

Distracted Auditors^{*}

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Abstract

An auditor is unlikely to allocate equal or time-invariant amounts of effort to all clients in the portfolio. This study exploits exogenous attention shocks to assess the value of auditors. When an audit office is temporarily distracted, some of its clients experience a sharp decline in auditor attention (i.e., the treatment firms), while others do not (i.e., the control firms). The treatment clients experience a 0.002 more negative *CAR* than the control clients, especially if the distraction is strong or the clients are relatively unimportant to the audit office. In the longer term, auditor distraction causes higher levels of earnings management, crash risk, stock return volatility, and directors' workload. We conduct several robustness checks including analyzing a positive shock to auditor attention that makes an auditor less distracted.

Keywords: Audit Office, Auditor Attention, Portfolio of Clients

JEL Classification: G34, M42

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1. Introduction

An audit office typically manages a portfolio of clients at the same time. Existing literature finds that these clients tend to have similar expected and actual audit quality. For example, Chaney and Philipich (2002) find that following Enron's audit failure, other clients of Arthur Andersen (especially Andersen's Houston office that is the signing office of Enron) experienced a statistically negative market reaction. More recently, Francis and Michas (2012) confirm that the low quality of an audit office when conducting audits for one client can be "contagious" to other clients and imply systematic audit quality problems of the audit office. This effect persists over time. However, it is unclear from the literature as to how an audit office allocates its attention and resources to different clients in the portfolio. Are different clients treated the same way by the same audit office? More importantly, an audit office's attention and resource allocation to a client is unlikely to be constant over time. This paper makes use of exogenous shocks that temporarily alter attention and resource allocation of an audit office to certain clients, while holding everything else constant. These experiments take into account the variation in attention allocation across clients and over time. By examining shareholder wealth effects and the long-term impact of exogenous attention shifting, we provide endogeneity-free evidence regarding the value of auditors.

The key identification of this paper is to exploit distractions to an audit office from its other clients that are exogenous to the client in question. The main analysis focuses on acquisitions made by other clients as a distracting event as acquirer auditors' workloads typically increase following an acquisition (i.e., an auditor is likely to be distracted due to the acquisition). In addition, acquisitions by themselves are non-negative and have no implications concerning the audit quality of an auditor. This helps to rule out alternative explanations, such as downgraded reputation (Chaney and Philipich 2002) or contagion effects (Francis and Michas 2012). Using

external distractions as a way of evaluating auditors has several advantages. First, auditor distractions are exogenous to the client in question as the client in question is unlikely to be able to affect M&A decisions of another firm that simply uses the same auditor. M&A is usually a firm-specific decision not driven by auditors. In addition, distractions are temporary and repeatable. Both features are helpful in mitigating experimental pitfalls. Finally, distracted auditors are typically not replaced. All arrangements are likely to remain the same, except that an auditor becomes less committed to some clients after distracting events occur. This “inertia” feature ensures that the results are not biased by alternative explanations, such as (expectations of) contracting with a new auditor.

An ideal experiment should assign similar firms into treatment and control groups randomly. The treatment and control firms in this paper are clients of the same audit offices. When an M&A occurs at one of the clients of an audit office, some of its other clients suffer a significantly sharp decline in auditor attention (i.e., the treatment firms), while others do not (i.e., the control firms). By definition, auditor-related characteristics, such as auditor quality and reputation effects, would be the same. This is an important design that helps to rule out alternative explanations and enhances the similarity between the treatments and controls. Treatment and control firms are defined in two ways. The first is whether a sample client is located in a different city from its audit office. A remote client is less reachable and, as such, more likely to be ignored by an audit office when the latter is distracted. Meanwhile, how far a client is located from its auditor should not imply systematic differences in firm characteristics. The second way concerns fiscal year-end. A client is defined as a treatment (control) if the time to its next fiscal year-end is less than 90 days (more than 270 days) when another client of the same audit office announces an M&A. Auditors of the treatment firms are expected to be more

distracted than the control firms when they audit annual reports for the clients in question. This follows the notion that the impact of distraction will fade over time and auditing annual reports makes additional demands on auditor effort. More importantly, it is unlikely that on a given date, clients that just had balance dates and clients that are about to have balance dates would be systematically different.¹

It is important to note that the focus and empirical design of this paper is fundamentally different from studies on reputation effects (Chaney and Philipich 2002) or contagion effects of audit offices (Francis and Michas 2012). These studies focus on the commonality among clients of the same audit office and have not uncovered differences between treatment and control firms that are clients of the same audit offices in this paper. In comparison, this paper seeks to capture variations within the portfolio of clients of the same audit office.

This research hypothesizes that auditors play an important role in a firm, and that a firm suffers when its auditor becomes distracted. Theories predict that auditors serve a role as information intermediaries (Wallace 2004) and insurance providers (DeAngelo 1981; Watts and Zimmerman 1981). Thus, at times of insufficient auditor attention, one can expect that clients could suffer. The fact that a distraction occurrence comes as a surprise makes the event study method particularly suitable. Thus, this research compares market reactions to treatment and control firms. This study also experiments with various factors that are likely to affect the strength of distraction and auditors' workload. We extend the study to longer term impacts to understand the channels behind the market reaction, and to confirm the persistency of the effects of auditor distraction.

¹ Since most U.S. firms have fiscal year-ends in December, those that do not could be systematically different. We thus form a subsample of distraction events that occur from April-August. This ensures that neither treatment nor control clients can have fiscal year-ends in December. The main results remain robust to this subsample.

The sample period is from 2000-2015. The final sample includes cases of auditor distractions structured by client and distraction date. These involve 436 unique audit offices that are distracted by 7,860 unique pairs of acquiring clients and dates. When partitioning treatment and control groups using city location, 68% of all observations are classified as treated. Using fiscal year-ends instead, the treatment and control observations each account for 50% of the sample. An audit office is defined by the combination of audit firm and office city location to be consistent with the literature on audit offices (e.g., Francis and Yu 2009; Francis, Michas, and Yu 2013).

Using regression analysis with interacted industry and year fixed effects, the author finds the treatment clients to experience a 0.002 more negative market reaction (measured by *CAR*) than the control clients. This suggests the market values auditor attention. We conduct further experimentation with various event characteristics to better understand the mechanism of distraction. We find that the treatment effects are especially evident if the event clients are important (reflected by auditor leadership and relative audit fees), the clients in question are small clients for their audit offices, or the distracting M&As demand a lot of additional audit work. These results suggest that the more distracted an auditor is, the more effort it shifts away from the client in question and the more this client suffers. In the longer term, the negative market reaction to auditor distraction is materialized into higher levels of earnings management, crash risk, stock return volatility, and directors' workload.

We conduct several robustness checks. First, the analysis is complemented by exploring a positive shock to auditor attention. The experiment focuses on audit offices of target firms, as an office is likely to lose a client that is taken over and, as such, becomes less busy. The study finds

other clients of targets audit offices to, on average, experience a positive market reaction. This supports that the market values auditor attention.

Second, we address the possibility that in addition to the signing office, other unreported offices of the same audit firm may also perform audit work for the same client. For efficiency reasons, an audit firm is unlikely to fly their auditors to a client's city if it has a local audit office available in the client's city. Thus, a signing office is especially less likely to undertake all of the audit work for the client when the audit firm has another office located in the same city as the client. Taking advantage of this fact, we form a subsample that is less prone to the issue of unreported offices substituting for the signing office in performing audit work for a client by including cases where the audit firm has no other office in the city of the client in question. The results using this subsample are very strong and qualitatively similar to the tabulated ones.

Third, we address the issue that defining an audit office by audit firm and city could misclassify two offices of the same audit firm and city as a single office. Because those that have more than one office in one city are most likely to be large audit firms, we hand collect audit office information of Big-4 audit firms. We then form a subsample that is less prone to office misclassification by excluding an office if it is an office of a Big-4 audit firm and is located in a city where the audit firm has at least two offices. The results are very strong in this subsample.

Fourth, we examine two alternative distraction events, shareholder class action lawsuits and restatements. Both immediate market reaction and longer term impacts are consistent with the tabulated results using these alternative events. Fifth, we confirm that the baseline results are robust to matching of the treatment and control groups by Fama and French (1997) 48 industry, fiscal year, and the 5% radius of total assets.

Last, analysis of the market reaction is repeated with a subsample of first announcements of auditor distraction in each client and fiscal year. The results become less statistically significant in this subsample. This suggests that while the initial announcements of distraction in a year represent the biggest surprise to investors, the follow-up announcements also provide information.

This study makes several contributions. First, it proposes auditor attention shocks as a new experiment for examining the roles and value of auditors. This new shock is exogenous, temporary, and could be repeated. In addition, a distracted auditor is usually not replaced, or expected to be replaced, immediately. All arrangements are likely to remain the same, except that an auditor becomes less committed to some clients after the advent of distracting events. These features of auditor distraction make it especially useful in mitigating endogeneity concerns. Prior studies have used other exogenous shocks in assessing the importance of auditor efficacy, such as the collapse of Arthur Anderson (Jayaraman and Milbourn 2014; Koh and Reeb 2015) and the passage of Sarbanes-Oxley Act (SOX) Section 404 (Iliev 2010; Li, Sun, and Ettredge 2010; Kinney, William, and Shepardson 2011; Lee, Strong, and Zhu 2014).² Compared to these shocks, distraction has the advantage of being temporary and repeatable. To the extent that it could occur to any auditor at any time for any number of times, the shock of distraction is less vulnerable to other events that occur concurrently with a distraction.

Second, the study implements two new ways of dividing treatment and control groups, namely city location and fiscal year-end, while ensuring both groups are clients of the same audit offices. By definition, treatment and control clients both suffer from distraction of the same auditor due to the same event at the same time. The only difference is a treatment firm is likely to

² Iliev (2010) utilizes the shock of SOX 404 with a combined regression discontinuity (RD) and instrumental variable (IV) design. The RD design exploits the discontinuity at \$75 million which determines whether a firm needs to comply with SOX 404. The IV is whether a firm had float more than \$75 million in 2002.

be influenced much more severely by auditor distraction than a control firm. In addition, city location and fiscal year-ends are generally unlikely to be associated with other firm characteristics. This innovative experimental design is particularly helpful in ruling out alternative explanations and isolating the effects of auditor distraction.

