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Does Distance Matter? An Investigation of Partners Who Audit Distant Clients and the Effects on Audit Quality*

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ABSTRACT

We examine how audit partners' geographic proximity to clients affects audit quality. We use hand-collected data to show that approximately half of audit partners are assigned to clients headquartered more than 100 km away from the partners' home locations. Few of these partners relocate after receiving their assignments and, as a result, more than one-third of clients are audited by partners who must commute long distances to visit the client in person. We explore this phenomenon by first modeling how distance affects partner-client matching. We find that partners' geographic proximity to a prospective client is an important matching criterion, but also that trade-offs are made when other partner characteristics such as industry specialization are more likely to be important. Next, consistent with our prediction, we show that audit quality is lower when partners reside farther from their clients. We corroborate our primary findings by showing that the association between partner distance and audit quality is mitigated when partners have access to direct flights to their clients' headquarters and when clients are geographically dispersed. Our paper should be informative for regulators, practicing auditors, and academics interested in how partner-client matching affects audit outcomes.

Keywords: audit partners, geographic proximity, partner matching, audit quality

La distance est-elle importante? Une enquête sur les associés qui font de l'audit à distance et les effets sur la qualité de l'audit

RÉSUMÉ

Cette étude examine comment la proximité géographique des associés d'audit avec les clients affecte la qualité de l'audit. Les auteurs utilisent des données recueillies manuellement pour montrer qu'environ la moitié des associés d'audit sont affectés à des clients dont le siège social est situé à plus de 100 kilomètres de leur domicile. Peu de ces associés déménagent après avoir reçu leur affectation et, par conséquent, plus d'un tiers des clients sont audités par des associés qui

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doivent parcourir de longues distances pour rendre visite au client en personne. Les auteurs explorent ce phénomène en modélisant d'abord l'effet de la distance sur l'appariement associé-client. Ils constatent que la proximité géographique des associés avec un client potentiel est un critère d'appariement important, mais aussi que des compromis sont faits lorsque d'autres caractéristiques des associés, comme la spécialisation sectorielle, sont plus susceptibles d'être importantes. Ensuite, conformément à leur prédiction, les auteurs montrent que la qualité de l'audit est moindre lorsque les associés résident plus loin de leurs clients. Les auteurs corroborent leurs principales conclusions en montrant que l'association entre la distance des associés et la qualité de l'audit est atténuée lorsque les associés ont accès à des vols directs vers le siège social de leurs clients et lorsque les clients sont géographiquement dispersés. Cet article devrait être instructif pour les autorités de réglementation, les auditeurs en exercice et les universitaires qui s'intéressent à la manière dont l'appariement associé-client affecte les résultats de l'audit.

Mots-clés : associés d'audit, proximité géographique, appariement des associés, qualité de laudit

1. Introduction

Audit standards in the United States require lead partners to rotate off public company engagements every five years. Audit firms have lamented that this rotation requirement could result in partners being assigned to more geographically distant clients, and expressed concern that long commutes might result in worse client service and lower audit quality (Daugherty et al. 2012). Yet, these same partners have also expressed a reluctance to relocate to be closer to their clients, noting that moving can negatively impact their quality of life (Daugherty et al. 2012). To date, little is known about how often partners are assigned to distant clients, the frequency with which such partners relocate, or the audit quality effects of partners who must commute long distances to visit their clients. We explore these issues archivally using a novel data set that includes audit partners' home locations.

Of the partners in our sample who rotate onto new client engagements, nearly half live more than 100 km from where their new clients are headquartered. Fewer than 15% of these partners choose to relocate after receiving their new client assignments and, as a result, approximately one-third of clients in our sample are audited by partners who must travel more than 100 km (one way) to visit their clients' headquarters in person. The average commute for these partners is nearly 1,000 km. Given the significant geographic distance that separates many partners from their clients, we attempt to answer two fundamental questions: (i) what role do partners' locations play in the partner-client matching process? and (ii) is there an association between partners' distance to their clients and audit quality?

We begin with an exploratory analysis of the partner-to-client matching process. One reason so many partners are assigned to distant clients is likely that partner-client matches are optimized over many criteria, of which the partner's geographic distance to the client is only one. Thus, to facilitate our analysis, we gather data on many partner characteristics including education, years of experience, industry specialization, leadership positions, gender, and workload. Then, for a set of new partner-client relationships, we create a sample that consists of all the partner-client matches that *could* have occurred ex ante. We model *actual* partner-client matches as a function of partner characteristics and examine which characteristics are most important when matching to different types of clients.

Our analysis reveals that, as expected, partners located closer to a client's headquarters are significantly more likely to be selected to lead the client's audit. However, this preference for local partners is weaker for clients that are (i) in the S&P 500, (ii) located in areas with few local partners, (iii) in industries with complex accounting rules, and (iv) geographically dispersed. We also document the types of trade-offs made between partner characteristics. For example, a prospective partner's location is less important, relative to their industry specialization, for clients in industries with complex accounting rules.

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Next, we examine the association between partners' distance from their clients and audit quality. Our primary empirical finding is that, as the distance between audit partners and their clients increases, so too does (i) the probability of a misstatement and (ii) the probability that the client will meet or beat analysts' consensus earnings forecasts. Together, these two results suggest that clients with more distant partners have lower-quality audited earnings. The magnitude of these effects is economically meaningful; holding control variables at their mean values, as the distance between a client and their partner increases from 10 to 100 to 500 km, the probability of a misstatement (meeting or just beating analysts' earnings forecast) increases from 2.0% (6.0%) to 2.5% (7.4%) to 3.0% (8.6%).

We attempt to rule out several alternative explanations for the association between audit partners' distance to their clients and audit quality. Our paper is closely related to Choi et al. (2012), who find that audit *office* distance to a client is negatively associated with audit quality. Because office distance is correlated with partner distance, our initial audit quality findings could plausibly be driven by offices instead of partners. In addition to controlling for office distance in all our analyses, in supplementary tests we limit our sample to offices that are "close" to clients using various thresholds (e.g., offices closer than 100 km) and independently study variation in partner distance. The evidence suggests that the association between partner distance and audit quality is statistically independent from office distance.

We also acknowledge that there are several ways nonrandom partner selection might affect the interpretation of our results. For example, we show in the partner-client matching analysis that clients in industries with complex accounting are more likely to be matched with industry specialist partners, but that partners' geographic location is less important for such clients. Thus, risky clients may be assigned disproportionally more distant partners, and our results could be driven by client risk rather than partner distance. We use the availability of local partners in the cities where clients are headquartered as an instrument for partner distance that is plausibly exogenous to client characteristics such as complexity and risk. The results using instrumental variable (IV) estimation support the primary findings.

In cross-sectional analyses, we test whether the availability of direct (nonstop) flights between more distant partners' and their clients can mitigate the effect of distance. A direct flight makes it easier for partners to visit their clients more frequently and, consistent with this intuition, the analysis shows a direct flight partially mitigates the adverse effect of distance on audit quality. We also provide evidence that the association between partners' distance to their clients' headquarters and audit quality is weaker for clients with geographically dispersed operations. These findings corroborate our interpretation of our primary results.

Our paper contributes to several streams of research. First, our findings contribute to the nascent stream of research on partner-client matching, which until now has relied primarily on interviews and qualitative analysis (Daugherty et al. 2012; Dodgson et al. 2020). We are among the first to use a large and publicly available data set to examine the partner-client matching process. We show that partners' geographic location vis-à-vis a prospective client is an important—although not deterministic—matching criterion. Moreover, some types of clients are willing to accept a more distant partner so long as they possess other important characteristics, such as relevant industry expertise.

