFICE_SIZE	-	-.001	.000	-.001
RISK_PORT	?	.002 *	.002 *	.002 *
CITY_IND_EXP	-	.002	.002	.002
NAT_IND_EXP	?	-.002	-.003	-.004
INFLUENCE	?	.009 ***	.009 ***	.009 ***
SIZE	-	-.013 ***	-.013 ***	-.013 ***
LAG_TOT_ACC	-	-.006	-.003	-.007
CFO	-	-.036 ***	-.033 ***	-.035 ***
CFO_VOL	+	.069 ***	.073 ***	.072 ***
SALES_GROWTH	+	.017 ***	.017 ***	.018 ***
SALES_VOL	+	.002 ***	.002 ***	.002 ***
PPE_GROWTH	+	.008 **	.007 **	.007 *
LEV	?	-.003	-.003	-.003
MB	+	.001	.001	.001
RETURN	?	.005 ***	.005 ***	.005 ***
RET_VOL	+	.094 ***	.092 ***	.090 ***
SHARE_ISSUE	?	.002	.003	.001
LOSS	-	-.034 ***	-.033 ***	-.034 ***
LITIGATE	+	-.012 **	-.010 **	-.009 **
BANKRUPTCY	-	-.007 ***	-.007 ***	-.007 ***
#_OPER_SEGS	?	.003 ***	.003 ***	.002 ***
#_GEO_SEGS	?	.000	.000	.000
INTERCEPT	?	.133 ***	.134 ***	.112 ***
F-test [PERC_FAIL_X + B4*PERC_FAIL_X]		**6.7 *** **	**8.7 *** **	**9.1 *** **
(p-value)		(.009)	(.003)	(.003)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		6,596	5,951	5,338
N (control)		4,097	4,097	4,097
Model p-value		<.001	<.001	<.001
R^2		35.6 %	35.7 %	35.7 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). PERC_FAIL_X is the number of audit failures in an auditor office in a year as calculated by AUD_FAIL_X, scaled by the total number of clients served by the same office in the same year. The percentage values are then ranked from 1 to 10. B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

TABLE 12
Audit Failures within an Auditor Office and Absolute Discretionary Accruals Dependent on Auditor Office Size - Big Four Auditors

		Audit Failure Threshold (AUD_FAIL_X)		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
LARGE_OFFICE	?	.002	.002	.002
AUD_FAIL_X	+	**.007 *** **	**.008 *** **	**.009 *** **
(p-value)		(.001)	(.000)	(.000)
*AUD_FAIL_X * LARGE_OFFICE*	-	- .005	**- .006 ***	**- .007 ** **
(p-value)		(.115)	(.079)	(.050)
Control Variables:				
RISK_PORT	?	.001	.000	.002
CITY_IND_EXP	-	.001	.001	.002
NAT_IND_EXP	?	-.002	-.003	-.003
INFLUENCE	?	.004 *	.004 **	.004 *
SIZE	-	-.008 ***	-.008 ***	-.007 ***
LAG_TOT_ACC	-	-.024 ***	-.021 **	-.022 **
CFO	-	-.054 ***	-.053 ***	-.055 ***
CFO_VOL	+	.064 ***	.065 ***	.063 ***
SALES_GROWTH	+	.009 ***	.008 ***	.008 ***
SALES_VOL	+	.001 ***	.001 ***	.002 ***
PPE_GROWTH	+	.018 ***	.018 ***	.018 ***
LEV	?	-.022 ***	-.024 ***	-.024 ***
MB	+	.001 ***	.001 ***	.002 ***
RETURN	?	.005 ***	.005 ***	.005 ***
RET_VOL	+	.062 ***	.061 ***	.063 ***
SHARE_ISSUE	?	-.002	-.002	-.003 *
LOSS	-	-.006 **	-.005 **	-.006 **
LITIGATE	+	.003	.003	.003
BANKRUPTCY	-	-.004 ***	-.004 ***	-.005 ***
#_OPER_SEGS	?	.001	.000	.000
#_GEO_SEGS	?	-.001 **	-.001 **	-.001 *
INTERCEPT	?	.106 ***	.108 ***	.097 ***
F-test [AUD_FAIL_X + AUD_FAIL_X*LARGE_OFFICE]		0.8	0.7	0.6
(p-value)		(.359)	(.409)	(.459)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		11,244	10,176	9,116
N (control)		4,639	4,639	4,639
Model p-value		<.001	<.001	<.001
R^2		27.2 %	27.7 %	28.2 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. ABS_DISC_ACC is the absolute value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). LARGE_OFFICE equals 1 when the size of an auditor office is above the 75th percentile value of all Big Four auditor-office observations (the 75th percentile value is $11.8 million in audit fees). RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