Third, this study contributes to the literature regarding audit offices. There have been several recent studies that examine auditing at the office level (see e.g., Francis and Yu 2009; Francis and Michas 2012; Francis, Michas, and Yu 2013; Leone, Rice, Weber, and Willenborg 2013). To our knowledge, this is the first paper that shed light on the time-varying attention allocation of an audit office to different clients in its portfolio. The findings suggest that different clients of the same audit office receive different levels of auditor attention, which is affected by auditor leadership, the client's relative importance to the office (in terms of audit fees and firm size visibility), and the amount of audit work. This attention allocation across clients is adjusted when some of the clients suddenly become more demanding than before.

Last, this research provides large-sample and endogeneity-free empirical evidence concerning the roles of auditors as information intermediaries and insurance providers. Event studies quantify the expected value of auditors to the market. Unlike announcements of auditor replacements, which are often contaminated by other information, auditor distraction can better capture the effect of a reduction in auditor monitoring. The longer term consequences of weak auditor monitoring are revealed to include lower accounting quality, higher crash risk, greater stock return volatility, and heavier workloads for a firm's board of directors.

2. Experimental Design

2.1. Distracting events

This paper uses events that occur to other clients of an auditor as a shock to an auditor's attention allocated to the client in analysis. In particular, the study employs M&As (of other clients) as the distracting event for two reasons. First, the workload of an acquirer's auditor typically increases dramatically due to an M&A. An acquirer auditor needs to ensure consistency in accounting policies between the subsidiary (i.e., target) and the parent and verify that the fair values (including goodwill) in the consolidated reports are reasonable.³ It usually involves the recognition of some assets and liabilities that are not on the target's books pre-M&A (e.g., uncapitalized intangible assets) as well. Second, an M&A is not a negative event. This aids in ruling out alternative explanations, such as downgraded reputation (Chaney and Philipich 2002) or contagion effects (Francis and Michas 2012). The occurrence of an acquisition has nothing to do with auditor quality and merely reflects an increasing demand for auditor attention. After all, an auditor is unlikely to decide on the restructuring activity of its clients.

Using external distractions as a way of evaluating auditors has several advantages. First, auditor distractions are exogenous to the client in question as this client is unlikely to affect the M&A decisions of another firm that simply uses the same auditor. It is improbable for an auditor or its clientele portfolio to be the cause of an M&A. Second, the effects of distractions are temporary. Over the longer term, the additional audit workload is likely to drop and additional staff may join the team to share the workload.⁴ Third, distractions could happen again in the future. All these features are helpful in mitigating experimental pitfalls. Finally, as distracted

³ A firm must provide consolidated financial statements if it owns at least 50% of another firm's stock (see <https://asc.fasb.org/imageRoot/92/63493892.pdf>). Since all of the acquirers in the sample control more than 50% of the targets' stock post-transaction, they all need to provide consolidated financial statements post-transaction.

⁴ It is important to note that even if new staff could step in immediately when distraction occurs, there will still be a short-term distraction effect of a lack of attention at the auditor level and it should be expected by the public. This is because preparing and passing information to other staff also takes time. Further, auditors may not even hire new staff in the first place to cover this kind of additional workload, given that the distracting event is temporary and is unlikely to hurt reputation.

auditors are usually not replaced, the results cannot be biased by (expectations of) contracting with a new auditor.

2.2. Treatment and control groups

The sample include clients that are intertwined with event firms (i.e., those that conduct M&As) by audit offices. That is, all of the firms in the sample, treated or not treated, are clients of the same audit offices that are distracted by the same events from the same event clients at the same time. This is fundamentally different from the experimental setups of studies regarding audit office effects, such as reputation effects as in Chaney and Philipich (2002) and contagion effects as in Francis and Michas (2012), which compare different audit offices that vary in audit quality, reputation, and other characteristics. The focus of this paper is to capture variation within the portfolio of clients of the same audit office. In fact, the notion of contagion effects (that an audit office would have similar audit quality across all clients) supports the idea of using common audit offices to ensure similarity between the treatment and the control groups. Because all of the firms share common audit offices, it is not necessary to include audit office fixed effects in the regression analysis. We include interacted industry and year fixed effects to capture industry trends and to ensure the results are not driven by macro shocks or industry-wide shocks.

We then partition the sample into treat and control groups in two ways. The first is by whether a sample client is located in a different city from its audit office. Firms located remotely from an audit office are less reachable and thus more likely to be ignored by the office when distraction occurs. As such, the effect of auditor distraction is likely to be more severe for clients located remotely from their audit offices. Despite the impact that client location has on the distracted auditor's time reallocation, client location is not contingent or affected by auditor distraction. More importantly, how far away a firm is located from its auditor should not imply

differences in firm characteristics. That is, it is expected that treatment and control groups partitioned by firm location to be otherwise similar.

The second is by fiscal year-end of client firms, which affect how much a client suffers from auditor distraction. A client is defined as treated if the time to its next fiscal year-end is less than 90 days when another client of the same audit office announces an M&A. The control firms are clients that have more than 270 days to the next fiscal year-end, which is equivalent to the last fiscal year-end occurring within 90 days prior to the date of M&A announcement, as long as the fiscal year-end has not changed during the year. That is, auditors of the treatment firms should be more distracted than the control firms when they audit annual reports for the clients in question. The intuition is three-fold. First, auditors are especially in demand when auditing annual reports. A quarterly audit is only a review to provide negative assurance and, as such, does not require as much auditor attention. This warrants the focus on annual report dates (i.e., fiscal year-ends). Second, the impact of distraction will fade over time as an office is likely to reallocate its resources in response to the distraction within a short time. Thus, auditor distraction is likely to be more consequential for clients that are about to release annual reports.⁵ Third, fiscal year-ends are typically determined when a firm is incorporated and are not likely to be correlated with other firm characteristics. When auditor distraction occurs, it is unlikely that clients that just had balance dates and clients that are about to have balance dates would be systematically different. Most U.S. firms have fiscal year-ends in December. And those that do not can be systematically different. We address this concern by examining a subsample of distraction events that occur from April to August, inclusive. By definition, neither treatment nor

⁵ Due to conflicts of interest, auditors cannot provide financial advice regarding the M&As of their clients. Thus, their workload is likely to increase primarily after M&A announcements due to the additional audit work required to evaluate consolidated statements and not prior to its announcement.

control clients can have fiscal year-ends in December. The main results are robust to this subsample.

2.3. Focus on distracted audit offices

In this paper, the focus is on distracted audit offices instead of distracted engagement partners, even though the latter takes on more responsibility. This is because distraction occurs based on the premise of audit workload. And it is an audit team that completes the work together. In addition to the partner in charge, an audit team usually includes a review partner, managers, seniors, and other staff. A partner may not visit a client's premises often, while managers generally have day to day involvement with their clients. Due to their different roles, an engagement partner may not experience the same increase in workload as other members of the team when there is additional audit work. Thus, it would make sense to focus on engagement partners when studying the reputation or responsibility of auditors. In the context of distraction, M&As are not personal distractions that specifically affect an engagement partner and may have a greater impact on other audit team members' workloads than on the engagement partner. Thus, audit offices are more suitable in this paper. This research does not distinguish audit teams from audit offices due to data limitations.

3. Data

The sample period is from 2000-2015. The sample is constructed by first collecting distraction events, namely M&As, from SDC. We obtain all M&A deals where the acquirers are U.S. public, private, or subsidiary firms. We then remove internal restructuring where the ultimate parents of the acquirer and the target have the same CUSIP. Also, a distracting M&A must be important to the acquirer satisfying the following restrictions:

1. The value of the transaction is more than \$1m and is at least 1% of the acquirer's market value of equity measured on the 11th trading day prior to the announcement date;
2. The acquirer controls less than 50% of the target's shares prior to the transaction and more than 50% after the transaction; and
3. The deal is completed.

This results in 16,094 M&As transactions announced from 2000-2015.

Next, auditor information is collected for the SEC registrants from Audit Analytics. Audit Analytics covers client years from 2000-2015 and 1,573 of them have one auditor during the same fiscal year. The auditor with the highest fee for the same firm-year is retained, while 584 firm-year observations are dropped that still have more than one auditor. This research follows the literature regarding audit offices (e.g., Francis and Yu 2009; Francis, Michas, and Yu 2013) and define an audit office by the combination of audit firm and office city location. Admittedly, an audit firm may have more than one office in a city, especially in the instance of large audit firms. This issue is addressed in the Robustness Section 0 using hand-collected data concerning audit offices of Big-4 audit firms. In addition to auditor-related information, the geographic location of the clients is also sourced from Audit Analytics.

Finally, we draw accounting and financial data (including fiscal year-ends) from Compustat, which is matched to Audit Analytics based on CIK and similarity (within 1%) of assets and revenue.⁶ This leads to 133,236 firm-year observations with auditor information and

⁶ The matching algorithm is recommended and coded by WRDS at <http://www.wrds.us/index.php/repository/view/27>.

CUSIP identifiers. Matching them with acquirers in the sample of M&As, we find 12,850 matched client announcement dates. The audit offices of different acquirers are very distinct, numbered at 12,670 audit office announcement dates. Matching is employed to obtain other clients of these audit offices and 455,294 non-event client-event dates observations of result. These constitute the sample of this study. All of the firms in this sample are clients with audit offices that are distracted by other clients' M&A announcements at the same time. In order to conduct regression analysis of the market reaction to auditor distraction, sample clients' daily stock returns around the event dates must be available from CRSP. This leaves 379,868 client-date observations.⁷ In addition, control variables must be available. This research follows Francis, Michas, and Yu (2013) and Francis and Yu (2009) in controlling for client size, financial characteristics (lagged), and internal control weakness, measures of client complexity and information asymmetry, as well as auditor tenure, size, fees, city, and industry leadership. The number of material internal control weaknesses reported by Audit Analytics, in particular, has many missing values and reduces the sample size by half when included as a control variable.⁸ Further control for institutional ownership is obtained from Thomson Reuters to recognize the potential substitutory effects of monitoring by auditors and by institutional shareholders. In total, the final sample includes 112,831 cases of auditor distractions structured by client and distraction date. There are 436 unique audit offices distracted by 7,860 unique pairs of acquiring client dates.