Second, our paper also contributes to the developing literature on how individual audit partners affect the audit process. Thus far, this literature has found limited evidence that audit partner characteristics are an important determinant of audit quality in the United States (Laurion et al. 2017; Aobdia, Siddiqui et al. 2021; Aobdia, Choudhary et al. 2021; Gipper et al. 2021; Cameran et al. 2021). A related stream of research has found little evidence that the disclosure of partner names is useful to market participants, or that it changes partner behavior in ways that affect audit quality (Cunningham et al. 2019; Doxey et al. 2021; Burke et al. 2019). In contrast to this prior literature, we find strong evidence that partners' geographic distance to their clients is associated with lower audit quality.

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Third, we note that partner distance is an attribute not just of partners, but of matched partner-client pairs. This feature of our study distinguishes it from much of the literature on partner-specific characteristics discussed above and could be why we find a strong association between partner distance and audit quality when so many other studies have failed to find similar associations related to other partner characteristics. Given the care and effort that audit firms and audit committees exercise when attempting to identify the "right" partner for a particular engagement, we believe it is important to study not just how partner characteristics affect an audit directly, but how they interact with client characteristics in the production of audits. We predict that this line of inquiry will prove fruitful for future research.

2. Background and hypothesis development

Partner-client matching

Audit standards cast engagement partners as the central player in the audit process, which makes partners' independence from their clients essential for maintaining audit quality.[1] Based on perceptions that longer partner-client relationships could impair independence, the United States passed section 203 of the Sarbanes-Oxley Act, which requires partners to rotate off engagements every five years. Thus, every five years, audit firms and their clients must search for a replacement partner who has both the expertise and the capacity to replace the outgoing partner. Audit firms report spending substantial time and resources managing the partner selection and rotation process (Dodgson et al. 2020; Gipper et al. 2021). Yet, there is limited academic research on how a particular partner gets matched to a particular client, or on the implications that this matching process might have for audit quality. The research that does exist relies primarily on qualitative techniques such as interviews with, and surveys of, practicing auditors.

Dodgson et al. (2020) use semistructured interviews with 20 partners to explore how audit firms manage client relationships during partner rotations. According to these partners, the partner-client matching process begins with a discussion between audit firm representatives and members of a client's audit committee to gauge the client's preferences in a new partner. Depending on the size and complexity of the client, various personnel from the audit firm may be involved in these discussions (e.g., the office managing partner, sector/industry leaders, national risk specialists, national leadership, etc.). Audit committees often request very specific types of partners. One interviewee in the Dodgson et al. study compared the process of finding a partner that meets all a client's requirements to looking for a "purple squirrel" (2020, 99). Partners with industry expertise and leadership positions in the audit firm are in particularly high demand. Some clients' also put an "emphasis on [gender and racial] diversity in their next partner" (Dodgson et al. 2020, 100).

Once a client's preferences are known, representatives at the audit firm attempt to find a set of (typically between one and three) suitable partners to present to the client. Each such partner interviews with the client's audit committee. The audit committee—often in consultation with management—then chooses a new lead engagement partner from among the interviewed candidates or, alternatively, communicates to the audit firm that none of the interviewed candidates are acceptable. In the latter case, the matching process begins again.

Daugherty et al. (2012) also interview practicing audit partners about partner rotations. A focus of their study is the possibility that mandatory rotations could result in some partners being assigned to distant clients, requiring partners to either relocate or commute long distances. The partners they interview make clear that neither of these outcomes is ideal. Indeed, many partners they survey indicate that they would rather serve a less prestigious local client than move to serve

1. For example, PCAOB AS 1201.03 notes that "the engagement partner is responsible for the engagement and its performance" and that "the engagement partner is responsible for proper supervision of the work of engagement team members and for compliance with PCAOB standards."

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a more prestigious client. One partner noted that "relocation with family is a large disruption to quality of life" (Daugherty et al. 2012, 109). Another partner's "spouse refused to move, requiring the rotating partner to commute long distances" (Daugherty et al. 2012, 101).

These interviews and survey responses suggest several interesting questions. For example, given that auditors express difficulty finding partners that meet all their clients' preferences (Dodgson et al. 2020), what sorts of trade-offs between preferences are made in practice? Do different types of clients make different types of trade-offs? How often is the search for a suitable partner expanded beyond a client's local audit office? A regional or national search could greatly expand the option set and make finding an available partner that matches the clients' preferences easier. Yet, audit partners themselves typically prefer not to relocate or commute long distances, even if doing so would mean working on prestigious clients (Daugherty et al. 2012). Considering this apparent conflict, how often are partners assigned to distant clients? When partners *are* assigned to distant clients, how often do they choose to relocate versus (tele)commute?

Because we are not aware of any theory or prior research that could inform testable predictions related to these questions, we refrain from stating a set of formal hypotheses. Instead, as discussed in section 4, we conduct a series of descriptive and exploratory analyses. Our goal for these analyses is to shed new light, both on our specific questions articulated above, and more generally on the process of partner-client matching.

Partners' distance to clients and audit quality

The qualitative studies discussed above make clear that partners are sometimes assigned to distant clients. If these partners choose to (tele)commute rather than relocate, it could have significant implications for audit quality. Daugherty et al. (2012, 101) note that the audit partners they interviewed "consistently assessed [long partner commutes] as a sub-optimal response, leading to poorer client service and lower audit quality." When asked to rate their agreement with the statement: "When audit engagement partners are required to telecommute, audit quality declines," the partners surveyed by Daugherty et al. responded with an average of more than four on a seven-point Likert scale.

The sentiments expressed by these partners are consistent with archival findings in the economics and finance literatures, which show that information asymmetry increases with geographic distance. For example, there is evidence that the distance of analysts from the firms they cover reduces the accuracy of analysts' earnings forecasts (Malloy 2005; O'Brien and Tan 2015). Geographic distance is also associated with worse decisions by investors (Coval and Moskowitz 2001; Ivković and Weisbenner 2005) and lower returns from corporate acquisitions (Uysal et al. 2008).[2]

In the audit setting, we expect that partners who live far from their clients will face two types of information frictions. First, because it is easier for a closer partner to visit their client more frequently than a partner who lives farther away, we expect that local audit partners will be more familiar with their clients and will develop a deeper knowledge of their clients' top management and organizational culture. Consistent with this supposition, recent experimental research shows that financial reporting bias is easier to detect in face-to-face interactions (Bentley et al. 2016). This finding suggests that closer audit partners, for whom face-to-face interactions with their clients can occur more frequently, may be in a better position to gauge financial reporting bias on the part of their clients' managers.

2. It is important to note, though, that geographic proximity does not always have a positive effect on decision making as evidenced by familiarity bias favoring local firms and the resultant investment inefficiency (French and Poterba 1991; Coval and Moskowitz 1999; Huberman 2001). In accounting, Kedia and Rajgopal (2011) and DeFond et al. (2018) find a similar local bias in SEC enforcement actions by SEC regional offices against nearby companies and auditors.

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Second, because nonpartner members of audit engagement teams traditionally conduct fieldwork on-site at the client's location, partners who live closer to their clients will have more opportunities to interact with their engagement teams. Face-to-face interactions between partners and their audit teams may allow partners to fulfill their supervisory duties more effectively. Junior auditors often learn important technical skills through their interactions with more senior members of the audit team, and some partners worry that reduced interpersonal contact could limit the effectiveness of such on-the-job learning (Westermann et al. 2015). Partner distance may also have incentive effects for audit engagement teams working in the field. For example, Brazel et al. (2004) show that, relative to audit staff that expect their work to be reviewed remotely, audit staff who expect their work to be reviewed face-to-face are more focused on effective auditing and use better judgment in preparing workpapers.

