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Auditor selection following auditor turnover: Do peers' choices matter?☆

Xudong (Daniel) Li [a], Lili Sun [b], Michael Ettredge [c, *]

[a] Leon Hess Business School, Monmouth University, United States
[b] University of North Texas, United States
[c] University of Kansas, United States

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ABSTRACT

Drawing on social norms and social learning theories, this study investigates the influences of peer (similar) firms' prior choices on whether or not a client chooses to affiliate with a "social norm" audit office in its metropolitan area, following auditor turnover. The office in a metro area auditing the largest number of peer firms along a given similarity dimension is considered to be the social norm office for that dimension. We identify peer firms using four alternative dimensions of similarity: client geographic location, industry affiliation, client size (filing status), and departing auditor type (Big N versus non-Big N). Using a large sample of auditor changes from the years 2001–2012, we find that for every dimension of similarity, the propensity of a client to select a norm (as opposed to a non-norm) audit office as the succeeding auditor is positively associated with 1) the proportion of its peers audited by the "norm" office in the prior year (i.e., social norm evidence) and 2) the proportion of its auditor-switching peers selecting a "norm" audit office in the prior year (i.e. social learning evidence). Social norm and social learning evidence provided by "more similar" peers has greater effect than evidence provided by "less similar" peers across all four dimensions of peer similarity. Further analysis suggests that social norm and learning evidence has incremental power (beyond each other) in explaining auditor selection, with norm evidence exhibiting a larger effect than learning evidence. An analysis of the implementation of SOX 404(b) mandatory internal control audits in 2004 shows that clients' tendency to choose pre-existing social norm audit offices can be disrupted by exogenous events.

1. Introduction

Although the topic of auditor choice has been widely studied, most prior research has focused on the role of client firm characteristics (such as size, profitability, operational complexity, and risk) as the key drivers of a client firm's auditor choice.[1] These client-specific economic characteristics proxy for demand for audit services to mitigate agency costs, information risk, and potential litigation costs. Studies in this line of research tend to assume that a client firm makes an independent auditor selection decision without considering the auditor choices of the client's peers. Further, prior studies typically have investigated client choices of auditors at the national accounting firm level (such as Big N versus non-Big N auditors).[2] In contrast, this study investigates the effects of peers' (i.e. similar firms') prior choices on a client's selection of a "social norm" audit office versus other audit offices accompanying

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* Corresponding author.
E-mail address: mettredge@ku.edu (M. Ettredge).

[1] We acknowledge that a client firm's auditor choice decisions are made by the members of the auditing committee of the board of directors, with more or less input from top managers. For brevity, we henceforth refer to such decisions as client firm decisions.

[2] DeFond and Zhang (2014) review studies on client choice of Big N auditors and client choice of auditors that are industry specialists. They state (2014, 294): "Most of the research in this area finds support for the hypothesis that agency costs explain the choice of audit quality". Although a few studies have investigated clients' choices of industry specialists at the city level (for example, Minutti-Meza, 2013), those studies have not employed social norm or social learning theories or variables.

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auditor turnover. We define a client's social norm audit office as the office auditing the largest number of the client's peer firms in the metropolitan area where the client's headquarters is located.

In this study, we apply theories of social learning and social norms to examine the effect of peers' behavior on a client's audit office choice. Social learning theory posits that an agent observes and then imitates the recent prior behavior of other agents experiencing a similar situation (Bandura, 1977).[3] The greater the number of peer agents who responded to the same situation in the same manner in the prior period, the more likely an agent will be to imitate the previous actions of those peers.[4] Although social learning theory was developed to explain behavior of individuals, it also has been employed to explain collective (corporate) behavior (DiMaggio & Powell, 1983; Fligstein, 1985; Palmer, Jennings, & Zhou, 1993). In a corporate setting, prior literature has documented the effect of social learning on various decisions, such as directors' decisions regarding the type of acquisition to be made (Haunschild, 1993) and analysts' decisions to initiate stock coverage (Rao, Greve, & Davis, 2001). In the context of a client's decision whether or not to affiliate with its metro area social norm audit office, we operationalize social learning evidence as the number of publicly listed peer (similar) clients choosing that audit office in the prior year, divided by the total number of publicly listed peer clients choosing any office in the metro area in the prior year.

Social norms represent regular behavior patterns that are relatively stable in a particular group within a certain period (Axelrod, 1986). A social norm results from the cumulative prior choices of agents over an extended period of time. Consistent with social norms theory, several archival studies have documented that established industry practices partially influence a company's decisions, such as voluntary disclosure (Botosan & Harris, 2000), executive compensation (Bizjak, Lemmon, & Naveen, 2008), and the continuation of earnings guidance (Houston, Lev, & Tucker, 2010). A behavioral study by Sun, Tan, and Zhang (2015) finds that norm-consistent strategies are more effective than norm-inconsistent strategies during auditor-client negotiations over audit adjustments. That is, both auditors and clients benefit from following negotiating strategy norms and bear costs when deviating from norms. In the context of a client's decision whether or not to affiliate with its metro area social norm audit office, we operationalize social norm evidence as the number of peer (similar) publicly listed clients affiliated with that audit office in the prior year, divided by the total number of public client peers affiliated with any office in the metro area in the prior year.[5] Because we propose that switching clients employ social norm and social learning data to make their office choice decisions, we refer to our test variables as capturing social norm and social learning evidence.

In the auditor change context, we argue that a client's decision to engage a social norm audit office is (to some extent) an attempt to mitigate buyer (client) uncertainty about the quality of audit service provided by an audit provider (i.e., an audit office). It has long been recognized that audit quality is costly and difficult for potential clients to assess ex ante (DeAngelo, 1981). An audit has characteristics of an experience good (Craswell & Francis, 1999; Knechel, 2013), for which quality is not directly observable or determinable prior to purchase but can be inferred from experience (Klein & Leffler, 1981). When choosing a new audit office, a client's audit committee cannot directly observe and compare the levels of audit quality and service supplied by different audit offices ex ante. After its first audit, and even more so after several audits, the client has a clearer view of the benefits received, but the choice of an audit office must be made in advance of experiencing the audit. A client cannot rely entirely on a prospective audit office's affiliation with a national “brand name” accounting firm or a national “industry specialist”, because audits are conducted at the office level, and quality can vary across offices within a given national accounting firm (Francis, Michas, & Yu, 2013). We argue that a client choosing an auditor will seek information about the specific offices from which it will select, which normally consist of offices located in the metro area where the client is headquartered. One source of such information is the prior choices of other similar audit clients.

A social norm audit office is one that has both attracted and retained a large number of peer clients in prior years. Importantly, the ability of a social norm office to retain peer clients is evidence to a prospective client that existing, similar clients are satisfied with that office's services. This evidence helps remedy the prospective client's uncertainty about the quality of service on offer. We argue that stronger evidence has a greater effect in reducing uncertainty than weaker evidence. Thus a prospective client is more likely to choose the social norm audit office in its metro area if the social norm evidence is stronger. That is, the larger the proportion of peer firms already affiliated with the social norm office, the more likely the prospective client is to choose the social norm office.

The ability of a social norm office to attract *recent* new clients (i.e. in the prior year) provides less information about client satisfaction because clients attracted last year might not have had time to experience an audit from the new provider. Accordingly, it is likely that evidence provided by recent new clients (social learning evidence) is less persuasive than evidence provided by existing clients that have experienced multiple audits (social norm evidence). Still, the ability of the social norm office to attract peer clients in the prior year suggests to a prospective client that the office continues to be competitively viable. A prospective client is more likely to choose the social norm audit office in its metro area if the social learning evidence is stronger. That is, the larger the proportion of peer firms that selected the social norm office in the prior year, the more likely the prospective client is to choose the social norm office in the current year.

The social learning and social norm evidence provided by similar audit clients' choices should be stronger not only if the number or proportion of such clients that recently chose or continue to remain with the social norm office is larger, but also if such clients are more similar to the prospective client. In the realm of individual behavior, people's choices are affected most by the behavior of their peers (Cialdini & Trost, 1998). Similarly, studies of social norms and social learning in the corporate setting provide some evidence that choices made by managers and directors of a given firm are more affected by prior choices of other, similar firms versus substantially different firms. Such evidence mostly has focused on industry affiliations (Botosan & Harris, 2000; Koonce, Miller, & Winchel, 2015; Bratte, Payne, & Thomas, 2016).

[3] Researchers have employed alternative terms, such as mimicry and herding, to refer to effects similar or identical to social learning.

[4] Strictly speaking our results do not prove that client choices of social norm audit offices are affected by social norm and social learning evidence, only that the results are consistent with such an interpretation. The results we report could arise from independent, optimal client decisions with search costs (i.e., efforts and resources a client spends to obtain information needed for the decision making), leading to the same outcomes. We control for standard determinants of auditor choice in our analyses, and we believe that our evidence of stronger (weaker) associations for closer (less close) peer samples tends to increase confidence in the causal effects of social norm and social learning evidence on client choice of social norm audit offices. Nevertheless, we caution that our conclusions are tentative and suggest that more evidence on the role of social norms and social learning in the audit context is desirable.