Table 1 provides the summary statistics. Panel A presents the variables at the distraction event level, where data is structured by client and date of auditor distraction. On average, the market reacts negatively to auditor distraction due to another client's M&As. Sixty-eight percent of the observations find the clients in question to be located in cities that are different from their

⁷ For robustness, clients that operate in financial and utilities industries are excluded. This reduces the number of observations by 143,280. We find consistent results in this subsample.

⁸ Results from regression analysis are consistent without this control variable.

audit offices. The variable, *FYEnd Upcoming*, is only available for half of the sample as only those clients with less than 30 days or more than 270 days to the next fiscal year-end are retained. This is to maintain a sharp comparison between clients that will soon release annual reports and clients that have just released financial reports, each accounting for half of the observations with non-missing *FYEnd Upcoming*. Prior to the event date, *Stock Runup* is, on average, positive with a negative median. The auditor of the firm in question may be distracted more than once in a fiscal year by different event firms.

Insert Table 1 about here.

Panel B summarizes the characteristics of 2,371 unique audit office-fiscal year observations in the sample. By definition, the audit offices in the sample have at least two clients at the same time, and one of the clients must be announcing an M&A. On average, these audit offices have 20 clients in a fiscal year. Forty-four percent of the audit offices are leaders in a client's city, and 22% of them are from audit offices that are national leaders in the client's industry. Less than 17% of the auditors have tenure no longer than three years. Panel C summarizes the data at the client firm level. The value of the total assets controlled by the sample clients are highly skewed, with an average of \$4.841 million and a median of \$851 million. This research therefore employs the log transformation of total assets in the regression analysis.

4. Market Reaction to Auditor Distraction

4.1. Baseline

The regression analysis begins with baseline models of market reaction to auditor distraction. The study measures market reaction using cumulative abnormal returns for an event

window (-2, 2) around the announcement date of an M&A at another client of the same audit office. Throughout this paper, two key independent variables are used to capture observations that are more prone to auditor distraction and regress them separately in different regressions. The first one, *Different City*, is an indicator of one if a client is located in a different city from its auditing office, and zero otherwise. The second one, *FYEnd Upcoming*, is an indicator of one if the time to the next fiscal year-end of a client is less than 30 days when an M&A is announced by another client of the same audit office and zero if it is more than 270 days. All of the models include interacted industry and year fixed effects, and standard errors are robust and clustered by client.

Table 2 tabulates the results. The coefficients of *Different City* and *FYEnd Upcoming* are both -0.002 in magnitude, suggesting that clients that are more prone to auditor distractions on average experience a 0.002 more negative market reaction than clients less prone to auditor distractions when their auditors are distracted. Compared to the average CAR of -0.001 (in Table 1 Panel A), this impact is economically significant. The coefficient of *Different City* is statistically significant at the 5% level. When *FYEnd Upcoming* is used, the sample size drops by half. Yet, the coefficient of *FYEnd Upcoming* is statistically more significant at the 1% level. The control variables are largely insignificant statistically, with *Stock Runup* as the only one that remains statistically significant in both columns.

Insert Table 2 about here.

4.2. Auditor leadership

Next, the role of auditor leadership in auditor distraction is analyzed. There are two alternative hypotheses regarding auditor leadership at the event client. A client that operates in

an industry or city where the auditor has leadership could be more important to the auditor. This suggests the distraction may be more severe for the auditor once an M&A occurs with this client. Alternatively, being an expert in the industry or city of the client could also suggest that the auditor could address the event more efficiently. However, this possibility is less likely as the distraction events selected in this paper, namely M&A transactions, are firm-specific decisions rather than industry- or city-wide phenomenon. That is, it is not clear how industry or city specialization would help an auditor in handling the additional audit work from M&As more efficiently. After all, a target could operate in a different city or industry where the acquirer auditor does not have expertise posing difficulties in completing the new audit work.

An audit office is defined as an industry (city) leader if it is the number one office in terms of total fees in the Fama and French (1997) 48 industry (city) of the event client in a fiscal year. In Models 1-4 (Models 5-8) of Table 3, the sample is divided based upon whether an audit office is viewed as a leader in the industry (city) of the event client. Model specifications are the same as in Table 2. The coefficients of both key independent variables, *Different City* and *FYEnd Upcoming*, are negative and strongly significant among observations where audit offices have leadership in event clients' industries or cities. While in the subsamples without audit office leadership, both of the key independent variables become largely insignificant both economically and statistically. The results support the hypothesis that auditors are more distracted when event firms operate in industries or cities where audit offices have leadership.

Insert Table 3 about here.

4.3. Importance of event clients

If the observed negative market reactions are a result of auditor distraction, then one would expect the market to react more negatively as the strength of the distraction rises. One way of testing this is by partitioning distracting events into relatively strong ones and relatively weak ones. In this section, the study employs the relative importance of the event client to the client in question for an audit office to proxy for the strength of the distraction from the event client. The intuition is that the more an auditor values an event client compared to the client in question, the more time the auditor will be willing to reallocate from the latter to the former when needed.

We define an event client to be important (unimportant) if its audit fees are at least 10% higher (lower) than the focal client. Table 4 presents the results of subsample analysis comparing distraction from important event firms (Models 1-2) with distraction from unimportant event firms (Models 3-4). The two subsamples are similar in size, while the coefficients of both *Different City* and *FYEnd Upcoming* are more economically and statistically significant in the subsample with important event clients. That is, the more important the event clients are relative to the client in question, the more negatively the market reacts to the client in question. This finding supports the mechanism of distraction and suggests stronger distraction causes more attention shifting in audit offices.

Insert Table 4 about here.

4.4. Importance of clients in question

Even if the same event is distracting the same auditor, other clients of the auditor are unlikely to experience the same level of drop in auditor attention. Different clients are likely to be treated differently. And once distraction happens, resources are likely to be taken away from

the least important clients first. To test this conjecture, we experiment with subsamples of unimportant and important clients in question separately. A client is defined as unimportant (important) to its audit office if its total assets account for less than (at least) 0.05% of the total assets of all clients of the audit office in a fiscal year. The cutoff of 0.05% is chosen so that the size of the two subsamples are similar, which warrants the comparison of statistical significance without the bias of sample size. Table 5 provides the results. The market reaction to auditor distraction is more negative (both economically and statistically) when the client in question is unimportant to the audit office. This evidence supports the conjecture that an unimportant client is more likely to be ignored by its auditor when external distraction occurs.

Insert Table 5 about here.

4.5. Amount of audit work due to M&As

An M&A serves as a distraction as it increases the workload of an auditor. Thus, the effect of distraction should be contingent upon the amount of additional work. With an M&A, the additional work for an acquirer auditor comes from its responsibility to ensure accounting consistency between the new subsidiary (i.e., target) and the parent (i.e., acquirer). For this reason, additional audit work should be relatively greater when the target and the acquirer use different audit firms. If the target and the acquirer are already using not only the same audit firm, but also the same audit office prior to the M&A, then the additional audit work required should be relatively less.

In Table 6, Models 1-2 present regressions where the acquirer (i.e., event client) and the target use different audit firms, while Models 3-4 include events where they use the same audit office. The coefficients of both *Different City* and *FYEnd Upcoming* are negative and statistically

strongly significant (at a 1%-5% levels) in Models 1-2 suggesting that market reacts negatively to auditor distraction when additional workload is high. These coefficients both become statistically insignificant when the target and the acquirer use the same audit office (as in Models 3-4).

Insert Table 6 about here.

5. Longer Term Impacts

To the extent that immediate market reaction reflects investors' expectations about the future, it is likely that auditor distraction also has longer term impacts on a firm. In order to confirm this and to determine the drivers of negative market reaction, we extend the analysis to longer term corporate outcomes. To form the sample, we use the annual data of clients with distracted auditors. It is important to note that while the sample is structured by firm and fiscal year, it is not panel data as it only covers those fiscal years when audit offices are distracted.

Table 7 examines the longer term consequences in three dimensions: earnings management, risk, and attention demanded from other monitors. Earnings management is tested as auditors are especially responsible for the accuracy of financial reports, which harnesses earnings manipulation by managers. For example, Dichev, Graham, Harvey, and Rajgopal (2013) find that large unexplained accruals are often indicative of financial misrepresentation. Following the prior literature (Jones 1991; Dechow, Sloan, and Sweeney 1995; Kothari, Leone, and Wasley 2005; Bergstresser and Philippon 2006; Gong, Louis, and Sun 2008; Hazarika, Karpoff, and Nahata 2012; Wang, Xie, and Zhu 2015), the study employs the absolute value of abnormal performance-adjusted accruals to measure earnings management. The regression of earnings management is shown in Model 1.

This study then analyzes the impact on stock-related risk, proxied by tail risk (Model 2), expected shortfall (Model 3), volatility (Model 4), and idiosyncratic volatility (Model 5). Theoretically, auditors serve as insurance providers to investors (DeAngelo 1981; Watts and Zimmerman 1981) and information intermediaries (Wallace 2004). Thus, a firm's stock returns should entail more risk when its auditor is distracted. Tail risk and expected shortfalls are the standard deviation and the average of extremely low returns, respectively, where extremely low returns are those returns that are within the bottom 5th percentile. In addition to these two measures for negative risk, we also capture the risk associated with all stock returns using volatility and idiosyncratic volatility. Volatility is the annualized standard deviation of stock returns, and idiosyncratic volatility is the annualized standard deviation of residuals from the Fama and French (1993) three-factor model. All four measures are calculated using daily stock returns.

Model 6 examines the impact of auditor distraction on the number of board meetings. The intuition is that the number of board meetings could reflect the amount of effort demanded from directors by a firm. When auditors are distracted, directors' workload may increase to address problems caused by a lack of auditor monitoring. Data regarding the number of board meetings is from Execucomp (data available until 2006) and GMI Ratings. The number of board meetings from GMI Ratings ranges from zero to 300, with a mean of 8.4, a median of seven, and a 99th percentile of 24. Values below zero and above 24 are treated as missing.