In sum, practicing auditors have speculated that long partner commutes could be detrimental to audit quality (Daugherty et al. 2012). Experimental and qualitative research in accounting supports this supposition and suggests specific mechanisms through which such an effect could manifest (Bentley et al. 2016; Brazel et al. 2004; Westermann et al. 2015). Yet, to our knowledge, there has been no large-scale archival investigation to test whether an association between partners' distance to their clients and audit quality exists in practice. We seek to fill this gap in the literature by testing the following hypothesis, stated in alternative form:

HYPOTHESIS. *Audit quality is lower when lead partners live farther from their clients.*

Despite our directional hypothesis and the supporting academic literature discussed above, there are at least three reasons why we may be unable to reject the null hypothesis of no association between partners' distance from their clients and audit quality. First, although PCAOB standards dictate that lead audit partners are "responsible for the engagement and its performance" (PCAOB AS 1201.03), the same standards also allow partners to "seek assistance from appropriate engagement team members in fulfilling [their] responsibilities" (PCAOB AS 1201.04). Indeed, partners contribute only 6% of total audit hours on an average engagement at the largest six auditing firms (Gipper et al. 2021). Given the relatively small number of hours that partners contribute to audits, it is reasonable to question whether partners are a major factor in determining audit quality, regardless of how far they live from their clients. Consistent with this view, the body of research that has emerged in the wake of mandatory partner name disclosures in the United States has found little evidence that engagement partner characteristics (such as tenure and industry expertise) explain audit quality (Laurion et al. 2017; Aobdia, Siddiqui, et al. 2021; Aobdia, Choudhary, et al. 2021; Gipper et al. 2021; Cameran et al. 2021).

Second, the assignment of a distant partner may be more likely when the partner possesses other desirable characteristics. For example, if an audit committee insists on a partner with industry experience it may be willing to accept one who commutes from another city if none with the relevant experience is available locally. If partners with industry experience (or any other characteristic sought by audit committees) produce higher-quality audits, the overall effect of being assigned a distant partner becomes ambiguous, even if partners' geographic distance from their clients exacerbates information frictions as we conjecture. Thus, if we are unable to control sufficiently for the confounding effects of other partner characteristics, we may be unable to detect any effect of partner distance even if it exists.

Third, our hypothesis presumes that a significant number of partners live far from their clients. Despite partners' reluctance to relocate (Daugherty et al. 2012), neither the number of partners assigned to distant clients, nor the proportion that choose to relocate after being so assigned, is known. Anecdotally, we spoke with one partner who noted that some audit committees refuse to consider partners who are nonlocal and unwilling to relocate. This anecdote, combined with auditors' own perceptions that long partner commutes could lead to worse client service and lower audit quality,

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TABLE 1
Sample construction

	Client-years	Unique clients	Partner-years	Unique partners
US-based observations in the Form AP[a]	24,439	10,149	11,312	4,007
Less observations not in Audit Analytics	(3,361)	(3,244)	(511)	(130)
Less observations not in Compustat	(6,042)	(2,338)	(1,358)	(420)
Less observations in locations for which population data was not available	(352)	(106)	(128)	(35)
Less observations associated with partners that entered the Form AP data after 2017	(989)	(47)	(817)	(559)
Less observations for which partner data could not be found in 2017, 2020, or both	(4,292)	(950)	(2,873)	(1,030)
Primary sample	9,403	3,464	5,625	1,833

Notes: [a]As of July 27, 2020, excluding benefit plans, investment companies, and fiscal years prior to 2016.

suggest that partners may face considerable pressure to relocate when they are assigned to distant clients. If few partners are assigned to distant clients, or if most such partners choose to relocate, our hypothesis may not be testable using archival data.

3. Sample construction, data collection, and validation

Sample construction and data collection

PCAOB rules require registered audit firms to submit Form AP to disclose the names of lead engagement partners who sign opinions issued on or after January 31, 2017 (PCAOB 2015). As of July 27, 2020, the cutoff date for observations included in this study, the Form AP data included 24,439 unique client-years related to 10,149 unique public clients and audited by 4,007 unique lead engagement partners.[3] Of these 24,439 client-years, we exclude 3,361 from our sample because they do not appear in the Audit Analytics Opinions database. We exclude another 6,042 observations because they are missing values in Compustat that prevent us from calculating the full set of control variables discussed in the following sections. We exclude 352 client-year observations because there is no population data available for the core-based statistical area (CBSA) in which they are located. We also exclude 989 client-years with partners that enter the Form AP data for the first time after 2017 because, as we discuss next, we collected our first wave of partner location data in 2017.

For the remaining audit partners, during the summer of 2017, we manually searched the internet for partners' online profiles and, where possible, recorded their "home location." We searched for partners' profiles using their names, job title, and their associated accounting firm. During the summer of 2020, we went back to the partners' profiles to (i) record any changes in location and (ii) collect additional demographic data as discussed in more detail in section 4. In our final data screen, we remove 4,292 client-years for which (i) in our 2017 data collection we were unable to identify an online profile for the lead engagement partner, (ii) the partner's online profile did not list a location in either 2017 or 2020, or (iii) the partner's online profile was not

3. Data are obtained from https://pcaobus.org/Pages/AuditorSearch.aspx. Statistics include only noninvestment company and nonbenefit plan clients with nonmissing CIK numbers located in the United States.

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TABLE 2
Partner relocations

	# of partners	# relocate	% relocate
Partners <100 km from client prior to rotation	454	5	1.1
Partners >100 and <500 km from client prior to rotation	177	17	9.6
Partners >500 km from client prior to rotation	181	25	13.8

Notes: This table presents information about the distances between partners' 2017 home locations and the headquarters locations of the clients to which they were assigned during the years 2018 and 2019. The unit of observation is unique partners and only partners who sign their first opinion for a new client during the year 2018 or 2019 are included. If a partner is assigned to more than one new client during 2018 and 2019, we measure distances using the farthest client from the partner's 2017 home location. The table also provides information about the number of partners who relocate during 2018 and 2019 (i.e., whose home location in 2020 is at least 100 km away from their home location in 2017).

detailed enough for us to create the other partner demographic variables used in our analyses. The remaining observations constitute our primary sample, which consists of 9,403 client-years associated with 3,464 unique public company clients and audited by 1,833 unique audit partners. This series of data screens is outlined in Table 1. The number of observations in some tests is lower due to additional data requirements (e.g., data on analyst forecasts is available from I/B/E/S for only 6,069 of the observations in our primary sample). Our sample includes fiscal years 2016 through 2019. We attribute partner locations collected during the summer of 2017 (2020) to the fiscal years 2016 and 2017 (2018 and 2019).[4]

Validating the accuracy of partner locations

We acknowledge that partners may fail to update their online profiles after moving, which could result in measurement error. We test this possibility by drawing a random sample of 50 partners and paying a fee to conduct a background search using the name and city of each partner on the service Spokeo.com.[5] Spokeo.com provides, among other information, real estate ownership data collected from the public record. We were able to confidently match 42 of the 50 partners in our random sample to data on Spokeo.com. As of early 2019, the 42 partners that we matched owned real estate worth an average of approximately $850,000 within 100 km of the location we have recorded as the partners' 2017 home locations. The high average value of this real estate increases our confidence that we have correctly identified the partners' primary residences. For one of the remaining eight partners, real estate records suggest the partner did initially live in the location we recorded from their online profile in 2017 but moved to their client's location in early 2019 *after* we collected our initial location data. Upon rechecking the partner's online profile, we found that he had updated his profile to match his new location. For the remaining seven partners, we confirmed their home cities directly with their audit firms.

4. Exploratory analysis

How often are partners assigned to distant clients and how often do they relocate?