[5] In this study the distinction between social learning and social norm evidence available to a switching client is as follows. Social learning evidence is based on the audit office choices made by similar clients that switched in the prior year. Social norm evidence is based on the status of similar clients being affiliated with the social norm office as of the end of prior year. Social norm evidence is the cumulative result over multiple years of clients' past audit office choices.

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Accordingly we investigate whether degree of similarity matters in respect to social norm and social learning evidence, and we investigate the following dimensions of peer similarity: geographic location, industry affiliation, client size, and departing auditor type.

Using data from the years 2001–2012, and controlling for the determinants of auditor selection documented in prior literature, we find that, after auditor turnover, the propensity of a client to select a social norm audit office in a given year is positively associated with (1) the proportion of its peers who are affiliated with that office in the prior year, consistent with the prediction of social norms theory, and (2) the proportion of its auditor-switching peers who selected that office in the prior year, consistent with the prediction of social learning theory. These results are observed when peers are defined based on all four of the differing dimensions of similarity. Results are stronger when social norm evidence and social learning evidence are based on more similar peers versus less similar peers. Further, as expected, we find that client choices of social norm audit offices appear to be more strongly influenced by social norm evidence than by social learning evidence.

To our best knowledge, this is the first study to explore the impact of peers' auditor choices on a client's audit office selection. Our paper contributes to research on the determinants of auditor choice by considering social learning and social norms effects within a society of peers with similarity in geographic location, industry affiliation, filing status (client size), and previous auditor type. The findings of our study provide evidence that companies do not make isolated auditor-selection decisions as is often implicitly assumed in prior literature. Instead, when choosing its successor auditor after auditor turnover, a client observes and learns from the prior decisions made by its peers.

Second, our study is one of the few studies that examine a client's auditor choice at the office level. Most prior literature on auditor choice has focused on a client's choice of a given type of auditor (such as, Big N versus non-Big N), but not a specific audit office. The exception consists of a few studies of audit firm industry specialization at the city office level. Because audits are conducted and audit opinions are issued at the office level, and because audit quality can be affected by office-specific attributes, it is important to understand how a client choosing an audit office will seek information about the specific offices from which it will select. Our finding suggests that a client's choice of an audit office is affected by its peers' choices.

The rest of this study is organized as follows. The second section reviews prior research and develops our hypotheses. The third section discusses our empirical models. The fourth describes our data and analyzes empirical results, and the fifth section concludes.

2. Literature review and hypothesis development

2.1. Auditor selection: an agency theory perspective

In extant literature, agency theory has provided the dominant approach to understanding the auditor selection decision (DeAngelo, 1981; Healy & Palepu, 2001; Jensen & Meckling, 1976; Watts & Zimmerman, 1983). Collectively, using the predominant agency/economic framework, a large body of research has developed various client characteristic variables, proxying for agency/economic costs and benefits, and demonstrated their associations with auditor choice. This stream of research is usually based upon the assumption that a client makes an independent auditor-switching decision without considering the effect of social context factors such as peer actions. Fischer and Huddart (2008) suggest that researchers should incorporate social dynamics into principal-agent models to explore the agent's decisions. In this paper, we argue that although agency/economic incentives at the client level are important factors in auditor type selection as evidenced in prior literature, peers' behavior can complement agency factors in explaining clients' auditor choice. Next, we review social norms and social learning theories, and develop our hypotheses.

2.2. A social learning theory perspective

Social learning theory suggests that agents can learn through observing and imitating others who have experienced a similar situation (Bandura, 1977). One important implication of social learning theory is that agents do not function independently but instead influence each other's behavior in an interactive manner (Bandura, 1977). Davis and Luthans (1980) suggest that organizations can learn from the experiences of other organizations, and often make decisions similar to those made by other organizations experiencing a similar situation. The insight that social learning applies at the organization level facilitates the application of social learning theory in the corporate setting. Prior research has proposed several reasons why a firm might imitate the decisions made by other firms experiencing a similar situation: (1) acquiring legitimacy (DiMaggio & Powell, 1983); (2) strategically responding to competitor choices (Lieberman & Montgomery, 1988); (3) responding to pressure arising from its peers (Brown, Gordon, & Wermers, 2006); and (4) minimizing potential costs through herding (Tse & Tucker, 2010).

Several early studies have shown that social learning and social interactions at the firm level can influence firm behavior and choice. For instance, Fligstein (1985) and Palmer et al. (1993) examine the spread of the multidivisional form (MDF) of organization and find that the probability of MDF adoption is increasing with the number of other firms in the same industry that adopted MDF in a prior period. Haunschild (1993) examines whether a firm that plans to make an acquisition imitates its industry peers' previous acquisition actions and finds that the number of a given type of current-period acquisitions (e.g., horizontal or vertical acquisitions) is positively associated with the number of the same type of acquisitions within an industry in prior periods.

More recent studies of social learning or herding behavior have documented that, in a sequential multi-firm setting, agents observe others' previous actions and then use these observations in their decision-making processes to make similar choices. For instance, Brown et al. (2006) investigate annual capital expenditure (CAPEX) forecasts and find that a firm's propensity to issue CAPEX forecasts is positively associated with the number of industry peers that have provided such forecasts in a prior period. Rao et al. (2001) show that an analyst's decision to start covering a stock depends on the number of analysts who started to cover the stock in the previous year. In summary, social learning theory encompasses the interaction between individual or organizational behavior and environment. It suggests that firm behavior and choices can be better understood by studying the recent prior choices made by other, similar companies, such as companies within the same industry.

2.3. A social norms theory perspective

Social norms can be viewed as regular behavior patterns that are relatively stable in a particular group within a certain period (Axelrod, 1986). Cialdini and Trost (1998) define social norms as implicit rules and standards that are understood by agents of a group and that affect an agent's behavior without the force of laws. How are social norms related to social learning? One simple view of social norms is that they are the cumulative result of social learning, with some behaviors becoming particularly prevalent over time in a population (Bandura, 1977). A large body of research in the psychology literature shows that agents tend to conform to their peer

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group because social norms established in that group influence their behavior and choice in response to a range of situations, including recycling (Schultz, 1999), littering (Kallgren, Reno, and Cialdini, 2000), and tax evasion (Kaplan, Newberry, and Reckers, 1997).

In a corporate setting, several archival studies in accounting have documented that a firm's choice is partly influenced by prevalent practice in its industry. For example, Botosan and Harris (2000) find that firms behave as if they face pressure to conform to, or mimic, industry practices regarding disclosure of segment information. Bizjak et al. (2008) find that an important method that boards of directors use when determining chief executive officer (CEO) pay is to compare the current level of the CEO's compensation with the level of compensation among a peer group of similar companies in the same industry. Houston et al. (2010) find that a poorly-performing company in an industry with a larger percentage of its industry peers issuing earnings guidance is more likely to continue to maintain the practice of earnings guidance than a poorly-performing company in an industry with a lower percentage of industry peers issuing guidance. Koonce et al. (2015) find that investors' reactions to firms' decisions to use derivatives for hedging are influenced by industry norms and the firms' norms (i.e., the firms' own prior practices). Bratte et al. (2016) suggest that firms' performance reporting follows the example of reported performance of industry leaders. Separately, a behavioral study by Sun et al. (2015) finds that the norm-consistent strategies are more effective than the norm-inconsistent strategy during the auditor-client negotiation process, that is, both auditors and clients benefit from following norms (reversely, bear a cost due to deviating from norms).

Taken together, prior literature suggests that social norms evolve through social learning and that social norms play an important role in guiding firm behavior and choice. The stronger the established social norms are, the more likely a firm will be to conform to them.

2.4. Hypotheses

In the auditor choice context, we argue that clients changing auditors rationally observe and often mimic peer firms' behavior because doing so mitigates buyer (client) uncertainty about the quality of audit services rendered by audit providers. Audit quality, defined as the joint probability that an auditor will both discover and report a breach during a client's audit, is costly and difficult to assess ex ante (DeAngelo, 1981), because it is not directly observable. As discussed by DeAngelo (1981, 186), "the actual procedures employed on a given audit engagement are generally not directly observed by consumers [clients]." Simunic (1980) argues that the primary differentiating indicator of audit quality is likely to be the identity of the audit supplier. An audit exhibits characteristics of an experience good, which in economics theory refers to goods for which the benefit/quality to be received cannot be observed in advance of purchase, but is learned later, through experience (Klein & Leffler, 1981; Craswell & Francis, 1999; Knechel, 2013). Therefore, when choosing a new audit office, a client's board and audit committee cannot directly observe and compare audit quality and service supplied by different audit offices ex ante. Further, the client will not have direct experience working with a given audit office until the client purchases its services. Clients choosing audit providers cannot rely entirely on an audit firm's national reputation because audits are delivered at the metro office level, and the audit quality delivered can differ across offices even within the same audit firm (Francis et al., 2013).[6]

In this setting of buyer uncertainty, it is rational for a client to consider hiring the metro area office that currently audits the largest number of companies that the client views as peers, i.e. the social norm office. The continued affiliation of peer firms with that office suggests that these firms are satisfied with their experiences. The likelihood that a client will choose the social norm office should be positively associated with the strength of the social norm evidence (i.e. the larger the proportion of the client's peers audited by the office, the more likely the client is to select that office). Our related hypothesis, stated in the alternative form, is as follows:

H1. Ceteris paribus, following auditor turnover, the propensity of a client to select a social norm audit office as the succeeding auditor is positively associated with the proportion of its local peers audited by that office in the previous year.