Since the additional workload of an acquirer's auditor arises from the complexity in the consolidated reports (not because of additional M&A advice due to conflicts of interest), we expect the major distraction of an auditor to ensue from the announcement date of an M&A. This implies that auditor distraction that begins at the end of a fiscal year is likely to have much

weaker firm-level impact than a distraction starting at the earlier half of a fiscal year. We take this into account and reflect it in the measurement of the dependent variables. Specifically, for abnormal accruals and the number of meetings, we use values in the fiscal year t ($t+1$) if another client's M&A is announced during the first (second) half of the fiscal year of the client in question. Measures of stock risk, including tail risk, expected shortfall, volatility, and idiosyncratic volatility are based on daily stock returns and measured over the subsequent 252 trading days after an M&A is announced by another client of the same audit office. If 252 trading days of return data are not available, we use the actual number of trading days of data available with a minimum requirement of 21 trading days. If other clients announce more than one M&A during the fiscal year of the client in question, we choose the earliest M&A announcement date to determine the timing of the measurement of the dependent variables.

Admittedly, an auditor may need to deal with one case for years. However, the feature of the limited attention of an auditor would not hold in the long run thereby preventing attention shifting as new audit personnel could be hired by the team thereby increasing its total capacity. Thus, this study does not investigate extended periods of firm-level impact.

The models include all of the control variables, except for stock run-up, used in the regression analysis of market reaction. All regressions include interacted industry and year fixed effects to capture industry trends and standard errors are robust and clustered by firm.

Table 7 tabulates the results using *Different City* as the key independent variable. Partitioning treatments and controls using *FYEnd Upcoming* would generate consistent results, but is omitted for brevity. The coefficient of *Different City* is positive and significant in all of the models. Thus, auditor distraction encourages earnings manipulation by a client's managers, exposing a client's shareholders to greater downside risk, and overall risk, and increasing a

client's directors' workload. These findings highlight the important role of auditors in maintaining accounting quality and restraining firm risk, and point to the potential substitutory effects between the board of directors and the auditors. It also provides evidence that the effect of temporary auditor distraction is significant enough to cause impacts that cannot be easily reversed within a fiscal year.

6. Robustness

6.1. Opposite shock to auditor attention

As opposed to temporarily distracting an auditor, an attention shock could also exogenously make an auditor less distracted. In this section, we explore a positive shock to auditor attention by focusing on the audit offices of targets in M&As. After a takeover, the target auditor is likely to become less busy due to the loss of a client. Using the previously constructed sample of M&As and further restricting the targets to those that are covered in Audit Analytics, we do find that other clients of the target audit offices, on average, experience a positive market reaction. This suggests the market expects auditors to increase their focus on other clients when one of its clients is the target of a takeover. It also complements the previous findings and support that the market values auditor's attention allocation.

One drawback with this analysis is that target firms are generally delisted after an M&A and we cannot verify whether the auditor of a target is actually changed or not. Focusing on a sample of M&As that seek more than 50% of control in the target post-transaction ensures that the sample only includes cases that cause significant attention shocks. This means that target firms are unlikely to remain public post-M&A listings following the Nasdaq and NYSE listing

rules.⁹ Thus, their auditor information is typically not in Audit Analytics, which covers SEC registrants. However, it is generally expected that a subsidiary (i.e., the target post-M&A) is likely to have the same auditor as its parent for efficiency reasons. In addition, to the extent that this sample include cases where targets keep their auditors post-M&A, the findings are only conservative.

6.2. Fraction of a client's audit work conducted by the signing office

One constraint of this data is that only the audit office of the engagement partner in charge signs on a client's financial reports, while more than one audit office could conduct audit work together for the same client at the same time. This weakens the effect of distraction as the observed signing office may only contribute partially to the audit process of the client in question and, as such, may not cause severe problems once distracted. In addition, other audit offices could undertake more work when the signing office, cannot making substitutory effects among audit offices particularly likely.

While this research cannot confirm from the data whether the signing office is the only audit office that performs audit work for a specific client, it can infer the relative level of responsibility of the signing office to a specific client through the supply of local offices by the same audit firm. The intuition is that for efficiency reasons, an audit firm is unlikely to fly their auditors to a client's city if it has a local audit office in the client's city. Thus, a signing office is especially unlikely to undertake all of the audit work for the client when the audit firm has another office located in the same city as the client. Table 8 makes use of this feature and partitions the sample by whether the audit firm has another audit office in the city of the client in

⁹ Rules for continued listing can be found through <https://listingcenter.nasdaq.com/assets/continuedguide.pdf> and https://www.nyse.com/publicdocs/nyse/markets/nyse-mkt/MKT_Continued_Listing_Standards.pdf.

question. Both the market reaction and the firm-level impact are strong in the subsample where there is no other office. The results become largely insignificant in the subsample where there are other offices. These results confirm that distraction effects are stronger (weaker) when more (less) of a client's audit work is performed by the signing audit office. To the extent that the audit work of some clients in the sample is jointly performed by multiple audit offices, the tabulated results are likely to be understated.

Insert Table 8 about here.

6.3. Identification of audit offices

In the main analysis, an audit office is defined as the combination of the audit firm and the office city location to be consistent with the existing literature on audit offices (e.g., Francis and Yu 2009; Francis, Michas, and Yu 2013). However, an audit firm could have more than one office in a city, which is most likely for large audit firms. Misclassifying different offices as a single office is problematic as a distracted audit office could turn out to be undistracted (i.e., it is another office of the same audit firm in the same city that is distracted). Considering that different offices of the same audit firm and city usually have different client bases, they may not combine resources quickly when one is distracted which calls for different treatment of these firms.

We address this potential problem by hand-collecting data of audit offices of Big-4 audit firms. Appendix B provides a list of offices of the top four audit firms that are located in the same cities. It is important to note that having more than one office in one city is most likely for large audit firms and highly unlikely for small audit firms. Table 9 divides the sample into two subsamples and repeats all of the regression analysis. The first subsample includes offices of the

top four audit firms that are located in cities where the associated audit firm has more than one office (i.e., those listed in Appendix B). The other subsample includes all of the other audit offices. While the first sample includes observations that are known to be subject to office misclassification issues, offices in the subsample are either offices of the top four audit firms that cannot be misclassified or offices of audit firms other than the top four that are unlikely to encounter this problem. The results are very strong in the second subsample, while insignificant in the first subsample.

Insert Table 9 about here.

6.4. Distracting events

This section evaluates the distraction effect of two alternative distraction events. The first is shareholder class action lawsuits with allegations of “accounting irregularities” or “accounting GAAP or GAAS violations” collected from the Stanford Law School Securities Class Action Clearinghouse. The second includes restatements for reasons other than accounting or clerical application errors extracted from Audit Analytics. These two events are considered because auditors are closely involved in both scenarios and could even face serious legal liability.

Using these two distraction events, we then form the sample of clients with distracted auditors in the same way as outlined in Section 0. In particular, an event date is the filing date in the case of a lawsuit and the earliest disclosure date in the case of a restatement.¹⁰ The market reacts strongly negatively to clients with audit offices distracted by either event.¹¹ When studying

¹⁰ This study treats restatements of the same or overlapping restated periods to be one restatement.

¹¹ In the case of lawsuits, we use a wider window (-21, 2) because Fich and Shivdasani (2007) and Karpoff, Lee, and Martin (2008) both find that the cumulative abnormal returns of a firm announcing lawsuits becomes negative about

the longer term consequences using yearly data, we define an audit office to be distracted in the fiscal year when the class period starts in the case of lawsuits, and in the fiscal year of the earliest disclosure date in the case of a restatement. The study employs the class period starting date instead of the filing date as an auditor is likely to become distracted at the beginning of a class period, while the public may not be aware of it until close to the filing date. We find having auditors being distracted by lawsuits or restatements have negative longer term impacts in terms of accounting quality, risk, and directors' workload.

This study does not use lawsuits and restatements for the primary analysis as both of them are negative events. Thus, the effects of distraction may compound with revelation of low auditor quality (see e.g., reputation effects as in Chaney and Philipich (2002) and the contagion effects as in Francis and Michas (2012)). However, it is important to note that the findings in Chaney and Philipich (2002) and Francis and Michas (2012) would not be able to fully explain the results in this section as both the treatment and the control firms are clients of the same audit offices facing the same auditor reputation and audit quality. Thus, the literature that focuses on commonality among clients of the same audit office would not uncover differences between the treatment and the control firms.

6.5. Matching

This paper has used two different methods to partition the treatment and the control groups: city location and the fiscal year-ends of clients. Because consistent results are obtained using both methods, which are generally uncorrelated with firm characteristics, the results are

one calendar month prior to the filing date. This suggests public awareness of a lawsuit starts about 21 trading days before its filing date.

unlikely to be driven by systematic differences between the treatment and the control firms.¹² In this section, we take further measures to eliminate the possibility of systematic differences. In particular, we match the treatment and the control groups by their Fama and French (1997) 48 industry, fiscal year, and 5% radius of total assets. The baseline results hold with this matching procedure irrespective as to whether the city location or the fiscal year-ends are used in creating the treatment and the control groups. The sample size for the subsample analysis decreases significantly, and the results become less statistically significant when compared to subsample analysis without matching.

6.6. Expectations about auditor distraction

An audit office could have multiple clients announcing M&As at different times in a fiscal year. Thus, a client in question could experience multiple event dates of auditor distraction in a fiscal year. However, only the first one occurs while the auditor is not already distracted. That is, later event dates in a fiscal year may not trigger strong market reactions as the market already expects the auditor to be distracted during the fiscal year.

This section examines a subsample of events that are unlikely to be expected, consisting of the earliest event date of each client and fiscal year observation. We then perform regression analysis of the market reaction to these less expected auditor distractions. The results are consistent with the tabulated ones, while the statistical significance drops slightly. This suggests that while only the initial announcement of distraction in a year represents the biggest surprise to investors, the follow-up announcements also provide information.

¹² At maximum, fiscal year-ends of the treatment and the control firms would differ by 180 days. To address the issue that most U.S. firms have fiscal year-ends in December and those that do not might be systematically different, we examine a subsample of distraction events that occur from April to August, inclusive. By definition, neither the treatment nor the control clients can have fiscal year-ends in December. Systematic differences are particularly unlikely in this subsample. The main results are robust to this subsample.