We begin our exploratory analysis with an investigation of how often partners are assigned to distant clients and, when so assigned, how often they relocate versus commute. Because we

4. Our findings are not sensitive to attributing partner locations collected in 2017 to the fiscal years 2016 through 2018, nor (except for our analysis of partner relocations in Table 2) to removing partners that changed locations from our sample.
5. We performed this search in early 2019, prior to collecting partners' 2020 locations.

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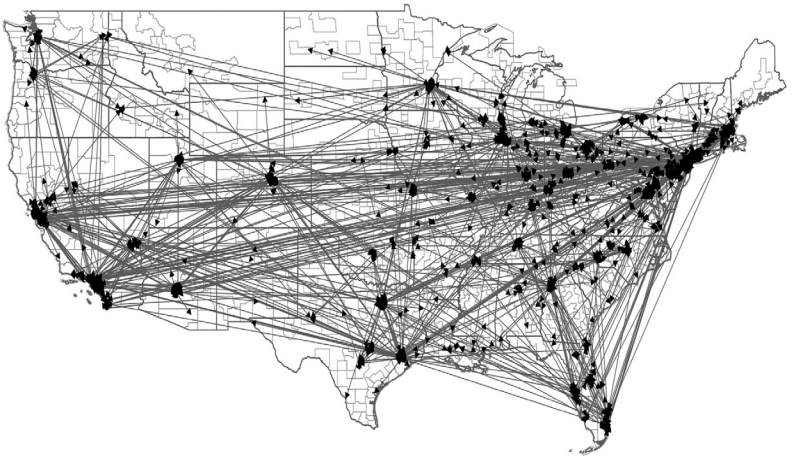
Figure 1 Connections between partners and their clients



Notes: This figure displays a line that starts at the location of each partner's 2017 home location and points to the headquarters location of their 2017 clients.

collected our initial audit partner location data in 2017 and updated partner locations in 2020 (see section 3), we limit the analysis in this section to first-year partner-client relationships in 2018 or 2019 so that we observe partners' locations both before and after their new client assignments begin. In our primary sample of 9,403 client-year observations (see Table 1), there are 1,116 new partner-client relationships involving 812 unique partners that begin in 2018 or 2019.

Table 2 presents some descriptive information on the frequency with which these partners were assigned to distant clients and on how often they chose to relocate. Of the 812 unique partners, 181 (22%) were assigned to at least one client more than 500 km away from their 2017 home location. Another 177 (22%) partners were assigned to at least one client between 100 and 500 km away from their 2017 home location, with the remaining 454 (56%) assigned only to clients within 100 km of their 2017 home locations.

We classify partners as having "relocated" when their 2020 home location is more than 100 km away from their 2017 home location. Approximately 1% of partners assigned only to new clients less than 100 km from their 2017 home location had relocated when we researched their location again in 2020. On the other hand, nearly 10% (14%) of partners relocated after being assigned a new client between 100 and 500 km (more than 500 km) from their 2017 home location.

These statistics answer two of the questions we discussed in section 2. First, nearly half (i.e., 44%) of the partners we examine are assigned to clients more than 100 km from where they live. Second, while assignment to a distant client does seem to prompt some partners to relocate, the majority choose to either commute or telecommute. To provide a sense of the distances these partners must travel if they decide to physically commute, Figure 1 displays a map of the United States with arrows that begin at the home location of each partner and point to the headquarters location of their clients.[6] As the figure demonstrates, many partners who live on the east coast lead engagements for clients headquartered on the west coast, and vice versa.

6. Some lines in Figure 1 appear darker than others because we draw separate lines for partners who travel to or from slightly different places within the same cities. For example, if two partners live in the center of New York City, with one serving a client on the north side of San Francisco and the other serving a client on the south side of San Francisco, their two lines are drawn close together and may appear as a single dark line in Figure 1.

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TABLE 3
Summary statistics

	Panel A: Client-years for which *Partner Distance to Client* <100 km (n = 6,209)					**Panel B:** Client-years for which *Partner Distance to Client* >100 km (n = 3,194)					Panel A vs. Panel B p-value for difference in means
	Mean	SD	P25	P50	P75	Mean	SD	P25	P50	P75	
Audit partner variables											
Partner Distance to Client	25.37	22.34	7.77	19.23	37.32	977.77	1048.76	222.39	507.89	1409.66	0.00
Partner Workload (*Fees*)	14.66	1.24	13.95	14.84	15.55	14.34	1.32	13.50	14.41	15.34	0.00
Partner Workload (*Clients*)	2.67	1.96	1.00	2.00	3.00	3.82	4.03	2.00	2.00	4.00	0.00
Partner Attended Top School	0.18	0.39	0.00	0.00	0.00	0.15	0.36	0.00	0.00	0.00	0.00
Partner is Leader	0.14	0.35	0.00	0.00	0.00	0.15	0.36	0.00	0.00	0.00	0.10
Partner Experience	24.70	6.71	20.00	24.00	29.00	24.79	7.33	20.00	25.00	30.00	0.56
Partner is Industry Specialist	0.16	0.37	0.00	0.00	0.00	0.14	0.34	0.00	0.00	0.00	0.00
Partner Gender	0.18	0.39	0.00	0.00	0.00	0.15	0.36	0.00	0.00	0.00	0.00
Partner has Direct Flight	0.00	0.00	0.00	0.00	0.00	0.64	0.48	0.00	1.00	1.00	0.00
Audit quality variables											
Misstatement	0.04	0.20	0.00	0.00	0.00	0.05	0.22	0.00	0.00	0.00	0.01
Meet or Beat	0.08	0.27	0.00	0.00	0.00	0.10	0.30	0.00	0.00	0.00	0.01
Office Size	16.23	2.11	14.67	16.60	17.95	15.19	2.04	13.65	15.19	16.77	0.00
Office is Industry Specialist	0.30	0.46	0.00	0.00	1.00	0.38	0.48	0.00	0.00	1.00	0.00
Office Distance to Client	2.70	1.10	1.99	2.94	3.50	5.08	2.11	3.37	5.31	6.80	0.00
Audit firm variables											
Audit Firm Tenure	9.59	6.12	4.00	8.00	16.00	8.83	6.25	3.00	7.00	15.00	0.00
Big 4 Audit Firm	0.67	0.47	0.00	1.00	1.00	0.49	0.50	0.00	0.00	1.00	0.00
Client variables											
Geo. Dispersion	2.70	0.73	2.08	2.56	3.22	2.93	0.75	2.30	2.77	3.93	0.00
Population	14.84	0.96	14.42	14.75	15.48	14.04	1.36	13.21	14.36	14.84	0.00
Member of SP 500	0.12	0.32	0.00	0.00	0.00	0.11	0.32	0.00	0.00	0.00	0.60
Assets	6.54	2.43	5.07	6.79	8.26	6.30	3.04	4.51	6.95	8.40	0.00
Leverage	0.72	1.32	0.36	0.56	0.78	1.15	2.55	0.44	0.68	0.89	0.00
Growth	0.14	0.52	−0.04	0.05	0.17	0.18	0.68	−0.04	0.04	0.16	0.00
Loss	0.39	0.49	0.00	0.00	1.00	0.36	0.48	0.00	0.00	1.00	0.00
Market to Book	4.25	8.04	1.13	2.08	4.07	3.49	7.63	0.93	1.55	2.91	0.00

(The table is continued on the next page.)