Further, given the proportion of the client's peers audited by a social norm office, we expect H1 to be supported more strongly if the proportion is based on "close" peers (i.e. more similar) versus "distant" peers (less similar).

Social learning behavior also has a role in the auditor choice context, although the logic here is less powerful. A client will consider hiring the metro area office that attracted, as new clients last year, the largest number of companies that the client views as peers. This social learning evidence does less to mitigate buyer uncertainty about audit quality because new clients gained last year have little experience with annual audits received since their switches. In some cases, the peer switchers will not yet have undergone the first audits provided by the newly chosen offices. However, due to information asymmetry a client's audit committee may have to exert intensive effort on its own to gather required information to facilitate the selection of a new audit office. Alternatively, recent office choices made by peers could reveal or suggest information that the peers learned via costly searches and evaluations, and thus provide a low-cost (free) input to the decision making process. The likelihood that a client will choose the social norm office should be positively associated with the strength of the social learning evidence (i.e. the larger the proportion of the client's auditor-switching peers choosing that office in the prior year, the more likely the client is to select that office).[7] Our related hypothesis, stated in the alternative form, is as follows:

H2. Ceteris paribus, following auditor turnover, the propensity of a client to select a social norm audit office as the succeeding auditor is positively associated with the proportion of its local auditor-switching peers selecting the office in the previous year.

Further, given the proportion of the client's peers switching to a social norm office in the prior year, we expect H2 to be supported

[6] Audit quality also can vary systematically across audit partners within offices (Knechel, Vanstraelen, and Zerni, 2015). This suggests that clients might want to imitate peers' choices at the partner level as well as the office level. However, we cannot investigate this because partner level data are not currently available in the U.S.

[7] Both social norm and social learning theories provide the same predictions regarding audit office choice. The difference lies in the type of evidence that clients use in selecting a new audit office. Social learning evidence consists of the proportion of similar clients that switched to the local norm office in the prior year. Social norm evidence consists of the proportion of similar clients affiliated with the local norm office as of the end of prior year. In other words, whereas social learning evidence represents peers' recent short-run (i.e., prior year only) herding behavior, social norm evidence represents the long-run (cumulative) result over multiple years of peers' past audit office choices. It is important to note that clients' herding behavior in the short-run may conform to and thereby strengthen, or disagree with and thereby weaken, the cumulative result. To the extent clients' herding behavior in the short-run conforms to the cumulative result in the long run, social norm theory supports the prediction of H2 as well the prediction of H1.

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more strongly if the proportion is based on "close" peers (i.e. more similar) versus "distant" peers (less similar).

3. Research method

3.1. Model and variables

To examine the effect of social norm and social learning factors on audit office selection, we model a client's decision to select or not select the metro area social norm office as a function of the strength of social norm and learning evidence, after controlling for client-specific factors and other determinants, based on prior auditor choice literature. In particular, we estimate the following probit regression model[8]:

$$NORMOFFICE_{i,t} = \alpha_0 + \beta_1 NORM\ \ (or\ \ LEARN)_{j,t-1} + \beta_n Control\ \ variables_{i,t-1} + Year\ \ Fixed\ \ Effect + \varepsilon_{i,t} \quad (1)$$

Where:

$$\begin{aligned}\beta_n Control\ \ variables_{i,t-1} = {} & \beta_2 LNAT_{i,t-1} + \beta_3 FOLLOWER_{i,t-1} \\ & + \beta_4 ATURN_{i,t-1} + \beta_5 CURR_{i,t-1} \\ & + \beta_6 CAPINT_{i,t-1} + \beta_7 CYCLE_{i,t-1} \\ & + \beta_8 R\&Dsales_{i,t-1} + \beta_9 DDRES_{i,t-1} \\ & + \beta_{10} LEV_{i,t-1} + \beta_{11} QUICK_{i,t-1} \\ & + \beta_{12} Z\_SCORE_{i,t-1} + \beta_{13} LIT_{i,t-1} \\ & + \beta_{14} ROA_{i,t-1} + \beta_{15} CASH_{i,t-1} \\ & + \beta_{16} LOSS_{i,t-1} + \beta_{17} FIRM\_AGE_{i,t-1} \\ & + \beta_{18} H\_INDEX_{i,t-1} + \beta_{19} MTB_{i,t-1} \\ & + \beta_{20} M\&A_{i,t-1} + \beta_{21} ISSUE_{i,t-1} \\ & + \beta_{22} ExFIN_{i,t-1} + \beta_{23} AUDIT\_FEE_{i,t-1} \\ & + \beta_{24} GC_{i,t-1} + \beta_{25} RE_{i,t-1} \\ & + \beta_{26} CLI\_OFF_{i,t-1}\end{aligned}$$

In equation (1), for every client i, and every year t: $NORMOFFICE_{i,t}$ equals one if client i's succeeding auditor is the social norm office, i.e., the office having the largest number of peer clients in the metro area where client i is headquartered in year t, and zero otherwise. The social norm office is identified separately for each of the four proxies for peer firms.[9] $NORM_{j,t-1}$ and $LEARN_{j,t-1}$ are test variables for testing hypotheses H1 and H2. In generic terms, $NORM_{j,t-1}$ equals the proportion of peers (with peers defined as: located in same metro area *j*, same industry *j*, same client size group *j*, or same previous auditor type *j*) audited by the social norm office in year t-1. $LEARN_{j,t-1}$ equals the proportion of local auditor-switching peers (in each of the four peer group proxies) that selected the social norm office as their succeeding auditors in year t-1. If $\beta_1 > 0$, hypotheses H1 and H2 will be supported, that is, social learning and social norm factors have positive impacts on an individual firm's choice of the social norm office as the succeeding auditor, following auditor turnover.

We measure client i's similarity with its peers based upon four alternative dimensions: geographic location, industry affiliation, client size, and departing auditor type (Big N versus non-Big N). Under the geographical location dimension, all clients located in the same metro area as client i are considered as similar peers. This broadest peer group is further divided into subsets of similar peers under the other three dimensions. Under the dimension of industry affiliation, client i's peers consist of all clients operating in i's 2-digit SIC industry in its metro area. Under the dimension of client size, client i's peers consist of all clients in client i's metro area that are of the same filing type (accelerated filer, or non-accelerated filer) as client i. Under the dimension of departing auditor type, client i's peers consist of all clients in i's metro area having the same auditor type (Big N or non-Big N) as client i's departing auditor.

Following Bloomfield, Nelson and Soltes (2016), to strengthen the inference of causality, we test whether the association between the dependent (i.e., choice of norm audit office) and test variable (social norm or learning effect) is moderated as theory suggests (i.e. stronger for close peers than for distant peers). As such, we perform separate analyses by assigning alternative values to $LEARN_{j,t-1}$ and $NORM_{j,t-1}$ based upon a *less* similar group of companies, that is, companies violating the similarity rule defined under each dimension. We expect that the altered social norms and learning variables based upon distant peers ($DISNORM_{j,t-1}$, $DISLEARN_{j,t-1}$) will have weaker power in explaining choice of a social norm audit office than those based upon close, similar peers. Our dependent variable (choice of norm office), our "close peer" test variables (*NORM* and *LEARN* measured at peer group level), and our "distant peer" variables (*DISNORM*, *DISLEARN*) are defined under each dimension as follows.

3.2. Similarity dimension 1: geographic location

A client seeking a new audit office is more likely to be guided by social norm or social learning evidence based on same-metro-area peers versus geographically more remote peers. To test the effect of peers with similar geographical location on auditor choice, $NORMOFFICE_{i,t}$ equals one if client i's succeeding auditor is the office having the largest number of public clients in the metro area where client i is headquartered in year t, and zero otherwise. $NORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients in client i's own metro area *j* in year t-1. $LEARN_{j,t-1}$ equals the proportion of auditor-switching public clients choosing the office having the most public clients in client i's own metro area *j* as their succeeding auditors in year t-1.

For the "distant" peers analysis, the definition of the dependent variable $NORMOFFICE_{i,t}$ remains the same as defined above, i.e. it equals one if client i's succeeding auditor is the office having the largest number of public clients in client i's metro area in year t, and zero otherwise. However, $LEARN_{j,t-1}$ and $NORM_{j,t-1}$ are altered as follows. $DISNORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients in year t-1, but located in a *different* (randomly-assigned) metro area. $DISLEARN_{j,t-1}$ equals the proportion of auditor-switching public clients choosing

[8] Our results are unchanged if we use logit rather than probit.