6.7. Rival Firms

In this section, we consider material economic relationships between firms-in-question and event firms. In particular, we exclude firms that are rivals with the event firms from the analysis. We use the baseline TNIC database downloaded from the Hoberg-Phillips Data Library to identify rival firms. Following the literature (Hoberg and Phillips 2010; 2016), we identify a firm's rivals as the top ten firms most similar to it. In Table 10, we find that the results are robust in the subsample excluding rival firms.

7. Conclusion

This study uses a new shock, auditor distraction, to study the influence of auditors. It employs M&As that occur to other clients of an audit office as a distracting event as audit work typically rises for acquirer auditors. In addition, M&As decisions are usually not driven by an auditor and are unlikely to be associated with the quality of an auditor. As a shock to auditor attention, distraction is particularly helpful in mitigating endogeneity concerns because its occurrence is exogenous (to the clients in question), temporary, and may be repeated. Also, distracted auditors are usually not replaced.

The treatment and control firms in this paper are clients of the same audit offices. They are partitioned based on city location and fiscal year-ends, both of which are unlikely to be associated with other firm characteristics. Thus, the treatment and the control clients both suffer from distraction of the same auditor due to the same event at the same time. The only difference is a treatment firm (i.e., a client that is located in a different city from the audit office, or a client that is about to have a fiscal year-end when an M&A is announced at another client) is likely to be influenced much more by auditor distraction than a control firm.

The treatment clients experience significantly more negative market reaction than the control clients. The treatment effects are especially evident if the event clients are important (reflected by auditor leadership and relative audit fees), the clients in question are small clients for their audit offices, or the distracting M&As demand a lot of additional audit work. In the longer term, the negative market reaction to auditor distraction is materialized into higher levels of earnings management, crash risk, stock return volatility, and directors' workload. The study conducts several robustness checks, including a positive shock to auditor attention (i.e., less distracted due to losing one client that is targeted in an M&A), alternative distracting events (i.e., lawsuits and restatements), and market expectations about auditor distraction. This research also addresses potential biases due to multiple audit offices conducting audit work together for a client without reporting it and the misclassification of audit offices. The results are supportive and robust.

Using innovative experimental setups, this paper provides large-sample and endogeneity-free empirical evidence regarding the roles of auditors as information intermediaries and insurance providers. It fills the niche of literature concerning audit offices. To our knowledge, this is the first paper that sheds light on the time-varying attention allocation of an audit office to different clients in its portfolio.

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Table 1. Summary Statistics

This table provides the summary statistics of the main variables at the distraction event level (Panel A), the audit office level (Panel B), and the client level (Panel C) from 2000-2015. All variable definitions are reported in Appendix A.

Panel A. Summary statistics at the distraction event level

	N	SD	Mean	Median	p25	p75
CAR (-2, 2)	112,824	0.059	-0.001	-0.002	-0.026	0.024
Different City	112,831	0.465	0.683	1	0	1
FYEnd Upcoming	56,882	0.5	0.504	1	0	1
Stock Runup	112,831	0.54	0.061	-0.01	-0.194	0.2

Panel B. Summary statistics at the audit office level

	N	SD	Mean	Median	p25	p75
# of Clients	2,371	23.911	20.199	13	7	22
Industry Leader	2,371	0.417	0.224	0	0	0
City Leader	2,371	0.497	0.443	0	0	1
Short Tenure	2,371	0.374	0.168	0	0	0

Panel C. Summary statistics at the client level

	N	SD	Mean	Median	p25	p75
Ab Accruals	18,872	2.58	0.404	0.062	0.022	0.183
Vol (Daily)	19,407	0.271	0.452	0.399	0.292	0.546
Idio Vol (Daily)	19,407	0.25	0.381	0.332	0.238	0.461
Tail Risk	19,407	0.035	0.065	0.057	0.041	0.079
Expected Shortfall	19,407	0.031	0.06	0.053	0.038	0.072
# of Meetings	15,227	3.373	7.908	7	6	9
Assets (\$mil)	19,499	15,102.59	4,841.035	851.543	279.407	3,038.15
ROA	19,493	0.256	0.103	0.125	0.068	0.189
OCF / Assets _{t-1}	19,479	0.267	0.009	0.046	-0.006	0.091
Cash / Assets _{t-1}	19,447	0.158	0.145	0.095	0.033	0.2
Volatility	17,798	0.261	0.489	0.438	0.317	0.598
Audit Fees	19,499	3,972,430	2,582,228	1,322,000	736,240	2,699,560
Non-Audit Fees	19,499	1,829,864	644,602.6	180,000	44,325	558,245
Influence	19,499	0.095	0.064	0.029	0.012	0.075
# of Bus Seg	19,499	1.965	2.513	1	1	4
# of Geo Seg	19,499	2.865	3.128	2	1	4
Weakness	19,499	0.846	0.158	0	0	0
Tangible _t	19,416	0.2	0.803	0.866	0.679	0.977
Institutional Own	19,499	0.28	0.693	0.736	0.541	0.87

Table 2. Market Reaction to Auditor Distraction

This table presents the results from multivariate OLS analysis of market reaction to auditor distraction for fiscal years 2000-2015. The dependent variable is the cumulative abnormal return for an event window of (-2, 2) around the announcement date of an M&A at another client of the same audit office. *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. *FYEnd Upcoming* is an indicator that is equal to one if the time to the next fiscal year-end of a client is less than 30 days when an M&A is announced by another client of the same audit office, and zero if it is more than 270 days. All of the variable definitions are reported in Appendix A. All of the models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)
Different City	-0.002** (0.011)	
FYEnd Upcoming		-0.002*** (0.009)
Ln(Assets) _{t-1}	-0.001* (0.083)	0.000 (0.934)
Growth(Assets) _{t-1}	-0.000 (0.524)	-0.000 (0.693)
ROA _{t-1}	0.002** (0.040)	0.001 (0.399)
OCF _{t-1} / Assets _{t-2}	0.000** (0.046)	0.000 (0.419)
Cash / Assets _{t-1}	-0.006** (0.035)	-0.003 (0.525)
Volatility _{t-1}	0.002 (0.232)	0.004* (0.091)
Stock Run-up	-0.033*** (0.000)	-0.031*** (0.000)
# of Clients	0.000 (0.214)	0.000 (0.805)
Ln(Audit Fees)	0.000 (0.415)	-0.000 (0.888)
Ln(Non-Audit Fees)	-0.000 (0.969)	0.000 (0.816)
Influence	0.004 (0.398)	0.002 (0.832)
Industry Leader	0.001* (0.098)	0.002 (0.106)
City Leader	0.001 (0.330)	0.000 (0.999)
Short Tenure	0.000 (0.899)	0.001 (0.674)
# of Bus Seg	0.000 (0.527)	0.000 (0.658)
# of Geo Seg	0.000 (0.108)	-0.000 (0.748)
Weakness	-0.001** (0.029)	-0.000 (0.977)
Tangible _{t-1}	0.002 (0.361)	-0.001 (0.633)
Institutional Own	0.002 (0.306)	-0.000 (0.883)
Observations	112,824	56,879
Adjusted R-squared	0.040	0.046

Table 3. Market Reaction and Auditor Leadership at an Event Client's City/Industry

This table presents the results from subsample analysis of market reaction by auditor leadership at an event client's city/industry for fiscal years 2000-2015. The dependent variable is the cumulative abnormal return for an event window of (-2, 2) around the announcement date of an M&A at another client (i.e., event client) of the same audit office. Models 1-4 and 5-8 partition the sample by whether the audit office is the number one office in terms of total fees in the Fama and French (1997) 48 industry and in the city of the event client in a fiscal year, respectively. *Different City* is an indicator of equal to one if a client is located in a different city from its audit office, and zero otherwise. *FYEnd Upcoming* is an indicator equal to one if the time to the next fiscal year-end of a client is less than 30 days when an M&A is announced by another client of the same audit office, and zero if it is more than 270 days. All variable definitions are reported in Appendix A. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	Is the audit office an industry leader?				Is the audit office a city leader?			
	Yes		No		Yes		No	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Different City	-0.005*** (0.000)		-0.000 (0.466)		-0.002** (0.013)		-0.001 (0.220)	
FYEnd Upcoming		-0.007*** (0.004)		-0.001* (0.095)		-0.002*** (0.004)		-0.000 (0.662)
Ln(Assets) _{t-1}	0.000 (0.839)	-0.000 (0.703)	-0.000 (0.597)	-0.000 (0.762)	-0.001** (0.011)	-0.000 (0.338)	-0.000 (0.792)	0.000 (0.637)
Growth (Assets) _{t-1}	-0.000 (0.729)	-0.000 (0.186)	0.000 (0.158)	-0.000 (0.793)	0.000 (0.493)	-0.000* (0.095)	-0.000 (0.586)	-0.000 (0.234)
ROA _{t-1}	-0.002 (0.538)	-0.002 (0.785)	0.002** (0.012)	0.001 (0.683)	0.001 (0.585)	-0.004 (0.199)	0.002 (0.113)	0.000 (0.947)
OCF _{t-1} / Assets _{t-2}	0.003*** (0.004)	0.010* (0.070)	0.000** (0.013)	0.000 (0.707)	-0.000 (0.843)	0.005* (0.069)	0.000 (0.139)	0.000 (0.994)
Cash / Assets _{t-1}	-0.006 (0.300)	-0.009 (0.351)	-0.001 (0.459)	-0.002 (0.362)	-0.005 (0.191)	-0.005 (0.213)	-0.006* (0.082)	-0.002 (0.472)
Volatility _{t-1}	-0.001 (0.847)	0.008 (0.181)	0.000 (0.706)	0.001 (0.323)	0.001 (0.742)	0.001 (0.798)	0.003 (0.224)	0.003 (0.142)
Stock Runup	-0.019*** (0.000)	-0.018*** (0.000)	-0.014*** (0.000)	-0.013*** (0.000)	-0.035*** (0.000)	-0.014*** (0.000)	-0.031*** (0.000)	-0.013*** (0.000)
# of Clients	-0.000* (0.080)	-0.000 (0.161)	0.000 (0.287)	-0.000 (0.687)	0.000*** (0.001)	0.000 (0.382)	-0.000* (0.063)	-0.000* (0.063)
Ln(Audit Fees)	-0.000 (0.383)	0.000 (0.267)	0.000 (0.425)	0.000 (0.886)	0.000 (0.127)	0.000 (0.683)	-0.000 (0.578)	-0.000 (0.422)
Ln(Non-Audit Fees)	0.000 (0.410)	0.000 (0.473)	-0.000 (0.370)	-0.000 (0.548)	-0.000** (0.022)	-0.000 (0.141)	0.000 (0.114)	0.000* (0.094)
Influence	-0.015 (0.668)	-0.060 (0.133)	-0.001 (0.866)	0.001 (0.778)	0.010 (0.115)	0.006 (0.365)	-0.002 (0.773)	-0.004 (0.526)
Industry Leader	-0.001 (0.639)	-0.002 (0.462)	-0.000 (0.927)	0.000 (0.507)	0.000 (0.857)	-0.001 (0.406)	0.002** (0.025)	0.001 (0.338)
City Leader	-0.001 (0.430)	-0.000 (0.837)	0.000 (0.361)	0.000 (0.907)	0.000 (0.969)	-0.001 (0.401)	0.001 (0.170)	0.001 (0.274)
Short Tenure	-0.003 (0.288)	-0.009** (0.049)	-0.000 (0.639)	-0.001 (0.410)	0.000 (0.756)	-0.001 (0.321)	-0.000 (0.962)	-0.001 (0.501)
# of Bus Seg	0.000 (0.282)	0.000 (0.577)	0.000 (0.812)	-0.000 (0.969)	0.000 (0.952)	0.000 (0.560)	0.000 (0.350)	-0.000 (0.849)
# of Geo Seg	0.000* (0.097)	0.001** (0.044)	0.000 (0.898)	0.000 (0.317)	0.000 (0.125)	0.000 (0.293)	0.000 (0.523)	0.000 (0.421)
Weakness	-0.000 (0.707)	-0.002 (0.108)	-0.001** (0.021)	-0.000 (0.212)	-0.002*** (0.008)	-0.000 (0.873)	-0.001 (0.252)	-0.001* (0.062)
Tangible _{t-1}	0.005 (0.233)	0.002 (0.797)	0.001 (0.638)	0.000 (0.802)	-0.001 (0.744)	0.000 (0.909)	0.003 (0.197)	-0.000 (0.886)
Institutional Own	0.001 (0.689)	-0.007 (0.202)	-0.001 (0.545)	-0.002 (0.128)	0.001 (0.549)	-0.002 (0.419)	0.002 (0.278)	-0.002* (0.070)
Observations	10,381	5,112	102,845	51,982	52,535	27,089	61,461	30,456
Adjusted R-squared	0.015	0.033	0.018	0.021	0.038	0.016	0.041	0.025