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TABLE 3 (continued)

	Panel A: Client-years for which *Partner Distance to Client* <100 km (n = 6,209)					**Panel B:** Client-years for which *Partner Distance to Client* >100 km (n = 3,194)					Panel A vs. Panel B p-value for difference in means
	Mean	SD	P25	P50	P75	Mean	SD	P25	P50	P75	
New Financing	0.68	0.47	0.00	1.00	1.00	0.69	0.46	0.00	1.00	1.00	0.12
Complex Ind.	0.48	0.50	0.00	0.00	1.00	0.58	0.49	0.00	1.00	1.00	0.00
Partner Ratio	0.47	0.39	0.08	0.48	0.72	0.34	0.35	0.00	0.29	0.56	0.00
Analyst Following	1.11	0.80	0.69	1.10	1.61	1.14	0.80	0.69	1.10	1.79	0.10
Audit opinion variables											
Material Weakness Opinion	0.04	0.19	0.00	0.00	0.00	0.04	0.19	0.00	0.00	0.00	0.82
Going Concern Opinion	0.08	0.27	0.00	0.00	0.00	0.13	0.33	0.00	0.00	0.00	0.00

Notes: This table presents summary statistics for the variables discussed in the paper. The unit of observation is client-year. Panel A presents summary statistics for client-years with partners that are located less than 100 km away from the client's headquarters. Panel B presents summary statistics for client-years located more than 100 km away from the client's headquarters. Two-tailed p-values for differences in mean values between panels are also provided. All variables are defined in Appendix 1.

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Are trade-offs made between partners' distance and other partner characteristics?

As discussed in section 2, auditors and their clients attempt to optimize partner-client matching over many criteria, of which partners' geographic distance to clients is only one. Thus, to facilitate further analysis, we measure a set of partner characteristics that we expect may be important matching criteria. To this end, we parse online partners' profiles for information such as (i) the year they graduated from college, (ii) the college they attended, (iii) any discussion in the profile about the partner's position in the firm, and (iv) any discussion in the profile about the type of clients in which the partner specializes. We then create a set of variables using this information.

First, we define *Partner Distance to Client* as the natural log of the distance (in kilometers) between partners' home locations and their clients' headquarters. Next, we define the variable *Partner Experience* as the number of years between the partner's graduation from college and the current fiscal year. We define the variable *Partner Attended Top School* as equal to one if the partner attended a university in one of the following US News and World Report Rankings: (i) top 10 universities, (ii) top 10 MBA programs, (iii) top 10 undergraduate business programs, or (iv) top 10 accounting programs, and zero otherwise. There are 30 unique schools across the four rankings, as shown in Appendix 2. We classify partners as firm leaders and industry specialists based on their descriptions of their roles in their firms. Specifically, we search for the phrases "managing partner," "lead partner," and "partner in charge" and define the variable *Partner is Leader* as equal to one if we find any of these phrases in a partner's description, and zero otherwise. We also search for phrases linked to industries in the Fama-French 10 industry classification, as shown in Appendix 3, and define the variable *Partner is Industry Specialist* as one if the partner specifically mentions their client's industry in their profile, and zero otherwise.

We use other data sources (e.g., Audit Analytics, US Census data) to measure several additional partner characteristics. We measure partner workload in each year, both by the number of clients in a partner's portfolio (*Partner Workload (Clients)*) and by the natural log of audit fees associated with those clients (*Partner Workload (Fees)*). We measure partner gender by matching partners' given (i.e., first) names in the Form AP data to US Census Bureau data on the relative frequency with which names are given to male and female babies born in the United States.[7] We define *Partner Gender* as equal to one if the partner's name is mostly given to female babies, and zero otherwise. Definitions and summary statistics for these variables (and all the other variables used in this paper) are provided in Appendix 1 and Table 3, respectively.

We use these partner characteristic variables and the same set of 1,116 new partner-client relationships discussed in section 4 to analyze the partner-client matching process. For each of these new partner-client relationships, we create pseudo-observations for each partner match that *could* have occurred ex ante. For example, say that XYZ Company is audited by Deloitte throughout our sample period and that in 2018 Reid takes over as the new lead partner. Say also that there are 99 other audit partners affiliated with Deloitte during 2018. We would create a total of 100 pseudo-observations, one representing XYZ Company being matched to each of the 100 partners at Deloitte. We would then define the variable *Partner is Selected* as one for the observation that correctly links XYZ Company to Reid, and as zero for the 99 counterfactual observations that link XYZ Company to other partners. We perform this process for all 1,116 new partner-client relationships, which results in a sample of 175,442 *potential* partner-client matches.[8]

7. For the 83 partner names not on the Census Bureau list of names, we used partners' profile pictures and our own best judgment for classification. The list and relative frequency of baby names by gender can be found at https://www2.census.gov/topics/genealogy (downloaded September 8, 2020).

8. The design of our partner-client matching analysis is similar to an analysis in a contemporaneous paper by Baugh et al. (2021), who test whether physically attractive partners are more likely to be selected for engagements. A limitation of this design is that it assumes all partners at the incumbent audit firm are available to serve as a replacement partner. Yet, there are many reasons why a partner could be unavailable for a given client (e.g., cooling-off requirements, capacity constraints, conflicts of interest, etc.), some of which are unobservable and thus not considered in the analysis.

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TABLE 4
Primary misstatement analysis

Panel A: Client status

	Member of SP 500 = 1 DV = *Partner is Selected*		*Member of SP 500* = 0 DV = *Partner is Selected*		Difference	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	−0.543	0.000	−0.655	0.000	0.112	0.003
Partner Workload (Fees)	0.828	0.000	−0.409	0.000	1.237	0.000
Partner Workload (Clients)	−0.184	0.068	0.244	0.000	−0.428	0.000
Partner Attended Top School	0.375	0.069	−0.180	0.053	0.555	0.029
Partner is Leader	0.323	0.118	0.242	0.027	0.081	0.769
Partner Experience	−0.008	0.325	−0.001	0.406	−0.006	0.698
Partner is Industry Specialist	1.264	0.001	0.773	0.000	0.491	0.092
Partner Gender	0.003	0.496	−0.231	0.026	0.234	0.388
Observations	31,631		126,886		158,517	
Pseudo R^2	0.178		0.231			

Panel B: Local partner availability

	Low *Partner Ratio* DV = *Partner is Selected*		High *Partner Ratio* DV = *Partner is Selected*		Difference	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	−0.622	0.000	−0.753	0.000	0.131	0.000
Partner Workload (Fees)	−0.264	0.000	−0.402	0.000	0.138	0.020
Partner Workload (Clients)	0.245	0.000	0.231	0.000	0.014	0.726
Partner Attended Top School	0.011	0.466	−0.148	0.140	0.160	0.382
Partner is Leader	0.155	0.165	0.433	0.005	−0.277	0.167
Partner Experience	0.003	0.382	0.000	0.485	0.002	0.852
Partner is Industry Specialist	1.106	0.000	0.497	0.004	0.609	0.004
Partner Gender	−0.108	0.220	−0.254	0.042	0.147	0.436
Observations	78,489		80,028		158,517	
Pseudo R^2	0.223		0.218			

Panel C: Client industry complexity

	Complex Ind. = 1 DV = *Partner is Selected*		*Complex Ind.* = 0 DV = *Partner is Selected*		Difference	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	−0.595	0.000	−0.699	0.000	0.104	0.000
Partner Workload (Fees)	−0.345	0.000	−0.339	0.000	−0.006	0.920
Partner Workload (Clients)	0.228	0.000	0.253	0.000	−0.025	0.499
Partner Attended Top School	−0.043	0.371	−0.100	0.230	0.057	0.752
Partner is Leader	0.058	0.350	0.547	0.002	−0.489	0.014
Partner Experience	0.012	0.094	−0.008	0.158	0.020	0.103
Partner is Industry Specialist	1.199	0.000	0.699	0.000	0.501	0.026

(The table is continued on the next page.)