TABLE 13
Audit Failures within an Auditor Office and Income-Increasing Discretionary Accruals Dependent on Auditor Office Size - Big Four Auditors

		Audit Failure Threshold (AUD_FAIL_X)		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
LARGE_OFFICE	?	.004	.004	.004
AUD_FAIL_X	+	**.007 ****	**.008 *****	**.009 *****
(p-value)		(.011)	(.005)	(.002)
*AUD_FAIL_X * LARGE_OFFICE*	-	- .004	- .005	- .006
(p-value)		(.374)	(.259)	(.166)
Control Variables:				
RISK_PORT	?	.004 ***	.004 ***	.004 ***
CITY_IND_EXP	-	.002	.003	.003
NAT_IND_EXP	?	-.002	-.003	-.004 *
INFLUENCE	?	.006 **	.006 **	.006 **
SIZE	-	-.014 ***	-.014 ***	-.013 ***
LAG_TOT_ACC	-	-.019 *	-.014	-.016
CFO	-	-.027 ***	-.024 ***	-.027 ***
CFO_VOL	+	.046 ***	.044 ***	.041 ***
SALES_GROWTH	+	.012 ***	.011 ***	.012 ***
SALES_VOL	+	.002 ***	.002 ***	.002 ***
PPE_GROWTH	+	.014 ***	.013 ***	.012 ***
LEV	?	-.006	-.006	-.008
MB	+	.001 **	.001 *	.002 **
RETURN	?	.005 **	.005 **	.005 **
RET_VOL	+	.082 ***	.082 ***	.083 ***
SHARE_ISSUE	?	.001	.002	.000
LOSS	-	-.021 ***	-.020 ***	-.021 ***
LITIGATE	+	-.008	-.007	-.006
BANKRUPTCY	-	-.006 ***	-.007 ***	-.007 ***
#_OPER_SEGS	?	.003 ***	.002 ***	.002 ***
#_GEO_SEGS	?	-.000	-.000	-.000
INTERCEPT	?	.145 ***	.146 ***	.121 ***
F-test [AUD_FAIL_X + AUD_FAIL_X*LARGE_OFFICE]		0.8	0.8	0.7
(p-value)		(.385)	(.384)	(.405)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		5,654	5,125	4,610
N (control)		2,398	2,398	2,398
Model p-value		<.001	<.001	<.001
R^2		31.2 %	31.4 %	31.5 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). LARGE_OFFICE equals 1 when the size of an auditor office is above the 75th percentile value of all Big Four auditor-office observations (the 75th percentile value is $11.8 million in audit fees). RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

TABLE 14
Audit Failures within an Auditor Office and Income-Increasing Discretionary Accruals Dependent on City-Level Industry Expertise
All Big Four Auditor Offices