[9] Because the social norm office is identified separately for each of the four proxies for peer firms, the identity and number of norm offices can vary across the four peer dimensions. Hence, an audit office can be identified as a norm office under one dimension, but not under another. Under the geographical location dimension, there is only one norm office for each metro area, that is, the office having the largest number of local clients in that metro area. Under the dimension of industry affiliation, all clients located in the same metro area are divided into subsets of peer groups based upon their industry affiliations and one norm office is identified for each subset, that is, the office having the largest number of local clients within each industry. Hence, whereas there is only one norm office for each metro area under the dimension of geographical location, there can be more than one norm office under the dimension of industry affiliation, depending on how many industries that metro area has. For the same reason, there will be up to two norm offices for one metro area under the dimension of client size if the area has both accelerated and non-accelerated filers. Similarly, there will be up to two norm offices for one metro area under the dimension of departing auditor type (i.e. one Big N office and one non-Big N office).

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the office having attracted the most new public clients in year t-1, but located in a *different* (randomly-assigned) metro area as their succeeding auditors. It is unlikely that switching client i would employ social learning (or social norm) evidence from peer clients in a different metro area. Thus, the distant peers' analysis should provide information about the divergent validity of the social norm and social learning test variables (i.e. a falsification test).

3.3. Similarity dimension 2: industry affiliation

A client seeking a new audit office is more likely to be guided by social norm or social learning evidence obtained from clients having similar operations versus different operations. As discussed previously, empirical evidence suggests that a company refers to established practice in its own industry when making various corporate decisions. For testing the effect on auditor choice of peers with similar industry affiliation, $NORMOFFICE_{i,t}$ equals one if client i's succeeding auditor is the office in its metro area having the largest number of public clients in i's 2-digit SIC industry, and zero otherwise. $NORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients in client i's 2-digit SIC industry *j* for its metro area in year t-1. $LEARN_{j,t-1}$ equals the proportion of same-metro-area auditor-switching public clients choosing the office having the most public clients in client i's 2-digit SIC industry *j* as their succeeding auditors in year t-1.

For the distant peers analysis, $NORMOFFICE_{i,t}$ again equals one if client i's succeeding auditor is the office in its metro area having the largest number of public clients in its 2-digit SIC industry, and zero otherwise. $DISNORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients for its metro area, but in client i's *1-digit* SIC industry in year t-1. $DISLEARN_{j,t-1}$ equals the proportion of same-metro-area auditor-switching public clients choosing the office having attracted the most new public clients, but in client i's *1-digit* SIC industry, as their succeeding auditors in year t-1.

3.4. Similarity dimension 3: client size (filing status)

Smaller clients (non-accelerated filers, NAFs) differ from larger clients (accelerated filers, AFs) with respect to their audit requirements.[10] As such, desirable audit offices for smaller clients could be different from those for larger clients. The client is more likely to be guided by social norm or social learning evidence obtained from similar-size peers versus from different-size peers.

For the dimension of client size, $NORMOFFICE_{i,t}$ equals one if client i's succeeding auditor is the office in its metro area having the largest number of public clients of its own filing (size) type (AF or NAF), and zero otherwise. $NORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients of client i's own filing type *j* in its metro area in year t-1. $LEARN_{j,t-1}$ equals the proportion of auditor-switching public clients choosing the office having the most public clients of client i's own filing type *j* in its metro area as their succeeding auditors in year t-1.

For the distant peers analysis, $NORMOFFICE_{i,t}$ continues to equal one if client i's succeeding auditor is the office in its metro area having the largest number of public clients of its own filing type, and zero otherwise. $DISNORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients of the *opposite* filing type in client i's metro area in year t-1. $DISLEARN_{j,t-1}$ equals the proportion of auditor-switching public clients choosing the office having attracted the most new public clients, but of the *opposite* filing type in client i's metro area, as their succeeding auditors in year t-1.

3.5. Similarity dimension 4: client's departing auditor type

Some clients are constrained by their size and complexity to affiliate with Big N auditors. Other clients are not. Clients arguably are more influenced by evidence from peers that have employed the same auditor type. For this dimension, $NORMOFFICE_{i,t}$ equals one if client i's succeeding auditor is the office in its metro area having the largest number of public clients, and that is of the same auditor type as client i's former auditor (i.e., Big N if the former auditor is Big N; non-Big N if the former auditor is non-Big N), and zero otherwise. $NORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients, and that is of the same auditor type as client i's former auditor type *j* in its metro area in year t-1. $LEARN_{j,t-1}$ equals the proportion of auditor-switching public clients choosing the office in its metro area having the most public clients, and that is of the same auditor type as client i's former auditor type *j*, as their succeeding auditors in year t-1.

For the distant peers analysis, $NORMOFFICE_{i,t}$ again equals one if client i's succeeding auditor is the office in its metro area having the largest number of public clients and that is of the same auditor type as client i's former auditor (i.e., Big N if the former auditor is Big N; non-Big N if the former auditor is non-Big N), and zero otherwise. $DISNORM_{j,t-1}$ equals the proportion of public clients audited by the office having the most public clients, and that is of the *opposite* auditor type as the former auditor in year t-1. $DISLEARN_{j,t-t}$ equals the proportion of auditor-switching public clients choosing the office having attracted the most new public clients, but that is of the *opposite* auditor type as client i's former auditor (i.e., Big N if the former auditor is non-Big N; non-Big N if the former auditor is Big N), as their succeeding auditors in year t-1.

To mitigate concerns about endogeneity and help assess the existence of a causal link, we model a lead-lag association between social norms and learning variables and the likelihood that a client selects a social norm audit office as its succeeding auditor. In particular, we measure each of the social norm and social learning variables, and the control variables, in the year prior to each client's auditor choice decision. We compute test statistics using robust standard errors corrected for heteroscedasticity and clustering at firm and year level (Petersen, 2009).[11]

3.6. Control variables

In line with prior studies of auditor choice, we control for client size, client complexity, client's earnings quality, client/audit risk, and client profitability factors (Francis & Wilson, 1988; DeFond, 1992; DeFond & Subramanyam, 1998; Chaney, Jeter, & Shivakumar, 2004). We emphasize that prior studies have not attempted to explain client choice of social norm offices following auditor turnover. Thus we have no strong expectations regarding the expected signs of the control variables' coefficients, or about their abilities to explain the dependent variables. However, if audit committees believe that social norm audit offices play a credible role in mitigating agency costs, then we might observe a tendency for measures of client size, risk and complexity to be positively associated with client choice of social norm offices. The Appendix provides detailed variable definitions.

[10] AFs are required to file audited financial statements with the SEC in a shorter time window than NAFs. AFs are subject to the requirement to purchase a SOX 404(b) internal control audit but NAFs are not.

[11] Some client firms appear in our auditor-switching sample more than once due to multiple switches within the sample period.

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3.7. Sample

We rely on Audit Analytics' Auditor Changes dataset to form our auditor turnover sample between 2001 and 2012; 2000 is the beginning year when Audit Analytics data is available for our one-year lagged independent variables. We require each firm-year to have the necessary variables, and we winsorize all continuous variables at the 1st and 99th percentiles in order to reduce the influence of extreme observations. After various sample attrition steps and eliminating the observations with missing data, we end up with a final sample of 4074 firm-year observations that experience auditor turnover in our sample period for analyses based upon three of the four similarity dimensions: Geographical location, client size, and departing auditor type.[12] The remaining dimension of industry affiliation is analyzed based upon a reduced sample of 2897 observations, due to missing values for norm and learning variables for some 2-digit SIC industry peer groups. Compared to the other three dimensions, 2-digit SIC industry similarity classifies clients in a metro area into many more smaller-sized peer groups. For many clients, no auditor-switching has occurred in the prior year among its few local 2-digit SIC industry peers.

4. Empirical results

4.1. Descriptive statistics

Table 1 provides descriptive statistics. Panel A (Panel B) compares means for the *NORM* variable (the *LEARN* variable) between those clients choosing a norm office (*NORMOFFICE* = 1) following auditor turnover, and those not choosing a norm office (*NORMOFFICE* = 0), under each of the four similarity dimensions.[13] In Panel A, under the geographical location dimension, the mean *NORM* among the 346 clients choosing a norm office is 0.300, which is significantly higher ($p < 0.01$) than the mean *NORM* of 0.188 for the 3728 clients not choosing a norm office. For the industry affiliation dimension, the client size dimension, and the dimension of prior auditor type, the means of *NORM* among the clients choosing norm offices also are significantly greater than the means of *NORM* among the clients not choosing norm offices. Taken together, these univariate analysis results provide initial support for H1: the propensity of a client to select a social norm audit office following auditor turnover is positively associated with the proportion of its local peers audited by that office in the prior period.

In Panel B, for all four similarity dimensions, the means of *LEARN* among the clients choosing norm offices are significantly greater than the means of *LEARN* among the clients not choosing norm offices. These results provide initial univariate support for H2: the propensity of a client to select a norm audit office as the succeeding auditor is positively associated with the proportion of its local auditor-switching peers selecting that office in the previous year.