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TABLE 4 (continued)

Panel C: Client industry complexity

	Complex Ind. = 1 DV = *Partner is Selected*		*Complex Ind.* = 0 DV = *Partner is Selected*		Difference	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Partner Gender	−0.171	0.115	−0.198	0.083	0.027	0.887
Observations	77,967		80,550		158,517	
Pseudo R^2	0.191		0.236			

Panel D: Client geographic dispersion

	High *Geo. Dispersion* DV = *Partner is Selected*		Low *Geo. Dispersion* DV = *Partner is Selected*		Difference	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	−0.614	0.000	−0.662	0.000	0.047	0.041
Partner Workload (Fees)	−0.307	0.000	−0.346	0.000	0.039	0.517
Partner Workload (Clients)	0.202	0.000	0.255	0.000	−0.053	0.213
Partner Attended Top School	−0.123	0.214	−0.061	0.304	−0.062	0.741
Partner is Leader	0.020	0.454	0.488	0.002	−0.468	0.025
Partner Experience	0.008	0.209	−0.003	0.358	0.011	0.409
Partner is Industry Specialist	0.650	0.006	0.880	0.000	−0.230	0.343
Partner Gender	−0.076	0.309	−0.243	0.038	0.167	0.384
Observations	72,571		85,946		158,517	
Pseudo R^2	0.164		0.240			

Notes: This table models partner-client matching by fitting equation (1) using a sample of potential partner-client matches as discussed in section 4. The dependent variable for all models in this table is *Partner is Selected*. In each panel, we present the results of partitioning the sample by a different client characteristic, fitting equation (1) using seemingly unrelated regression, and testing for differences in coefficient estimates across the partition. Panel A partitions the sample into clients who are members of the S&P 500 and clients who are not. Panel B partitions the sample into clients in CBSAs with a high ratio of partners-to-clients (i.e., above the median value of *Partner Ratio*) and clients who are in CBSAs with low ratios of partners-to-clients (i.e., below the median value of *Partner Ratio*). Panel C partitions the sample into clients in industries with complex accounting rules (i.e., *Complex Ind.* = 1) and clients who are in industries without complex accounting rules (i.e., *Complex Ind.* = 0). Panel D partitions the sample into clients with more geographically dispersed operations (i.e., above the median value of *Geo. Dispersion*) and clients with less geographically dispersed operations (i.e., below the median value of *Geo. Dispersion*). Two-tailed *p*-values are provided for each coefficient, as well as for the difference between coefficients across partitions. All variables are defined in Appendix 1.

To test how different types of partners are matched to different types of clients, we partition our sample of potential matches by client characteristics (e.g., clients that are members of the S&P 500 vs. clients that are not). We then use seemingly unrelated regression to estimate the following equation separately for the resulting subsamples:

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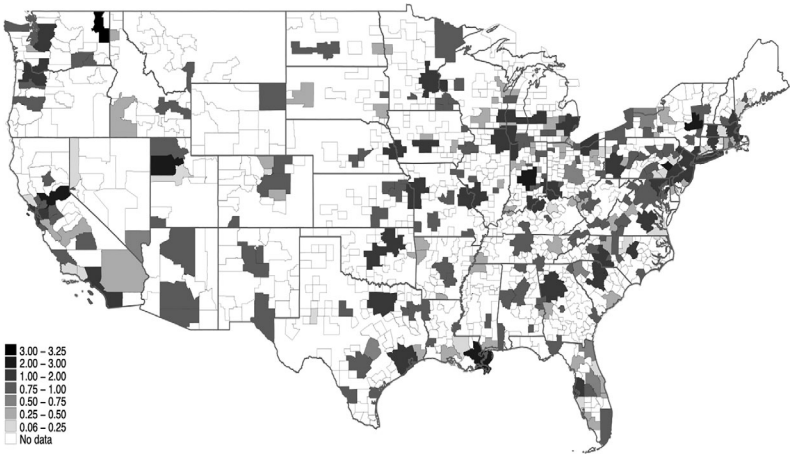
Figure 2 The ratio of partners to clients by CBSA



Notes: This figure displays the ratio of partners living in a CBSA to the number of public company clients headquartered in the CBSA during fiscal year 2017. CBSAs with more partners per public client are shaded darker on the map, as indicated by the key.

$$\begin{aligned} \textit{Partner is Selected}_t = {} & \textit{Partner Distance to Client}_{t-1} \\ & + \textit{Partner Workload (Fees)}_{t-1} + \textit{Partner Workload (Clients)}_{t-1} \\ & + \textit{Partner Attended Top School}_t + \textit{Partner is Leader}_t \\ & + \textit{Partner Experience}_{t-1} + \textit{Partner is Industry Specialist}_t \\ & + \textit{Partner Gender}_t + \varepsilon_t, \end{aligned} \tag{1}$$

where *Partner is Selected* is defined above and the other variables are discussed in section 4.[9]

We begin by partitioning clients based on whether they are "high status." We use S&P 500 membership to proxy for high-status clients and, in Table 4, panel A, we fit equation (1) separately for clients that are (*Member of SP 500* = 1) and are not (*Member of SP 500* = 0) members of the S&P 500. We find that the coefficient for *Partner Distance to Client* is negative and significant in both subsamples; however, the magnitude of the coefficient is significantly smaller (i.e., *less* negative) for clients that are members of the S&P 500. Thus, although a partner's prematch distance to a potential client reduces the odds of being matched to that client regardless of client status, distance matters significantly less for high-status clients. On the other hand, partners with experience in the client's industry, who attended a top school, and who audited fewer (but larger) clients in the prior year appear to have more important matching criteria for high-status clients than for lower status clients.

Next, we examine how the availability of partners in a client's headquarters location affects partner-client matching. To do so, we first define the variable *Partner Ratio* as the ratio of partners to public clients in the CBSA where the client is headquartered. Figure 2 provides a map of the United States separated into CBSAs, with CBSAs that have higher *Partner Ratio* shaded darker. As the figure demonstrates, the number of partners available per client varies dramatically across CBSAs. Because clients

9. We estimate robust standard errors clustered by client when fitting equation (1). Partner characteristics that vary by client (i.e., *Partner Distance to Client* and *Partner is Industry Specialist*) are defined with reference to the hypothetical client (i.e., XYZ Company in the example above) for all counterfactual observations.

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TABLE 5
Partner and office distance frequencies

	Partner distance to the client >100 km	Partner distance to the client <100 km	Total
Office distance to client >100 km	2,104	47	2,151
Office distance to client <100 km	1,090	6,162	7,252
Total	3,194	6,209	9,403

Notes: This table presents the relative frequencies with which clients are audited by partners and offices that are located more (and less) than 100 km away from the client's headquarters.

headquartered in CBSAs with few partners will necessarily be matched to distant partners more often, we expect that partner location will be a less important matching criterion for such clients. In Table 4, panel B, we test this supposition by estimating equation (1) for client-years above (High *Partner Ratio*) and below (Low *Partner Ratio*) the median value of *Partner Ratio*. We find that the coefficient for *Partner Distance to Client* is less negative for clients in CBSAs with relatively few partners to go around (i.e., Low *Partner Ratio*). Interestingly, we also find that the coefficient for *Partner is Industry Expert* is more positive for such clients, suggesting that once auditors and clients are forced to expand their search for a new partner outside the client's immediate geography, they begin to put more emphasis on partners' areas of expertise.