		Dependent Variable = DISC_ACC (> 0)		
		Audit Failure Threshold		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
HIGH_OFFICE_EXPERTISE	?	-.001	-.001	-.001
AUD_FAIL_X	+	**.010**	**.011**	**.011**
(p-value)		(.001)	(.001)	(.001)
*AUD_FAIL_X * HIGH_OFFICE_EXPERTISE*	-	**- .006 ***	**- .006 ***	**- .006 ***
(p-value)		(.087)	(.080)	(.080)
Control Variables:				
OFFICE_SIZE	-	-.004	-.004	-.004
RISK_PORT	?	-.010	-.001	-.002
CITY_IND_EXP	-	-.008 *	-.008 *	-.008
NAT_IND_EXP	?	-.001	-.002	-.003 *
INFLUENCE	?	.010 **	.010 **	.009 *
SIZE	-	-.014	-.014	-.013
LAG_TOT_ACC	-	-.013	-.006	-.009
CFO	-	-.028 **	-.025 **	-.027 **
CFO_VOL	+	.047	.044	.040
SALES_GROWTH	+	.012	.012	.013
SALES_VOL	+	.002	.002	.002
PPE_GROWTH	+	.014	.014	.013
LEV	?	-.004	-.003	-.005
MB	+	.001 *	.001 *	.002 **
RETURN	?	.005 **	.005 *	.004 **
RET_VOL	+	.082	.082 **	.086
SHARE_ISSUE	?	.000	.001	-.001
LOSS	-	-.023	-.022	-.023
LITIGATE	+	-.007	-.006	-.003
BANKRUPTCY	-	-.007	-.007	-.007
#_OPER_SEGS	?	.002	.003	.003 **
#_GEO_SEGS	?	-.000	-.000	-.000
INTERCEPT	?	.175	.175	.143
F-stat [AUD_FAIL_X + AUD_FAIL_X*HIGH_OFFICE_EXPERTISE]		1.8	1.9	1.9
p-value		(.180)	(.167)	(.169)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		5,652	5,123	4,608
N (control)		2,389	2,389	2,389
Model p-value		<.001	<.001	<.001
R^2		31.6 %	32.2 %	32.2 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). HIGH_OFFICE_EXPERTISE equals one when the value of CITY_IND_EXP is above its median value of .75, and zero otherwise. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

TABLE 15
Audit Failures within an Auditor Office and Income-Increasing Discretionary Accruals Dependent on City-Level Industry Expertise
Largest Big Four Auditor Offices

		Dependent Variable = DISC_ACC (> 0)		
		Audit Failure Threshold		
Variable	**Pred.**	**> 2 %**	**> 5 %**	**> 10 %**
Test Variables:				
HIGH_OFFICE_EXPERTISE	?	-.005	-.003	-.003
AUD_FAIL_X	+	**.010 *** **	**.011**	**.010 *** **
(p-value)		(.007)	(.008)	(.009)
AUD_FAIL_X *	-	**- .010 ***	**- .011 ***	**- .011 ***
(p-value)		(.077)	(.077)	(.072)
Control Variables:				
OFFICE_SIZE	-	.007	.007	.007
RISK_PORT	?	.001 *	.001	.001
CITY_IND_EXP	-	-.007	-.008 *	-.007 *
NAT_IND_EXP	?	-.003	-.004	-.005 *
INFLUENCE	?	.026***	.027***	.026***
SIZE	-	-.015	-.016	-.015
LAG_TOT_ACC	-	-.010	-.004	-.004
CFO	-	-.024 **	-.021 *	-.022 *
CFO_VOL	+	.048 ***	.044	.038 ***
SALES_GROWTH	+	.013 ***	.014	.015 ***
SALES_VOL	+	.002 ***	.002	.002 ***
PPE_GROWTH	+	.012 ***	.011	.011 ***
LEV	?	-.006	-.005	-.007
MB	+	.001	.001	.001
RETURN	?	.003	.002	.002
RET_VOL	+	.095 ***	.096	.097 ***
SHARE_ISSUE	?	-.000	-.000	-.002
LOSS	-	-.022	-.021	-.021
LITIGATE	+	-.008	-.007	-.006
BANKRUPTCY	-	-.006	-.007	-.007
#_OPER_SEGS	?	.002 ***	.002	.002 **
#_GEO_SEGS	?	-.000	-.000	-.000
INTERCEPT	?	.174 ***	.176	.147 ***
F-stat [AUD_FAIL_X + AUD_FAIL_X*HIGH_OFFICE_EXPERTIS		0.0	0.0	0.0
p-value		(.995)	(.998)	(.957)
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		YES	YES	YES
N (treatment)		3,927	3,579	3,277
N (control)		569	569	569
Model p-value		<.001	<.001	<.001
R^2		30.6 %	30.7 %	31.0 %