Descriptive statistics for control variables are presented in Panel C of Table 1. The statistics are disaggregated by *NORMOFFICE* based upon the dimension of geographical location. Results are similar under other dimensions and are not reported for the sake of brevity. Overall, clients choosing a norm office differ from those not choosing one on multiple client-level characteristics, and our multivariate analyses control for these characteristics.

Table 2 reports correlation matrices for key variables by similarity dimension. Under the dimension of geographic location (Panel A), we find that the Pearson correlation between *NORMOFFICE* and *NORM* is 0.239 ($p < 0.01$), and the Pearson correlation between *NORMOFFICE* and *LEARN* is 0.255 ($p < 0.01$). In contrast, there is no significant correlation between *NORMOFFICE* and *DISNORM*, or between *NORMOFFICE* and *DISLEARN*. Similar results are observed under the dimension of client size (Panel C) and the dimension of client's departing auditor type in prior period (Panel D). Under the dimension of industry affiliation (Panel B), the correlation between *NORMOFFICE* and *NORM* is 0.558 ($p < 0.01$), and the correlation between NORMOFFICE and *LEARN* is 0.491 ($p < 0.01$). Interestingly, *NORMOFFICE* is also significantly positively correlated with *DISNORM* (correlation = 0.383) and *DISLEARN* (correlation = 0.296). *NORM* and *LEARN* are calculated based upon local peers operating in the same 2-digit SIC industry as a focal client whereas *DISNORM* and *DISLEARN* are calculated based upon more distant peers operating in the same 1-digit SIC industry. Therefore, rather than being unrelated to the focal client, *DISNORM* and *DISLEARN* based upon 1-digit SIC industry peers are simply less related. Multivariate analyses will provide more rigorous comparisons of the effect of 1-digit SIC industry peers versus 2-digit SIC industry peers. Taken together, correlations between key variables suggest that a client's choice of a norm office is correlated with choices made by close, similar peers but is either not affected or is less affected by distant, less similar peers.

4.2. Multivariate analyses results for testing hypothesis H1

Hypothesis H1 examines whether the likelihood of a client selecting a social norm audit office as its succeeding auditor (*NORMOFFICE* = 1), following auditor turnover, increases with the proportion of local peers audited by the norm office in the client's metro area at time t-1 (*NORM*). We estimate equation (1) in which the dependent variable is *NORMOFFICE* and the variable of interest is *NORM* for each of the four proxies for peer firms: geographical location (Table 3), industry affiliation (Table 4), client size (Table 5), and previous auditor type (Table 6). For each dimension of similarity we perform three regressions: regression 1 using the standalone variable of interest *NORM* which is measured based upon close, similar peers; regression 2 using the standalone distant norm variable (*DISNORM*) which is measured based upon distant, less similar peers; and regression 3 incorporating both *NORM* and *DISNORM*.

In regression 1 reported in Table 3, consistent with our expectation, the coefficient of *NORM* is significantly positive (coefficient = 2.592, $p < 0.01$), suggesting the likelihood that a client's succeeding auditor is the norm office in its own metro area increases along with the strength of social norm evidence favoring the office (i.e. proportion of its local peers audited by that office in the previous year). In regression 2, the coefficient of *DISNORM* is not significant. That is, the extent to which clients in a *different* metro area affiliate with a norm office in that different metro area is not useful in explaining a client's choice of the norm office in the client's own metro area. Regression 3 includes both *DISNORM* and *NORM*, and we observe similar results. That is, the coefficient of *NORM* is significantly positive, but the coefficient of *DISNORM* is not significant. A test of the difference between coefficients reveals that *NORM* has a significantly larger effect than *DISNORM* (F-

[12] We perform additional analysis to exclude companies audited by Arthur Andersen because of the different nature of auditor selection after auditor turnover for these firms. Our results still hold under all four dimensions. Under the dimension of Geographical location, *NORM* is significantly positive (coefficient = 2.476, p-value = 0.000), and *LEARN* is significant positive (coefficient = 1.810, p-value = 0.000). Similarly, both *NORM* and *LEARN* exhibit positive coefficients with a significance level of $p < 0.01$ under the other three dimensions. Results are untabulated for the sake of brevity.

[13] The number of clients choosing a norm office (*NORMOFFICE* = 1) under a dimension equals the number of observations of the dependent variable (*NORMOFFICE*) that are coded equal to one for the corresponding regression model presented later.

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Table 1
Descriptive statistics.

Panel A: Comparison of mean social norm evidence (*NORM*) between firms choosing norm offices and those not choosing norm offices, by peer firm similarity dimension

variable: NORM	*NORMOFFICE* (=1, 0)				
	NORMOFFICE = 1		*NORMOFFICE* = 0		Mean Diff
	N	Mean	N	Mean	*t*-test
geographical location	346	0.2999	3728	0.1884	15.69***
industry affiliation	717	0.6758	2180	0.2864	36.19***
client size	427	0.3601	3647	0.2154	18.28***
client's departing auditor type	668	0.3279	3406	0.1952	16.24***

Panel B: Comparison of mean social learning evidence (*LEARN*) between firms choosing norm offices and those not choosing norm offices, by peer firm similarity dimension

variable: LEARN	*NORMOFFICE* (=1, 0)				
	NORMOFFICE = 1		*NORMOFFICE* = 0		Mean Diff
	N	Mean	N	Mean	*t*-test
geographical location	346	0.2366	3728	0.0823	16.82***
industry affiliation	717	0.5236	2180	0.1206	30.32***
client size	427	0.2596	3647	0.1019	15.65***
client's departing auditor type	668	0.2791	3406	0.1285	16.24***

Panel C: Descriptive statistics for control variables, by choice of succeeding office, with peer client similarity based on geographic location (same versus different metro area)

variable	*NORMOFFICE* (=1, 0)				
	NORMOFFICE = 1		*NORMOFFICE* = 0		Mean Diff
	N	Mean	N	Mean	*t*-test
LNAT	346	5.239	3728	3.497	13.52***
FOLLOWER	346	0.379	3728	0.684	−11.63***
ATURN	346	1.123	3728	1.256	−2.21**
CURR	346	0.479	3728	0.565	−5.72***
CAPINT	346	0.550	3728	0.478	2.91***
CYCLE	346	4.743	3728	5.995	−1.78*
R&Dsales	346	0.153	3728	0.246	−2.46**
DDRES	346	−0.192	3728	−0.325	4.06***
LEV	346	0.297	3728	0.329	−1.15
QUICK	346	2.182	3728	2.188	−0.04
Z_SCORE	346	−3.188	3728	−9.793	5.05***
LIT	346	0.315	3728	0.375	−2.19**
ROA	346	−0.135	3728	−0.408	5.89***
CASH	346	0.190	3728	0.226	−2.68***
LOSS	346	0.468	3728	0.614	−5.33***
FIRM_AGE	346	17.809	3728	15.144	4.18***
H_INDEX	346	0.028	3728	0.027	0.12
MTB	346	2.842	3728	2.152	1.70*
M&A	346	0.309	3728	0.221	3.77***
ISSUE	346	0.925	3728	0.857	3.52***
ExFIN	346	0.647	3728	0.616	1.14
AUDIT_FEE	346	13.581	3728	12.549	13.36***
GC	346	0.087	3728	0.255	−7.06***
RE	346	0.049	3728	0.096	−2.89***
CLI_OFF	346	4.062	3728	4.341	−1.76*

Note: For geographical location, client size, and client's departing auditor type, the sample size (N) is 4074 observations; for industry affiliation, the sample size (N) is 2897 observations. For brevity, descriptive statistics for control variables presented in Panel C are based on the dimension of geographical location only. For other dimensions, the statistics are similar. ***p < 0.01, **p < 0.05, *p < 0.1.

stat = 101.38, p < 0.01). In terms of economic significance, as the proportion of local peers audited by the norm office in a metro area in year *t-1* increases from the 25th percentile (an example value of lower social norms) to the 75th percentile (an example value of higher social norms), the likelihood of a client selecting the norm office in time *t* will increase by 95%, holding control variables at mean values.[14]

With respect to control variables, the three regressions in Table 3 indicate that magnitudes of clients' audit fees (*AUDIT_FEE*) are positively associated with choice of a "geographical" social norm audit office, as is the market-to-book ratio (*MTB*). Industry *FOLLOWER*, client receipt of a going concern modified opinion (*GC*), and disclosure of a restatement (*RE*) are negatively associated with choice of a social norm audit office. The existence of a large number of public clients in a metro area, relative to the number of audit offices in that area that serve public clients (*CLI_OFF*) is negatively associated with client choice of the social norm office. Other control variables are not consistently significant across the three

[14] The economic significance = $\frac{P(norm_{75th})-P(norm_{25th})}{P(norm_{25th})}$, where $P(norm_{25th})$ is the probability of a client selecting a norm office when *NORM* is at 25th percentile and $P(norm_{75th})$ is the probability of a client selecting a norm office when *NORM* is at 75th percentile. The economic significance of *LEARN* is calculated following the same method.

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Table 2
Correlations among key variables.