Table 4. Market Reaction and Importance of Event Clients

This table presents the results from subsample analysis of market reaction by importance of event clients for fiscal years 2000-2015. The dependent variable is the cumulative abnormal return for an event window of (-2, 2) around the announcement date of an M&A at another client (i.e., event client) of the same audit office. Models 1-2 (3-4) include events in which event clients are important (unimportant) to an audit office. An event client is important (unimportant) if its audit fees are at least 10% higher (lower) than the focal client. *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. *FYEnd Upcoming* is an indicator equal to one if the time to the next fiscal year-end of a client is less than 30 days when an M&A is announced by another client of the same audit office, and zero if it is more than 270 days. All variable definitions are reported in Appendix A. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with p -values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	Important		Unimportant	
Different City	-0.002* (0.055)		-0.001 (0.206)	
FYEnd Upcoming		-0.003** (0.034)		-0.002* (0.092)
Ln(Assets) _{t-1}	-0.001* (0.064)	-0.001* (0.065)	-0.000 (0.717)	0.001 (0.319)
Growth(Assets) _{t-1}	-0.000** (0.036)	-0.000 (0.489)	0.000 (0.112)	0.000 (0.703)
ROA _{t-1}	0.002* (0.055)	0.001 (0.486)	0.004 (0.187)	0.001 (0.762)
OCF _{t-1} / Assets _{t-2}	0.000* (0.074)	0.000 (0.659)	0.000 (0.183)	0.000 (0.758)
Cash / Assets _{t-1}	-0.008** (0.036)	-0.005 (0.374)	-0.002 (0.559)	-0.000 (0.974)
Volatility _{t-1}	0.000 (0.964)	-0.001 (0.800)	0.006*** (0.002)	0.010*** (0.007)
Stock Run-up	-0.032*** (0.000)	-0.030*** (0.000)	-0.033*** (0.000)	-0.034*** (0.000)
# of Clients	0.000 (0.668)	-0.000 (0.926)	0.000* (0.094)	0.000 (0.709)
Ln(Audit Fees)	0.000 (0.577)	0.000 (0.452)	0.000 (0.706)	-0.000 (0.311)
Ln(Non-Audit Fees)	0.000 (0.207)	0.000* (0.084)	-0.000 (0.312)	-0.000 (0.886)
Influence	0.010 (0.460)	0.019 (0.354)	0.007 (0.180)	0.001 (0.939)
Industry Leader	0.002* (0.051)	0.002* (0.099)	0.000 (0.688)	0.001 (0.270)
City Leader	0.001 (0.563)	0.000 (0.811)	0.000 (0.714)	0.000 (0.774)
Short Tenure	0.000 (0.893)	0.002 (0.435)	-0.001 (0.443)	-0.001 (0.556)
# of Bus Seg	-0.000 (0.754)	0.001* (0.055)	0.000 (0.614)	-0.000 (0.192)
# of Geo Seg	0.000 (0.114)	-0.000 (0.157)	0.000 (0.163)	0.000 (0.780)
Weakness	-0.001 (0.201)	-0.002 (0.112)	-0.001 (0.112)	0.001 (0.338)
Tangible _{t-1}	-0.001 (0.844)	-0.004 (0.221)	0.003 (0.190)	-0.000 (0.946)
Institutional Own	0.002 (0.488)	-0.000 (0.991)	0.002 (0.217)	-0.003 (0.318)
Observations	54,766	27,464	50,610	25,701
Adjusted R-squared	0.040	0.045	0.038	0.049

Table 5. Market Reaction and Importance of Clients

This table presents the results from subsample analysis of the market reaction by importance of clients for fiscal years 2000-2015. The dependent variable is the cumulative abnormal return for an event window of (-2, 2) around the announcement date of an M&A at another client of the same audit office. Models 1-2 (3-4) include events where the focal clients are unimportant (important) to an audit office. A client is unimportant (important) if its total assets account for less than (at least) 0.05% of the total assets of all clients of the audit office in a fiscal year. *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. *FYEnd Upcoming* is an indicator equal to one if the time to the next fiscal year-end of a client is less than 30 days when an M&A is announced by another client of the same audit office, and zero if it is more than 270 days. All variable definitions are reported in Appendix A. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	Unimportant		Important	
Different City	-0.002*		-0.001*	
	(0.060)		(0.082)	
FYEnd Upcoming		-0.003**		-0.002*
		(0.047)		(0.065)
Ln(Assets) _{t-1}	-0.002***	-0.002**	-0.000	0.000
	(0.004)	(0.049)	(0.403)	(0.494)
Growth(Assets) _{t-1}	-0.000	-0.000	-0.000	-0.000
	(0.186)	(0.339)	(0.959)	(0.474)
ROA _{t-1}	0.002	-0.002	0.000	-0.001
	(0.606)	(0.664)	(0.769)	(0.642)
OCF _{t-1} / Assets _{t-2}	0.001	0.005	0.000	-0.000
	(0.686)	(0.206)	(0.782)	(0.633)
Cash / Assets _{t-1}	-0.006	0.000	-0.003	-0.009
	(0.101)	(0.957)	(0.580)	(0.210)
Volatility _{t-1}	0.002	0.004	0.002	0.002
	(0.469)	(0.195)	(0.460)	(0.509)
Stock Run-up	-0.037***	-0.036***	-0.028***	-0.026***
	(0.000)	(0.000)	(0.000)	(0.000)
# of Clients	0.000	-0.000	0.000**	0.000**
	(0.463)	(0.583)	(0.016)	(0.030)
Ln(Audit Fees)	0.000	-0.000	-0.000	-0.000
	(0.180)	(0.597)	(0.578)	(0.590)
Ln(Non-Audit Fees)	0.000	0.000**	0.000	-0.000
	(0.169)	(0.028)	(0.818)	(0.804)
Influence	0.067	0.096	0.006	0.008
	(0.220)	(0.355)	(0.170)	(0.273)
Industry Leader	0.002*	0.003**	0.001	0.000
	(0.054)	(0.045)	(0.315)	(0.683)
City Leader	0.001	-0.000	0.000	-0.000
	(0.428)	(0.786)	(0.770)	(0.866)
Short Tenure	0.001	0.003	-0.001	-0.001
	(0.368)	(0.146)	(0.396)	(0.546)
# of Bus Seg	0.000	0.001	0.000	-0.000
	(0.792)	(0.211)	(0.685)	(0.473)
# of Geo Seg	0.000*	0.000	-0.000	-0.000
	(0.099)	(0.784)	(0.860)	(0.186)
Weakness	-0.001**	-0.000	-0.001*	-0.001
	(0.050)	(0.794)	(0.066)	(0.473)
Tangible _{t-1}	-0.001	-0.005	0.003	0.003
	(0.854)	(0.234)	(0.159)	(0.423)
Institutional Own	0.001	-0.001	0.005**	0.005*
	(0.810)	(0.532)	(0.010)	(0.069)
Observations	55,906	28,088	56,918	28,791
Adjusted R-squared	0.044	0.053	0.036	0.046