***, ** and * indicate significance at the .01, .05 and .10 respectively using two-tailed tests. T-statistics are calculated based on robust standards errors clustered at the auditor-office level. DISC_ACC is the signed value of a company's discretionary accruals as calculated per Kothari et al. (2005). AUD_FAIL_X equals one when at least one audit failure occurs within the same office of a company's external auditor during year t, and 0 otherwise. An audit failure is defined as existing when at least one of the auditor's client companies within an auditor office subsequently restates net income downward in the future by threshold level X. X refers to the threshold level of the restatement (i.e. 2 for a two percent or greater restatement of net income, 5 for a five percent or greater restatement of net income, 10 for a ten percent or greater restatement of net income). B4 equals one if the company hires a Big 4 auditor in year t, and 0 otherwise. OFFICE_SIZE (in this table only) is total dollar amount of fees charged to all audit clients within an auditor office in year t (it is log-transformed in all subsequent analyses). LARGE_OFFICE equals 1 when the size of an auditor office is above the 75th percentile value of all Big Four auditor-office observations (the 75th percentile value is $11.8 million in audit fees). HIGH_OFFICE_EXPERTISE equals one when the value of CITY_IND_EXP is above its median value of .75, and zero otherwise. CITY_IND_EXP equals 1 if the company's auditor is the city-level industry expert auditor, and 0 otherwise. RISK_PORT is the mean value of the average of client assets, leverage and return on assets for an auditor office in year t. The average is calculated by taking the man level of client assets, leverage and return on assets. These mean levels are then standardized so that each has a mean of zero and a standard deviation of one. These standardize values are then averaged together to form the overall risk client risk portfolio for the auditor office in a year. OFFICE_EXP_% is the percentage of Big 4 audits conducted within an auditor office in a year where the Big 4 auditor is the city-level industry expert. NAT_IND_EXP equals 1 if the company's Big 4 auditor is the national industry expert auditor, and 0 otherwise. Industries are defined at the 2-digit SIC code level for all expertise variables. Expertise is based on market share of audit fees. INFLUENCE is the total dollar value of both audit and non-audit fees charged to a specific client in year t, scaled by the total audit fees charged by the auditor office in the same year. SIZE (in this table only) is a company's total assets in year t (it is log-transformed in all subsequent analyses). LAG_TOT_ACC is a company's total accruals scaled by total assets in year t-1. CFO is a company's cash flows from operations in year t scaled by lagged total assets. CFO_VOL is the standard deviation of a company's cash flows from operations from year t-2 through year t. SALES_GROWTH is the one-year growth in a company's sales from year t-1 to year t. SALES_VOL is the standard deviation of a company's sales from year t-2 through year t. PPE_GROWTH is the one-year growth in a company's net property, plant and equipment from year t-1 to year t. LEV is a company's total debt in year t, scaled by lagged total assets. MB is a company's market value of equity scaled by book value of equity at the end of year t. RETURN is a company's 12-month stock return during year t-1. RET_VOL is the standard deviation of a company's monthly stock returns during year t. SHARE_ISSUE equals one if the company issued additional shares in year t, and 0 otherwise. LOSS equals one if the company records net income below zero in year t, and 0 otherwise. LITIGATE equals one if a company is within the following SIC codes: (2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370), and 0 otherwise. The sample sizes for CITY_IND_EXP and NAT_IND_EXP are smaller as these values are calculated across only clients of Big Four auditors. BANKRUPTCY is the probability of bankruptcy using the Altman-Z score [(0.717*net working capital / assets) + (0.847*retained earnings / assets) + (3.107*earnings before interest and taxes / assets) + (0.42*book value of equity / liabilities) + (0.998*sales / assets)] #_OPER_SEGS is the number of operating segments the company operates in. #_GEO_SEGS is the number of geographic segments the company operates in.

VITA

Paul Nicholas Michas was born on July 16, 1974 in DeKalb, IL. He received his Bachelor of Science degree in Political Science and Journalism in 1996 from the University of Iowa. He received his Illinois CPA license in 2001 and went on to receive a Master of Business Administration degree from Northern Illinois University in 2005. He began his doctoral studies in accounting in that same year, graduating with a Ph.D. in accounting in 2011. He will join the faculty as an Assistant Professor of Accounting at the University of Arizona in the Eller College of Management in August of 2011.