Panel A Similarity Dimension 1: Geographic Location						
		1	2	3	4	5
1	*NORMOFFICE*	1				
2	*NORM*	0.239***	1			
3	*LEARN*	0.255***	0.533***	1		
4	*DISNORM*	0.018	0.095***	0.101***	1	
5	*DISLEARN*	0.006	0.019	0.038**	0.689***	1
Panel B Similarity Dimension 2: Industry Affiliation						
		1	2	3	4	5
1	*NORMOFFICE*	1				
2	*NORM*	0.558***	1			
3	*LEARN*	0.491***	0.740***	1		
4	*DISNORM*	0.383***	0.583***	0.479***	1	
5	*DISLEARN*	0.296***	0.420***	0.576***	0.681***	1
Panel C Similarity Dimension 3: Client Size (Filling Status)						
		1	2	3	4	5
1	*NORMOFFICE*	1				
2	*NORM*	0.296***	1			
3	*LEARN*	0.255***	0.500***	1		
4	*DISNORM*	0.004	0.174***	0.080***	1	
5	*DISLEARN*	−0.011	0.134***	0.045***	0.444***	1
Panel D Similarity Dimension 4: Client's Departing Auditor Type						
		1	2	3	4	5
1	*NORMOFFICE*	1				
2	*NORM*	0.260***	1			
3	*LEARN*	0.253***	0.513***	1		
4	*DISNORM*	0.021	0.084***	0.111***	1	
5	*DISLEARN*	−0.008	−0.042***	−0.035**	0.393***	1

Note: ***p < 0.01, **p < 0.05, *p < 0.1.

regressions. For brevity we do not present control variable coefficients in Tables 4–10.[15]

Table 4 reports results of the social norm effect for close peers (*NORM*) defined as clients operating in the same 2-digit SIC code industry as a focal client. The social norm effect also is reported for distant peers (*DISNORM*) defined as clients operating in the same 1-digit SIC code industry. In regression 1, the coefficient of *NORM* is significantly positive (coefficient = 2.638, p < 0.01). In regression 2, the coefficient of *DISNORM* is significantly positive (coefficient = 2.273, p < 0.05). In regression 3, although the coefficients of both *NORM* and *DISNORM* remain significantly positive, *NORM* has a much larger positive effect than *DISNORM* (F-stat = 45.41, p < 0.01). In terms of *NORM*'s economic significance, as the proportion of local peers in the same 2-digit SIC industry audited by the norm office in year *t-1* increases from the 25th percentile to the 75th percentile, the likelihood of a client selecting a norm audit office in time *t* will increase by 204%, holding control variables at mean values. These results suggest that although a client's choice is somewhat affected by its local distant industry peers (i.e. operating in the same 1-digit SIC industry), its choice is more strongly affected by its local closely-related industry peers (i.e. operating in the same 2-dgit SIC industry). In other words, the norm effect becomes stronger as peers become more similar to a specific client.

Table 5 reports results of the social norm effect for peers of roughly similar size as indicated by filing status (i.e., accelerated filers, AF; or non-accelerated filers, NAF). The coefficient of *NORM* is significantly positive in regression 1 (coefficient = 2.343; p < 0.01). The coefficient of *DISNORM* is significantly positive in regression 2 (coefficient = 0.438; p < 0.05). When *NORM* and *DISNORM* both appear in regression 3, the coefficient of *NORM* continues to be significantly positive at p < 0.01 but the coefficient of *DISNORM* is no longer significant. A test of coefficient difference finds that the effect of *NORM* is significantly higher than that of *DISNORM* (F-stat = 68.42; p < 0.01). In terms of economic significance, as the proportion of similar-sized local peers audited by a norm office in a metro area in year *t-1* increases from the 25th percentile to the 75th percentile, the likelihood of a client selecting that norm office in time *t* will increase by 91%, holding control variables at mean values.[16] These results suggest that a client's choice of a norm office in its metro area is influenced by the affiliations of its local peers of similar size but not by the affiliations of those of different size, i.e., an AF (NAF) client's choice is influenced by other local AFs' (NAFs') choices.

Finally, Table 6 provides results of the social norm effect for local peers having the same type of auditor as a focal client's departing auditor (i.e., Big N or non-Big N). In regression 1, the coefficient of *NORM* is significantly positive (coefficient = 1.583; p < 0.01). In regression 2, the coefficient of *DISNORM* is significantly positive (coefficient = 0.342, p < 0.05). In regression 3, although both *NORM* and *DISNORM* remain significantly positive, *NORM* has a much

[15] Results are available from the authors upon request.

[16] To provide another measure of economic significance, we compare the area under the ROC curve for the regression analyses with versus without the *NORM* variable. We find that the inclusion of the *NORM* variable results in an increase in the area under the ROC curve by the following magnitude: 7.3% increase [(83.3%−77.6%) ÷ 77.6%] in Table 3, 23.6% increase [(84.6%−68.4%) ÷ 68.4%] in Table 4, 9.20% increase [(80.7%−73.9%) ÷ 73.9%] in Table 5 and 10.8% increase [(71.6%−64.6%) ÷ 64.6%] in Table 6. Areas under the ROC curve for models with *NORM* are in the range of 0.72–0.85, suggesting these models' overall ability to classify clients choosing norm offices and those not choosing norm offices is fairly good.

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Table 3
Impact of social norm evidence on audit office choice: Geographical location similarity.

Dependent Variable = *Choice of Norm Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−3.324***	−2.666***	−3.325***
Test variable:			
NORM	2.592***		2.592***
DISNORM		0.136	0.005
Control variables:			
LNAT	0.044	0.036	0.044
FOLLOWER	−0.213**	−0.211**	−0.213**
ATURN	0.053	0.012	0.053
CURR	−0.515**	−0.305	−0.515**
CAPINT	0.103	0.198***	0.103
CYCLE	0.0003	0.00004	0.0003
R&Dsales	0.043	0.023	0.043
DDRES	−0.0002	−0.0002	−0.0002
LEV	0.187*	0.170*	0.187*
QUICK	0.011	0.006	0.011
Z_SCORE	−0.003	−0.002	−0.003
LIT	0.017	−0.040	0.017
ROA	0.174*	0.118	0.173*
CASH	0.466*	0.334	0.466*
LOSS	0.043	−0.005	0.043
FIRM_AGE	0.001	0.001	0.001
H_INDEX	0.192	0.993	0.191
MTB	0.008*	0.008*	0.008*
M&A	0.057	0.068	0.057
ISSUE	0.120	0.095	0.120
ExFIN	−0.058	−0.070	−0.058
AUDIT_FEE	0.118***	0.107***	0.118***
GC	−0.331***	−0.279**	−0.331***
RE	−0.289**	−0.233*	−0.289**
CLI_OFF	−0.046***	−0.044***	−0.046***
Test of Coefficient difference			101.38*** (F-stat)
Number of Observations	4074	4074	4074
N for *NORMOFFICE* = 1	346	346	346
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	444.1	313.8	445
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	20.70%	13.30%	20.70%

Table 4
Impact of social norm evidence on audit office choice: Industry affiliation similarity.

Dependent Variable = *Choice of Norm Audit Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−2.009***	−0.672	−2.016***
Test variable:			
NORM (2-digit SIC)	2.638***		2.396***
DISNORM (1-digit SIC)		2.273***	0.667***
Control variables:			
Omitted for brevity			
Test of Coefficient difference			45.41*** (F-stat)
Number of Observations	2897	2897	2897
N for *NORMOFFICE* = 1	717	717	717
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	694.5	394	701.8
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	29.90%	16.40%	30.50%

larger positive effect than *DISNORM* (F-stat = 41.32, p < 0.01). In terms of *NORM*'s economic significance, as the proportion of local public clients audited by the norm office that is of the same auditor

Table 5
Impact of social norm evidence on audit office choice: Client size similarity.

Dependent Variable = *Choice of Norm Audit Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−3.488***	−3.010***	−3.494***
Test variable:			
NORM	2.343***		2.339***
DISNORM		0.438**	0.028
Control variables:			
Omitted for brevity			
Test of Coefficient difference			68.42*** (F-stat)
Number of Observations	4074	4074	4074
N for *NORMOFFICE* = 1	427	427	427
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	447.8	282.7	447.9
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	18.80%	10.50%	18.80%

Table 6
Impact of social norm evidence on audit office choice: Previous auditor type similarity.

Dependent Variable = *Choice of Norm Audit Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−1.425***	−1.323***	−1.481***
Test variable:			
NORM	1.583***		1.578***
DISNORM		0.342**	0.303**
Control variables:			
Omitted for brevity			
Test of Coefficient difference			41.32*** (F-stat)
Number of Observations	4074	4074	4074
N for *NORMOFFICE* = 1	668	668	668
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	307.2	150.3	316.7
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	9.46%	4.28%	9.57%

type as the focal client's former auditor type in year t-1 increases from the 25th percentile to the 75th percentile, the likelihood of the client selecting that norm audit office in time *t* will increase by 58%, holding control variables at mean values. These results suggest that the norm effect on an individual client's choice of auditors from close peers audited by the same type of auditor as its prior auditor is much stronger than the choices of distant peers audited by auditors of different type from its prior auditor.