Next, we examine the role of clients' accounting complexity in the matching process. We follow Francis and Gunn (2017) and use the existence of industry-specific FASB guidance as an indication that accounting in the industry is particularly complex (*Complex Ind.* = 1 if industry-specific guidance exists for the client's industry, and zero otherwise). Then, in Table 4, panel C, we estimate equation (1) separately for clients in complex and noncomplex industries. Consistent with a partner's industry specialization being more important for clients in complex industries, we find that the coefficient for *Partner is Industry Specialist* is significantly more positive (i.e., a more important matching criterion) for clients where *Complex Ind.* = 1. We also find that the coefficient for *Partner Distance to Client* is significantly less negative (i.e., a less important matching criterion) for such clients, consistent with auditors and clients trading off a partner's distance for the partner's industry specialization in cases where specialization is most likely to be important.

Lastly, we examine how clients' geographic dispersion affects partner-client matching. We follow Bernile et al. (2015) and measure geographic dispersion (*Geo. Dispersion*) using the natural log of the number of unique US states mentioned in clients' 10-K filings. We then estimate equation (1) separately for clients above (High *Geo. Dispersion*) and below (Low *Geo. Dispersion*) the median value of *Geo. Dispersion*. We find in Table 4, panel D, that the coefficient for *Partner Distance to Client* is significantly less negative for geographically dispersed clients, consistent with a partner's distance to the client's headquarters being a less important matching criterion for clients that have dispersed operations.

In summary, we find in Table 4 that a partner's geographic location is an important input in the partner-client matching process. Increasing the distance between a partner and a prospective client from 10 to 500 km reduces the partner's probability of being assigned to the client by between 65% (for clients in the S&P 500) and 90% (for clients in areas with many local partners).[10] However, despite the priority given to closer partners, our analysis suggests that trade-offs are sometimes made when other partner characteristics (e.g., industry expertise) are particularly important. These findings provide some initial evidence on the research questions we discuss in section 2 and highlight what we believe could be a fruitful area for future research.

10. These are marginal effects calculated based on the coefficients estimated in Table 4, panel A.

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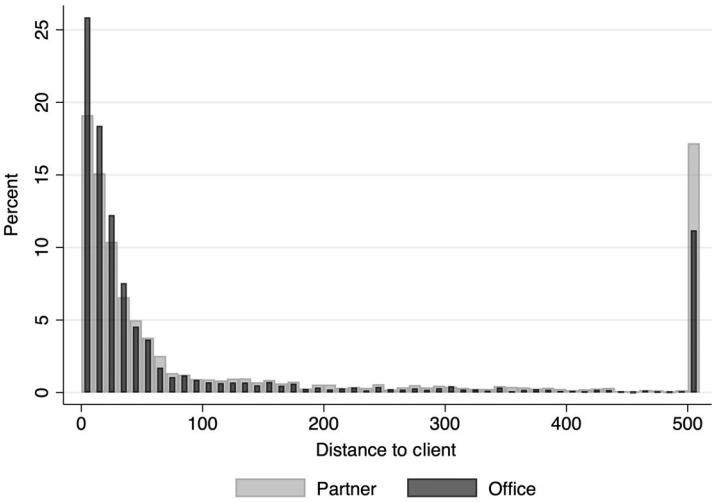
Figure 3 Histogram of partners' and offices' distances from their clients



Notes: This figure presents a histogram of audit partners' and audit offices' distance from their clients. All distances greater than 500 km are shown together at the far right end of the histogram.

5. Hypothesis tests and additional analysis

In section 2, we hypothesized that audit quality is lower when partners are located farther from their clients. In this section, we test that hypothesis. Given findings in the prior literature which suggest that the distance between audit *offices* and clients can impair audit quality, it is important to distinguish partner distance from office distance. As such, we begin by providing some descriptive information about the association between partners' and offices' distances from clients. Next, we present the results of our primary hypothesis test. Finally, we conduct a series of robustness tests and additional analyses.

The relative locations of partners, offices, and clients

We begin by exploring the association between audit partners' and audit offices' distance to their clients. Although our focus is on audit partners, Choi et al. (2012) suggest that the distance between the audit office that issues an opinion and the client's headquarters is negatively associated with audit quality. If partner and office locations only rarely differ, it may not be possible to distinguish the effect of partner distance empirically (which was not measured in Choi et al. (2012)) from the effect of office distance.

Table 5 shows the frequency with which audit partners and audit offices are located at least 100 km away from their clients. Of the 9,403 client-years in our primary sample, 3,194 (2,151)—approximately 34% (23%)—have a partner (office) located farther than 100 km away from the client's headquarters (difference significant at $p < 0.01$, untabulated). Notably, the off-diagonal cells of the table are not evenly populated. While it is relatively common for a client to have an audit office within 100 km and an audit partner located farther away (1,090 client-year observations), the reverse is not true; there are only 47 client-years in our sample with an audit partner closer than 100 km but an audit office farther away.

To facilitate further analysis, we define the variable *Office Distance to Client* as the natural log of the distance (in kilometers) between the audit office that issues an opinion and the headquarters of the related client. Figure 3 provides a histogram comparing *Partner Distance to Client* and *Office Distance to Client* (distances are unlogged in the figure for easier interpretation). On the left, we observe that there are more offices than partners located close to clients (e.g., less than 40 km). On the right side, we observe the opposite; there are more partners than offices located more than 500 km from their clients. Thus, the differences observed in Table 5 are driven primarily by the tails of the distributions. While partners' and

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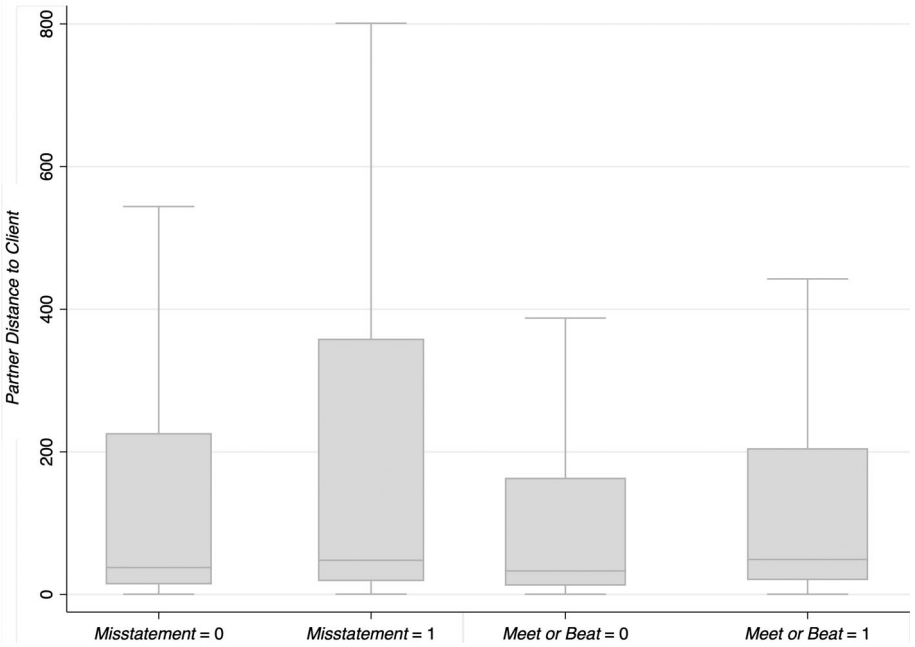
Figure 4 Box plot of partners' distance from their clients by proxies for audit quality



Notes: This figure presents box plots of partners' distance to their clients for client-years with and without a misstatement (i.e., *Misstatement* = 0 vs. *Misstatement* = 1) and for client-years that do and do not meet or beat analysts' consensus earnings forecast (i.e., *Meet or Beat* = 0 vs. *Meet or Beat* = 1). The top (bottom) of each box represent the 75th (25th) percentiles of partner distance to their clients, while the top (bottom) whiskers extend to include data points 1.5 times the interquartile range above (below) the75th (25th) quartile.

offices' distances to clients are positively correlated (74%, untabulated), many clients are nevertheless located close to their audit offices but far from their audit partners. One likely explanation for this difference is the fact that engagement partners, but not other members of the engagement team, are required to rotate off engagements every five years. Even if most new clients start with both a local audit office and a local engagement partner, a limited supply of local partners with the requisite capacity and expertise may sometimes result in the assignment of more distant partners when rotations are required. This separation of partners and offices is critical for our analysis as it will allow us to hold office distance constant while permitting variation in partner distance.