Table 6. Market Reaction and Amount of Additional Audit Work due to M&As

This table presents the results from subsample analysis of the market reaction by amount of additional workload for an audit office for fiscal years 2000- 2015. The dependent variable is the cumulative abnormal return for an event window of (-2, 2), around the announcement date of an M&A at another client (i.e., event client) of the same audit office. Models 1-2 (3-4) include events where the acquirer (i.e., event client) and the target use different audit firms (the same audit office). *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. *FYEnd Upcoming* is an indicator equal to one if the time to the next fiscal year-end of a client is less than 30 days when an M&A is announced by another client of the same audit office, and zero if it is more than 270 days. All variable definitions are reported in Appendix A. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	Different Audit Firm		Same Audit Office	
Different City	-0.007*** (0.009)		-0.010 (0.152)	
FYEnd Upcoming		-0.009** (0.038)		-0.002 (0.856)
Ln(Assets) _{t-1}	-0.000 (0.851)	0.001 (0.637)	0.002 (0.474)	-0.003 (0.466)
Growth(Assets) _{t-1}	-0.000 (0.289)	-0.000 (0.378)	0.000 (0.969)	0.001 (0.953)
ROA _{t-1}	0.001 (0.886)	0.012 (0.622)	0.012 (0.657)	0.078* (0.083)
OCF _{t-1} / Assets _{t-2}	-0.002 (0.471)	-0.008 (0.769)	-0.020 (0.403)	-0.077 (0.127)
Cash / Assets _{t-1}	-0.019 (0.144)	-0.031 (0.127)	-0.026 (0.389)	-0.004 (0.924)
Volatility _{t-1}	-0.004 (0.637)	0.009 (0.411)	-0.000 (0.992)	0.014 (0.584)
Stock Run-up	-0.033*** (0.000)	-0.029*** (0.000)	-0.048*** (0.000)	-0.061*** (0.000)
# of Clients	-0.000 (0.803)	0.000* (0.096)	0.000 (0.812)	0.000 (0.300)
Ln(Audit Fees)	-0.000 (0.864)	0.000 (0.569)	-0.000 (0.659)	0.000** (0.046)
Ln(Non-Audit Fees)	-0.000 (0.897)	-0.000 (0.521)	-0.000 (0.987)	-0.000 (0.447)
Influence	-0.010 (0.638)	0.010 (0.772)	-0.074 (0.342)	-0.118 (0.312)
Industry Leader	-0.004 (0.147)	-0.004 (0.419)	-0.004 (0.649)	0.026 (0.153)
City Leader	0.003 (0.316)	-0.001 (0.846)	0.005 (0.489)	0.009 (0.521)
Short Tenure	0.011** (0.016)	0.010 (0.141)	0.006 (0.554)	0.016 (0.337)
# of Bus Seg	0.000 (0.713)	-0.000 (0.980)	0.000 (0.940)	0.001 (0.674)
# of Geo Seg	0.000 (0.447)	0.000 (0.601)	-0.000 (0.593)	-0.001 (0.503)
Weakness	0.002 (0.238)	-0.001 (0.744)	0.010 (0.237)	-0.012 (0.146)
Tangible _{t-1}	0.012 (0.156)	0.015 (0.206)	0.010 (0.617)	-0.020 (0.536)
Institutional Own	0.012** (0.039)	0.010 (0.240)	0.020 (0.185)	0.049** (0.050)
Observations	4,821	2,489	1,252	653
Adjusted R-squared	0.048	0.054	0.046	0.048

Table 7. Longer Term Impacts

This table presents the results from multivariate OLS analysis of the absolute value of abnormal accruals (Model 1), tail risk (Model 2), expected shortfall (Model 3), volatility (Model 4), and the idiosyncratic volatility (Model 5) of daily stock returns and the number of board meetings (Model 6) of a client for fiscal years 2000-2015. *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. All variable definitions are reported in Appendix A. Clients in the sample use the same audit offices with clients that have M&As during a fiscal year. Since only client years with auditor distraction (where other clients of an audit office have M&As) are covered, the data is not panel. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Dep Var	(1) Ab Accruals	(2) Tail Risk	(3) Exp Shortfall	(4) Vol (Daily)	(5) Idio Vol (Daily)	(6) # of Meetings
Different City	0.072*** (0.010)	0.002** (0.042)	0.002* (0.063)	0.006* (0.062)	0.006* (0.053)	0.237** (0.020)
Ln(Assets) _{<i>t-1</i>}	-0.015 (0.262)	-0.003*** (0.000)	-0.003*** (0.000)	-0.027*** (0.000)	-0.032*** (0.000)	0.146*** (0.003)
Growth(Assets) _{<i>t-1</i>}	-0.002 (0.500)	-0.000 (0.605)	-0.000 (0.782)	-0.000 (0.903)	-0.000 (0.905)	0.026*** (0.000)
ROA _{<i>t-1</i>}	0.026 (0.792)	-0.004* (0.051)	-0.003* (0.061)	-0.029** (0.042)	-0.029** (0.040)	-1.404*** (0.001)
OCF _{<i>t-1</i>} / Assets _{<i>t-2</i>}	0.000 (0.844)	-0.000 (0.822)	-0.001 (0.360)	-0.006 (0.334)	-0.005 (0.410)	0.504 (0.191)
Cash / Assets _{<i>t-1</i>}	0.028 (0.907)	0.003 (0.420)	0.002 (0.415)	0.041 (0.188)	0.055* (0.077)	0.333 (0.311)
Volatility _{<i>t-1</i>}	0.107 (0.105)	0.046*** (0.000)	0.041*** (0.000)	0.398*** (0.000)	0.370*** (0.000)	1.844*** (0.000)
# of Clients	0.000 (0.845)	0.000* (0.084)	0.000* (0.096)	0.000 (0.252)	0.000 (0.225)	0.004*** (0.006)
Ln(Audit Fees)	-0.000 (0.860)	-0.000 (0.638)	-0.000 (0.738)	0.000 (0.512)	0.000 (0.193)	0.000*** (0.008)
Ln(Non-Audit Fees)	-0.000 (0.233)	-0.000 (0.210)	-0.000 (0.304)	-0.000 (0.593)	-0.000 (0.782)	0.000 (0.361)
Influence	0.219 (0.323)	0.012*** (0.000)	0.011*** (0.000)	0.070*** (0.002)	0.074*** (0.000)	0.935** (0.032)
Industry Leader	-0.047 (0.150)	0.001 (0.156)	0.001 (0.259)	0.005 (0.297)	0.005 (0.308)	-0.015 (0.880)
City Leader	-0.016 (0.577)	-0.000 (0.995)	-0.000 (0.727)	0.003 (0.585)	0.003 (0.479)	-0.112 (0.213)
Short Tenure	0.029 (0.599)	0.002** (0.025)	0.002*** (0.006)	0.016** (0.013)	0.020*** (0.001)	0.458*** (0.000)
# of Bus Seg	0.012 (0.201)	-0.000* (0.064)	-0.000* (0.054)	-0.002* (0.074)	-0.002** (0.028)	0.037 (0.136)
# of Geo Seg	-0.017*** (0.004)	0.000 (0.246)	0.000* (0.100)	0.001* (0.081)	0.000 (0.729)	0.000 (0.984)
Weakness	-0.001 (0.938)	0.001** (0.026)	0.001** (0.022)	0.004 (0.111)	0.004 (0.122)	0.094 (0.113)
Tangible _{<i>t-1</i>}	0.285*** (0.000)	-0.001 (0.695)	0.000 (0.806)	-0.005 (0.692)	-0.016 (0.185)	-0.784*** (0.005)
Institutional Own	-0.134* (0.089)	-0.005** (0.042)	-0.005** (0.036)	-0.034* (0.064)	-0.056** (0.024)	0.615*** (0.000)
Observations	18,872	19,377	19,377	19,377	19,377	15,227
Adjusted R-sq	0.323	0.510	0.559	0.520	0.501	0.068

Table 8. Fraction of a Client's Audit Work Conducted by the Signing Office

This table presents subsample analysis by the level of responsibility of a signing audit office to a client for fiscal years 2000-2015. Panel A (Panel B) presents the multivariate OLS analysis of market reaction to auditor distraction (firm-level impacts). The level of responsibility of a signing audit office to a client is proxied by whether an audit firm has another audit office in the city of a client. The level of responsibility is considered to be higher if there are no other audit offices of the same audit firm, and lower if there is due to potential substitution effects. *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. All variable definitions are reported in Appendix A. Firms in the sample use the same audit offices as firms that have M&As during a fiscal year. Since only firm-years with auditor distraction (where other clients of an audit office have M&As) are covered, the data is not panel. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels respectively.

Panel A Market reaction

	(1)	(2)	(4)	(5)
	Does the audit firm have another audit office in the city of a client?			
	No		Yes	
Different City	-0.002*** (0.007)		-0.001* (0.070)	
FYEnd Upcoming		-0.002** (0.022)		-0.007* (0.054)
Observations	104,887	52,906	7,937	3,973
Controls	Same as Table 2			
Adjusted R-squared	0.040	0.047	0.030	0.055

Panel B. Longer term impacts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Does the audit firm have another audit office in the city of a client?											
	No						Yes					
Dep Var	Ab Accruals	Tail Risk	Exp Shortfall	Vol (Daily)	Idio Vol (Daily)	# of Meetings	Ab Accruals	Tail Risk	Exp Shortfall	Vol (Daily)	Idio Vol (Daily)	# of Meetings
Different City	0.071** (0.014)	0.003*** (0.004)	0.002** (0.011)	0.012* (0.099)	0.012* (0.100)	0.254** (0.015)	-0.004 (0.946)	0.001 (0.949)	0.004 (0.627)	0.021 (0.751)	0.031 (0.601)	-0.003 (0.993)
Observations	17,543	18,013	18,013	18,013	18,013	14,199	1,329	1,364	1,364	1,364	1,364	1,028
Controls	Same as Table 7											
Adjusted R-sq	0.336	0.530	0.578	0.564	0.548	0.074	0.167	0.392	0.443	0.128	0.100	0.096