Taken together, results in Tables 3–6 provide strong support for hypothesis H1, which predicts that established audit office affiliations of close, similar peers in a metro area have a significant impact on an individual client's auditor selection, consistent with the implications of social norms theory. All regressions of the social norm effect have significant overall goodness-of-fit (p < 0.01) and Pseudo R^2 ranges from 10% to 31%.

4.3. Multivariate analyses results for testing hypothesis H2

Hypothesis H2 examines whether the likelihood of a client choosing a social norm audit office (*NORMOFFICE*) after auditor turnover in time t increases with its auditor-switching peers' selections of the norm office in time t-1 (*LEARN*). To test H2, we estimate Equation (1) in which the dependent variable is

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Table 7
Impact of social learning evidence on audit office choice: Geographical location similarity.

Dependent Variable = *Choice of Norm Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−2.638***	−2.620***	−2.621***
Test variable:			
LEARN	1.825***		1.826***
DISLEARN		−0.084	−0.098
Control variables:			
Omitted for brevity			
Test of Coefficient difference			90.00*** (F-stat)
Number of Observations	4074	4074	4074
N for *NORMOFFICE* = 1	346	346	346
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	433.8	312.3	432.6
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	20.00%	13.30%	20.10%

Table 8
Impact of social learning evidence on audit office choice: Industry affiliation similarity.

Dependent Variable = *Choice of Norm Audit Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−1.276***	−0.347	−1.276***
Test variable:			
LEARN (2-digit SIC)	1.658***		1.651***
DISLEARN (1-digit SIC)		1.230***	0.017
Control variables:			
Omitted for brevity			
Test of Coefficient difference			63.07*** (F-stat)
Number of Observations	2897	2897	2897
N for *NORMOFFICE* = 1	717	717	717
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	564	295.1	566
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	22.10%	11.00%	22.10%

Table 9
Impact of social learning evidence on audit office choice: Client size similarity.

Dependent Variable = *Choice of Norm Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−3.040***	−2.902***	−3.029***
Test variable:			
LEARN	1.387***		1.392***
DISLEARN		−0.035	−0.127
Control variables:			
Omitted for brevity			
Test of Coefficient difference			51.20*** (F-stat)
Number of Observations	4074	4074	4074
N for *NORMOFFICE* = 1	427	427	427
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	430.8	282.9	430.7
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	15.80%	10.30%	15.80%

Table 10
Impact of social learning evidence on audit office choice: Previous auditor type similarity.

Dependent Variable = *Choice of Norm Audit Office*			
	Regression 1	Regression 2	Regression 3
Intercept	−1.190***	−1.274***	−1.217***
Test variable:			
LEARN	1.257***		1.262***
DISLEARN		0.088	0.147
Control variables:			
Omitted for brevity			
Test of Coefficient difference			50.60*** (F-stat)
Number of Observations	4074	4074	4074
N for *NORMOFFICE* = 1	668	668	668
Year Effect	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes
Model Fit:			
Wald chi2	305.2	142.8	308.1
P-value	*0.000*	*0.000*	*0.000*
Pseudo R^2	8.76%	4.16%	8.80%

NORMOFFICE and the variable of interest is *LEARN* for each of the four proxies for peer firms: geographical location (Table 7), industry affiliation (Table 8), client size (Table 9), and previous auditor type (Table 10). Under each proxy, we again perform three regressions: regression 1 using our variable of interest *LEARN* on a standalone basis, regression 2 using the distant social learning variable (*DISLEARN*) on a standalone basis, and regression 3 incorporating both *LEARN* and *DISLEARN*. The results are quite similar to those reported in Tables 3–6. The estimated coefficient of *LEARN* is positive and significant in all four versions of regression 1. The coefficient of *DISLEARN* is not significant in three out of four versions of regression 2. When both *LEARN* and *DISLEARN* are included in the four versions of regression 3, *LEARN* is significant in all the versions, and *DISLEARN* is not significant in any. The economic significance of *LEARN* is in the range of 44%–102%.[17] These results provide strong support for H2. Social learning evidence provided by peers influences clients' decisions to choose social norm audit offices, but only if the peers are "close". In terms of overall model fit, regressions of learning effect have Pseudo R^2 of about 9%–22%.

5. Additional analyses

5.1. Norm vs. learning

As discussed previously, social norms and social learning are related. As individuals or organizations learn from observing actions of others around them, and make decisions to imitate those made by others experiencing a similar situation, social norms or established practices evolve over time through social learning and social interactions. Therefore, we perform additional analyses to examine whether norms and learning variables have incremental explanatory power (relative to each other) in a client's decision of auditor selection after auditor turnover. We therefore include *LEARN* and *NORM* simultaneously in one model and estimate a revised version of Equation (1). The results in Table 11 show that for

[17] We also compare the area under the ROC curve for the regression analyses with versus without the *LEARN* variable. We find that the inclusion of the *LEARN* variable results in an increase in the area under the ROC curve by the following magnitude: 6.8% increase [(82.8%−77.6%) ÷ 77.6%] in Table 7, 15.9% increase [(79.3%−68.4%) ÷ 68.4%] in Table 8, 7.0% increase [(79.1%−73.9%) ÷ 73.9%] in Table 9 and 9.7% increase [(70.8%−64.6%) ÷ 64.6%] in Table 10. Areas under the ROC curve for models with *LEARN* are in the range of 0.71–0.83, suggesting these models' overall ability to classify clients choosing norm offices and those not choosing norm offices is fairly good.

Table 11
Impact of social learning and norm on audit office choice.

Dependent Variable = *Choice of Norm Audit Office*				
Similarity Dimension	Geographical location	Industry affiliation	*Client size*	Client's departing auditor type
Intercept	−3.094***	−2.061***	−3.437***	−1.331***
Test variable:				
NORM	1.776***	2.226***	1.899***	1.149***
LEARN	1.049***	0.480***	0.657***	0.776***
Control variables:				
Omitted for brevity				
Test of Coefficient difference	3.38* (F-stat)	55.87*** (F-stat)	20.34***(F-sate)	2.81* (F-stat)
Number of Observations	4074	2897	4074	4074
N for *NORMOFFICE* = 1	346	717	427	668
Year Effect	Yes	Yes	Yes	Yes
Clustering Adjustments	Yes	Yes	Yes	Yes
Model Fit:				
Wald chi2	475.72	732.34	479.83	375.87
P-value	*0.000*	*0.000*	*0.000*	*0.000*
Pseudo R^2	22.10%	30.52%	19.66%	10.77%

all four dimensions the coefficients of both *NORM* and *LEARN* are significantly positive, indicating that learning and norms play complementary roles in explaining a client's decision to select the type of succeeding auditor after auditor turnover. The difference between the *NORM* and *LEARN* coefficients for all four dimensions is significant, with *NORM* exhibiting a larger effect. This result is consistent with the notion that social norm evidence representing the cumulative result over multiple years of peers' past audit office choices is more useful to reduce uncertainty about quality of audit services as an experience good than social learning evidence representing only the recent choices of new clients having little experience with audits received.

5.2. SOX 404(b) analysis

Clients' herding behavior in relation to their peers arguably can lead to audit market share increases among social norm suppliers. If social norms and social learning facilitate growth in norm offices' metro audit market shares, an obvious question is: why does this not eventually result in a monopoly audit provider within each metro area? Our results suggest one answer, which is that there are multiple dimensions of peer firm similarity, and that a single audit office will not necessarily be the social norm provider for all dimensions. Further, shocks to local audit markets can occur, some of which (such as the implementation of SOX 404(b) internal control audits) act to disrupt pre-existing market shares (Ettredge, Li, and Scholz 2007). We provide preliminary evidence of this disruption in the social norm for the client size dimension of similarity (i.e. AF versus NAF clients).

Section 404(b) of the Sarbanes-Oxley Act of 2002 (SOX) requires auditors to evaluate the effectiveness of public clients' internal controls over financial reporting and issue audit reports on internal controls, effective for fiscal years ending after November 15, 2004, among accelerated filer (AF) clients, but not among non-accelerated filer (NAF) clients. The implementation of 404(b) led some AF clients to dismiss their auditors and subsequently to hire smaller, often less expensive, auditors (Ettredge et al., 2007). It is possible that this trend more than offset the usual tendency of social norms and social learning to result in more concentrated metro audit markets. Table 12 provides some evidence consistent with this scenario.

Column (1) indicates that AF norm offices lost market share among AF clients from 2003 (34%) to 2005 (32%). No such trend is observed in column (2) for NAF norm offices. Remaining columns of Table 12 provide information about the switching (to or away from the norm office) and "remaining" (with non-norm offices) behavior of AF and NAF clients during this period. In column (a) the percent of AF clients switching auditors who chose a social norm AF office declined from 2003 (24%) to 2005 (21%). In contrast, column (e) shows that the percent of NAF clients switching auditors who chose a social norm NAF office increased from 2003 (13%) to 2005 (16%). AF clients switching auditors exhibited an uptick in choices of offices other than AF social norm offices (see column (b)). NAF clients switching auditors exhibited a similar slight increase in choices of offices other than NAF social norm offices (see column (f)). In sum, SOX 404(b) audit implementation disrupted AF social norms but not NAF social norms.

5.3. Subsequent auditor turnover

We perform additional analysis to understand whether choice of a norm office is associated with a differential rate of auditor turnover in subsequent periods. Table 13 provides comparison of subsequent auditor turnover rate, in the three-year window following auditor change in year t, between firms choosing norm offices and those not choosing norm offices. Under all dimensions except for industry affiliation, we find consistent results that clients choosing a norm office are less likely to change auditor again in subsequent periods compared to those not choosing a norm office. The average rate of subsequent auditor turnover for clients choosing a norm office is about 26–27 percent, while the rate for those not choosing a norm office is about 33 percent, and the difference is significant ($p < 0.01$). These results provide initial evidence suggesting that social norm/learning evidence provides information useful in reducing buyer uncertainty about audit office suitability.

6. Conclusions

Most previous studies assume that a client makes an independent decision to select its auditor and focus heavily on economic incentives derived from agency/economic theory to identify

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Table 12
Changes in affiliation of Accelerated filer (AF) clients and Non-Accelerated filer (NAF) clients with AF norm and NAF norm metro audit offices following implementation of SOX 404(b) reports for AF clients.

	(1) % of AFs aligned with AF norm offices	(2) % of NAFs aligned with NAF norm offices	AF clients				NAF clients			
			(a) % switching to an AF norm office	(b) % switching to any other office	(c) % remaining with an AF norm office	(d) % remaining with any other office	(e) % switching to a NAF norm office	(f) % switching to any other office	(g) % remaining with a NAF norm office	(h) % remaining with any other office
2003	34%	29%	24%	14%	N.A.	62%	13%	6%	N.A.	81%
2004	33%	31%	19%	17%	N.A.	64%	15%	8%	N.A.	77%
2005	32%	29%	21%	15%	N.A.	64%	16%	7%	N.A.	77%

Note: To better represent the real population, the statistics in columns (a) − (h) are based upon all auditor turnover observations in Audit Analytics with information available to identify if an auditor-switching client is affiliated with a norm or a non-norm office prior to and following auditor turnover (i.e., in this analysis, we do not exclude observations due to missing information on control variables for multivariate analyses). The total number of usable auditor turnover observations for AF (NAF) clients are 266 (825) in 2003, 367 (1040) in 2004, and 448 (951) in 2005. Columns (c) and (g) are not applicable in this context because auditor turnover does not occur when a client remains with the same specific office.

Table 13
Comparison of subsequent auditor turnover between firms choosing norm offices and those not choosing norm offices.

variable: auditor turnover rate in period of [t + 1 to t + 3]	*NORMOFFICE* (=1, 0)				
	NORMOFFICE = 1		*NORMOFFICE* = 0		Mean Diff
	N	Mean	N	Mean	*t*-test
geographical location	346	0.263	3728	0.332	2.77***
industry affiliation	717	0.322	2180	0.340	0.90
client size	427	0.271	3647	0.333	2.66***
client's departing auditor type	668	0.267	3406	0.338	3.77***

Note: This table provides the comparison of auditor turnover between those clients choosing a norm office and those not choosing one, in the subsequent three-year window following auditor change in year t.

determinants of auditor selection. This line of research, however, neglects to consider the social dynamics that could affect auditor selection. The purpose of this study is to explore the influences of peers' choices on a client's subsequent decision to select a social norm audit office after auditor turnover. We define a client's social norm audit office as the office auditing the largest number of the client's peer firms in the metropolitan area where the client's headquarters is located. We expect that prior behavior of other similar audit clients serves as a useful source of information to mitigate buyer uncertainty about audit quality, because an audit can be viewed as an experience good for which quality is not directly observable ex ante.

Drawing on theories of social norms and social learning, we develop testable implications and investigate whether prior choices of peers have incremental power in explaining auditor choice beyond traditional firm-specific variables measuring clients' economic incentives, and whether a given firm's choice is more affected by prior choices made by more similar versus less similar peers. The similarity dimensions under consideration include geographic location similarity, industry similarity, client size similarity, and departing auditor type similarity. Using a turnover sample from years 2001–2012, we find that for every dimension of similarity, the propensity of a client selecting the social norm office as its succeeding auditor is positively associated with 1) the proportion of its peers audited by the norm office in the prior year, consistent with the implications of social norms theory, and 2) the proportion of its auditor-switching peers selecting a norm office in the prior year, consistent with the implications of social learning theory. The strong norm and learning effects on a client's choice of the norm audit office are present among close, similar peers but do not exist (or are not as strong) among distant peers. Further analysis suggests that social norm and learning evidence has incremental power (beyond each other) in explaining auditor selection, with norm exhibiting a larger effect than learning.

Lastly, we note that our study contributes to the literature on understanding the evolution of metro-level audit market concentration which has important implications for audit quality and audit pricing. Whereas prior literature suggests that audit firms' characteristics such as firms' ability to produce quality-differentiated products, reputation for superior quality, and economies of scale in audit production explain their market dominance, our results suggest that a behavioral heuristic − clients' herding behavior in relation to their peers − can also help explain audit market share concentration among big suppliers. Future research can be done to better understand the implication of such herding behavior on client-auditor alignment.

One limitation of our analysis is that we cannot fully distinguish between clients' optimal, independent decision-making and what appears to be herding behavior. It would be premature to infer from our results that social norm and social learning behavior plays a causal role in clients' auditor choice. Additional evidence is desirable.

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Appendix. Variable definitions

Variable	Definition
Dependent variable	
NORMOFFICE	= 1 if the succeeding auditor is the social norm office, i.e., the office having the largest number of peer clients in the metro area where client i is headquartered, 0 otherwise. The social norm office is identified separately for each of the four proxies for peer firms (defined as: located in same metro area, same industry, same client size group, or same previous auditor type).
Study variables	
NORM	= The proportion of local peers (in each of the four peer group proxies) audited by the social norm office in the metro area in prior period.
LEARN	= The proportion of local auditor-switching peers (in each of the four peer group proxies) in the metro area that selected the social norm office as their succeeding auditors in prior period.
Determinants of auditor selection	
LNAT	= The natural logarithm of total assets.
FOLLOWER	= 1 if market share (calculated as the proportion of firm's sales to industry sales) is less than the industry median and 0 otherwise.
ATURN	= Sales divided by total assets.
CURR	= Current assets divided by total assets.
CAPINT	= Long-term assets divided by total assets.
CYCLE	= The length of operating in months, measured by the sum of days' inventory and days' accounts receivable divided by 30, where days' inventory = 365 (average of beginning and ending inventory/cost of goods sold) and days' accounts receivable = 365 (average of beginning and ending accounts receivable/sales).
R&Dsales	= R&D expenses divided by total sales.
DDRES	= Financial reporting quality measure based on the Dechow & Dichev, 2002 model. The model is a regression of working capital accruals on one-year-lagged, current, and one-year-ahead cash flows from operations. We estimate the Dechow & Dichev, 2002 model cross-sectionally by industry-year and obtain the absolute residual. The absolute residue is then multiplied by (−1) so that high value of *DDRES* indicates high quality of financial reporting. All variables are scaled by lagged total assets.
LEV	= The ratio of total liabilities to total assets.
QUICK	= Current assets minus inventory divided by current liabilities.
Z_SCORE	= Risk measure for the degree of financial distress (Altman, 1968): Z-SCORE = (3.3 × pretax income + sales + 1.4 × retained earnings + 1.2 * (current assets − current liabilities))/book value of assets, where the higher the *Z_SCORE*, the less likely the financial distress.
LIT	= 1 if the client is in a litigious industry (SIC codes between 2833 and 2836, 3570–3577, 3600–3647, 5200–5961, 7370–7374) and 0 otherwise.
ROA	= The return on assets measured as net income divided by total assets.
CASH	= Cash divided by total assets.
LOSS	= 1 if net income is negative and 0 otherwise.
FIRM_AGE	= The number of years the client has appeared in the Compustat database.
H_INDEX	= Herfindahl Index equal to the square of firm sales scaled by the sum of all firms within each industry code defined by Fama and French (1997) industry classification, where the higher the Herfindahl Index, the more concentrated the industry.
MTB	= The ratio of market value to book value of common equity.
M&A	= 1 if the client had an acquisition that contributed to sales and 0 otherwise.
ISSUE	= 1 if there is new long-term debt or new equity issuance during the year and 0 otherwise.
ExFIN	= 1 if the sum of new long-term debt and new equity scaled by total assets is greater than 2% and 0 otherwise.
AUDIT_FEE	= The natural logarithm of audit fees paid by the client.
GC	= 1 if the client receives a going concern opinion, and 0 otherwise
RE	= 1 if the client restated its financial statements in prior period.
CLI_OFF	= The number of public clients in a metro area divided by the number of audit offices available in the metro area that serve public clients.

This table provides a detailed description of the procedure used to compute each variable used in the main analyses for auditor selection hypotheses. All explanatory variables are measured one year before a company selected a succeeding auditor in order to address the endogeneity and the existence of a causal link.

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