Table 9. Misclassification of Multiple Audit Offices in a City as One Office

This table presents subsample analysis by the likelihood of misclassifying a non-distracted audit office as distracted due to fussy identification of audit offices by audit firm and city location for fiscal years 2000-2015. Panel A (Panel B) presents the multivariate OLS analysis of market reaction to auditor distraction (firm-level impacts). Models 1-2 in Panel A and Models 1-6 in Panel B include offices of Big 4 audit firms that are located in cities where the audit firm has more than one office. Other models exclude such offices and include offices of Big 4 audit firms that cannot be misclassified by city location, as well as offices of non-Big 4 audit firms. The latter are also unlikely to be misclassified as smaller audit firms are less likely to have more than one office in one city. Appendix B provides a list of offices of Big 4 audit firms that are located in the same cities. *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. All variable definitions are reported in Appendix A. Firms in the sample use the same audit offices as firms that have M&As during a fiscal year. Since only firm-years with auditor distraction (where other clients of an audit office have M&As) are covered, the data is not panel. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Panel A. Market reaction

	(1)	(2)	(3)	(4)
	Offices of Big 4 Audit Firms located in Multi-Office Cities		Other Offices	
Different City	-0.000 (0.754)		-0.002** (0.019)	
FYEnd Upcoming		-0.001 (0.342)		-0.002*** (0.001)
Observations	15,184	7,552	97,640	49,323
Controls		Same as Table 2		
Adjusted R-squared	0.032	0.017	0.041	0.010

Panel B. Longer term impacts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Offices of Big 4 Audit Firms located in Multi-Office Cities						Other Offices					
Dep Var	Ab Accruals	Tail Risk	Exp Shortfall	Vol (Daily)	Idio Vol (Daily)	# of Meetings	Ab Accruals	Tail Risk	Exp Shortfall	Vol (Daily)	Idio Vol (Daily)	# of Meetings
Different City	0.021 (0.736)	0.005 (0.437)	0.003 (0.585)	-0.009 (0.819)	-0.013 (0.714)	0.322 (0.384)	0.069** (0.024)	0.002** (0.037)	0.002** (0.050)	0.010 (0.274)	0.010 (0.227)	0.245** (0.021)
Observations	2,301	2,324	2,324	2,324	2,324	1,919	16,571	17,053	17,053	17,053	17,053	13,308
Controls						Same as Table 7						
Adjusted R-sq	0.310	0.596	0.638	0.646	0.639	0.073	0.329	0.501	0.552	0.506	0.487	0.067

Table 10. Rival Firms

This table presents subsample analysis of firms without rival relationships with event firms over 2000-2015. We use the baseline TNIC database downloaded from the Hoberg-Phillips Data Library to identify rival firms. Following the literature (Hoberg and Phillips 2010; 2016), we identify a firm's rivals as the top ten firms most similar to it. Panel A (Panel B) presents the multivariate OLS analysis of market reaction to auditor distraction (firm-level impacts). *Different City* is an indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. All variable definitions are reported in Appendix A. Firms in the sample use the same audit offices as firms that have M&As during a fiscal year. Since only firm-years with auditor distraction (where other clients of an audit office have M&As) are covered, the data is not panel. All models include interacted industry and year fixed effects. Standard errors are robust to heteroskedasticity and clustered by client with *p*-values in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Panel A. Market reaction

	(1)	(2)
Different City	-0.002***	
	(0.009)	
FYEnd Upcoming		-0.002***
		(0.010)
Observations	112,836	57,031
Controls	Same as Table 2	
Adjusted R-squared	0.040	0.046

Panel B. Longer term impacts

	(1)	(2)	(3)	(4)	(5)	(6)
Dep Var	Ab Accruals	Tail Risk	Exp Shortfall	Vol (Daily)	Idio Vol (Daily)	# of Meetings
Different City	0.077***	0.002**	0.002*	0.005	0.005	0.216**
	(0.009)	(0.049)	(0.078)	(0.517)	(0.504)	(0.035)
Observations	15,339	8,345	8,345	8,345	8,345	14,465
Controls	Same as Table 7					
Adjusted R-sq	0.316	0.507	0.557	0.516	0.497	0.069

Appendix A. Variable Definitions

Variable	Definition
CAR (-2, 2)	Cumulative abnormal returns for the event window of (-2, 2) of an event date calculated using the market model benchmark method. Benchmark parameters are estimated using the value-weighted CRSP index as a proxy for market returns over days (-210,-11). Source: Compustat.
Stock Runup	Buy-and-hold return (%) of a client's stock from day -211 to -10 of an event date. Source: CRSP.
Different City	An indicator equal to one if a client is located in a different city from its audit office, and zero otherwise. Source: Audit Analytics.
FYEnd Upcoming	An indicator equal to one if the time to the next fiscal year-end of a client is less than 90 days when an M&A is announced by another client of the same audit office, and zero if it is more than 270 days (which is equivalent to the last fiscal year-end within 90 days prior to the date of the M&A announcement, as long as the fiscal year-end has not changed during the year). Source: Compustat.
Ab Accruals	Absolute value of the abnormal accruals of a client in a fiscal year. First, we follow Dechow, Sloan, and Sweeney (1995) and use the modified Jones (1991) model to estimate abnormal accruals. Next, we follow Kothari, Leone, and Wasley (2005) and Gong, Louis, and Sun (2008) to adjust abnormal accruals for firm performance. Last, we take the absolute value of the computed abnormal accruals following Wang, Xie, and Zhu (2015).
Tail Risk	Tail risk of a client during the subsequent 252 trading days after an M&A is announced by another client of the same audit office. It is calculated as $\sqrt{\sum (R_i - E(R_i))^2}$, where R_i is all of the daily stock returns of firm i that are within the bottom 5th percentile and $E(R_i)$ is the mean value of all daily stock returns of firm i during the subsequent 252 trading days after the event date. If 252 trading days of return data are not available, we use the actual number of trading days of data available with a minimum requirement of 21 trading days. Source: CRSP.
Exp Shortfall	The average of a client's daily stock returns that are within the bottom 5th percentile during the subsequent 252 trading days after an M&A is announced by another client of the same audit office. If 252 trading days of return data are not available, we use the actual number of trading days of data available with a minimum requirement of 21 trading days. Source: CRSP.
Vol (Daily)	Annualized standard deviation of daily stock returns of a client during the subsequent 252 trading days after an M&A is announced by another client of the same audit office. If 252 trading days of return data are not available, we use the actual number of trading days of data available with a minimum requirement of 21 trading days. Source: CRSP.
Idio Vol (Daily)	A client's annualized standard deviation of residuals from a Fama and French (1993) three factor model using daily stock returns during the subsequent 252 trading days after an M&A is announced by another client of the same audit office. If 252 trading days of return data are not available,

	we use the actual number of trading days of data available with a minimum requirement of 21 trading days. Source: CRSP.
# of Meetings	The number of board meetings during the year. Values lower than zero or higher than 24 are treated as missing. Source: Execucomp, GMI Ratings.
Short Tenure	An indicator equal to one if an audit firm's tenure is three years or less, and zero otherwise.
Industry Leader	An indicator equal to one if an audit firm is the number one audit firm in terms of total fees in the Fama and French (1997) 48 industry of a client in a fiscal year, and zero otherwise. Fama and French (1997) 48 industry codes are converted from historical SIC codes from Compustat.
City Leader	An indicator equal to one if the audit office is the number one office in terms of total fees in the city of a client in a fiscal year, and zero otherwise. City location of clients and audit offices is from Audit Analytics.
Audit Fees	A client's audit fees in a fiscal year. Source: Audit Analytics.
Non-Audit Fees	A client's non-audit fees in a fiscal year. Source: Audit Analytics.
Influence	The ratio of a client's total fees (=Audit Fees + Non-Audit Fees) relative to total fees of all SEC registrants of the audit office in a fiscal year. Source: Audit Analytics.
Weakness	The number of material internal control weaknesses of a client in a fiscal year. Source: Audit Analytics.
Assets	A client's total assets at the end of a fiscal year: Item6. Ln(Assets) is the natural log of total assets. Growth(Assets) is the one-year growth rate of assets. Source: Compustat.
ROA	A client's operating income before depreciation during a fiscal year, divided by beginning-year total assets: Item13 / lag(Item6). Source: Compustat.
OCF	A client's annual cash flow from operations during a fiscal year: Item308. Source: Compustat.
Cash	A client's cash during a fiscal year: Item162. Source: Compustat.
Volatility	A client's annualized standard deviation of monthly stock return during the latest 60 months starting retrospectively from the fiscal year-end date. If 60 months of return data are not available, we use the actual number of months of data available with a minimum requirement of 12 months. If fewer than 12 months are available, then the average volatility of the S&P1500 is used. Source: CRSP.
Tangible	A client's ratio of tangible assets, computed as one minus the ratio of total intangible assets relative to total assets at the end of a fiscal year: 1 - Item33 / Item6. Source: Compustat.
# of Bus Seg	The number of business segments. Missing values are recoded as one. Source: Compustat.
# of Geo Seg	The number of geographic segments. Missing values are recoded as one. Source: Compustat.
Institutional Own	A client's proportion of ownership from institutional shareholders in a fiscal year. Source: Thomson Reuters Institutional (13f) Holdings (Stock Ownership Summary).

Appendix B. Cases Where a Big 4 Audit Firm Has More Than One Office in One City

Deloitte

California: San Fran-555 Mission & San Francisco-Heat
Colorado: Denver & Deloitte Digital
District of Columbia: DC – 555 12th St. NW & Washington
New Jersey: Jersey City & Jersey City
New York: NYC – 30 Rock (HQ) & NYC – 140 Broadway
Ohio: Dayton & Dayton
Texas: Austin & Austin & Austin
Washington: Seattle & Seattle

KPMG

Boston: Boston – 60 South Street & Boston – Two International Place
Dallas: Dallas – 2323 Ross Ave & Dallas – 2525 McKinnon Street
Denver: Denver – 17th Street & Denver – 18th Street
New York: New York – Executive Offices & New York – Third Avenue & New York – Park Avenue & New York – Avenue of the Americas

PWC

California: Los Angeles & Los Angeles – Experience Center
Florida: Tampa ESC & Tampa & Tampa
Illinois: Chicago & Chicago
New York: New York & New York
Ohio: Cleveland & Cleveland
Washington D.C.: Washington D.C. & Washington D.C.

Ernst & Young

Washington: EY & Washington Council EY
Florida: EY & EY (Jacksonville)
New Jersey: EY & EY & EY (Secaucus)
Texas: EY & EY (Dallas)
Texas: EY & EY (San Antonio)