Hypothesis tests

To measure audit quality, we rely on Aobdia (2019) who finds that financial misstatements and meeting or just beating earnings benchmarks are the two academic proxies for audit quality most associated with deficiencies in PCOAB inspection and accounting firms' internal quality inspections.[11] We define the variable *Misstatement* as equal to one if a company misstates its current

11. Aobdia (2019) finds that restatements and meeting or beating an earnings benchmark are the only two publicly observable output proxies for audit quality associated with *both* PCAOB and internal inspection findings. While Aobdia (2019) finds that some accruals-based measures of audit quality are associated with PCAOB (but not internal) inspection findings, we do not use accruals measures in our tabulated analysis in part because of recent evidence that such measures can result in biased coefficient estimates (Chen et al. 2018). We acknowledge that this design choice limits the comparability of our paper with Choi et al. (2012), who use various specifications of abnormal accruals to study the relationship between office distance and audit quality. In an untabulated robustness test, we confirm that the tenor of the findings from our primary analysis is similar using absolute discretionary accruals discussed in Aobdia (2019).

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year financial statements as revealed by a subsequent restatement, and zero otherwise. We define *Meet or Beat* as an indicator variable equal to one if a company either exactly meets the consensus analyst earnings forecasts or beats it by one cent per share, and zero otherwise.[12]

Descriptive statistics for the audit quality proxies, as well as the other variables used throughout the paper, are presented in Table 3. Consistent with our hypothesis, both misstatements and meeting or beating earnings forecasts are significantly more common for clients with partners more than 100 km away. We provide a visual depiction of these relationships using boxplots in Figure 4. Again, consistent with our hypothesis, the distribution of *Partner Distance to Client* skews visibly higher for observations associated with lower audit quality (i.e., where *Misstatement* = 1 or *Meet or Beat* = 1).

We test our hypothesis formally by estimating the following model using logistic regression:

$$\begin{aligned} Misstatement(Meet\ or\ Beat)_t = {} & Partner\ Distance\ to\ Client_t + Partner\ controls_t \\ & + Audit\ office\ controls_t + Audit\ firm\ controls_t + Client\ controls_t \\ & + Audit\ opinion\ controls_t + FEs_t + \varepsilon_t. \end{aligned} \tag{2}$$

Misstatement, *Meet or Beat*, and *Partner Distance to Client* are all defined above. *Partner controls* is a vector of variables intended to control for partner characteristics other than distance to the client and includes all the partner characteristic variables discussed in section 4 (i.e., *Partner Workload (Fees)*, *Partner Workload (Clients)*, *Partner Attended Top School*, *Partner is Leader*, *Partner Experience*, *Partner is Industry Specialist*, and *Partner Gender*). *Audit office controls* is a vector of potentially confounding office characteristics, including office size (*Office Size*), office industry specialization (*Office is Industry Specialist*), and the distance between the office and the client (*Office Distance to Client*). *Audit firm controls* similarly includes audit firm characteristics, such as tenure and Big 4 status, which could affect audit quality (*Audit Firm Tenure*, *Big 4 Audit Firm*). *Client controls* is a vector of client-level variables that are typically included in audit quality models, which includes client size (*Assets*), leverage (*Leverage*), growth (*Growth*), capital raising (*New Financing*), negative income (*Loss*), and market capitalization (*Market to Book*). Given our focus on the geographic locations of clients and their partners, we also include the size of the CBSA where clients are located (*Population*) as a control. The *Client controls* vector also includes our proxies for client status (*Member of SP 500*), complexity (*Complex Ind.*), and geographic dispersion (*Geo. Dispersion*) discussed in section 4. Finally, when *Meet or Beat* is the dependent variable, we control for the number of analysts following the client (*Analyst Following*).

Audit opinion controls is a vector of variables related to clients' audit opinions and which could reflect on financial reporting quality and auditor independence. Namely, the vector includes controls for whether the client received a material weakness in the current year (*Material Weakness Opinion*), the presence of a going concern modification (*Going Concern Opinion*), and the misstatement of the prior year's financial statements despite the issuance of an unqualified opinion (*Misstatement* $(t-1)$). We include industry, year, and region fixed effects and calculate robust standard errors clustered by client in all estimations of equation (2).[13]

12. To avoid including stale forecasts in our consensus measure, we estimate the consensus analyst forecast manually using the mean value of all earnings forecasts in the I/B/E/S detail file that are less than 75 days old as of the earnings announcement. We also use analysts' forecasts of GAAP earnings (not so-called "street" earnings) as auditors are responsible for the accuracy of GAAP financial statements and not necessarily of alternative non-GAAP performance measures. Our sample size is reduced when *Meet or Beat* is the dependent variable because I/B/E/S data are not available for all client-years in our primary sample.

13. We use the Fama and French 10-industry classifications for industry fixed effects. The five geographic regions are defined by the US Census Bureau as discussed at https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf.

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TABLE 6
Primary misstatement analysis

	Model 1 Full sample DV = *Misstatement*		Model 2 Client-years for which *Office Distance to Client* <100 km DV = *Misstatement*	
	Coeff.	*p*-value	Coeff.	*p*-value
Variables of interest				
Partner Distance to Client	0.119	0.002	0.122	0.004
Audit partner controls				
Partner Workload (Fees)	−0.027	0.751	−0.025	0.802
Partner Workload (Clients)	−0.042	0.109	−0.134	0.013
Partner Attended Top School	0.013	0.932	0.048	0.798
Partner is Leader	0.128	0.406	0.165	0.370
Partner Experience	0.013	0.117	−0.000	0.987
Partner is Industry Specialist	−0.100	0.570	−0.090	0.669
Partner Gender	−0.190	0.221	−0.300	0.105
Audit office controls				
Office Size	0.142	0.004	0.130	0.026
Office is Industry Specialist	0.212	0.102	0.204	0.175
Office Distance to Client	−0.021	0.618	0.041	0.558
Audit firm controls				
Audit Firm Tenure	−0.000	0.987	−0.003	0.856
Big 4 Audit Firm	−0.587	0.003	−0.685	0.002
Client controls				
Geo. Dispersion	−0.027	0.770	−0.064	0.567
Population	−0.011	0.827	−0.034	0.638
Member of SP 500	−0.338	0.161	−0.333	0.194
Assets	−0.042	0.439	−0.030	0.626
Leverage	−0.011	0.810	−0.004	0.946
Growth	0.289	0.001	0.258	0.018
Loss	0.125	0.427	0.146	0.443
Market to Book	−0.015	0.102	−0.012	0.269
New Financing	−0.144	0.300	−0.219	0.174
Complex Ind.	0.007	0.969	−0.082	0.698
Audit opinion controls				
Material Weakness Opinion	−0.273	0.244	−0.499	0.105
Going Concern Opinion	−0.139	0.629	0.132	0.698
Misstatement $(t-1)$	3.314	0.000	3.398	0.000
Pseudo R^2	0.249		0.263	
Observations	9,403		7,252	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	

Notes: This table presents the results of estimating equation (2) using logistic regression and using *Misstatement* as the dependent variable. Model 1 estimates equation (2) using our full sample. Model 2 limits the sample to client-years with audit offices less than 100 km away from the client's headquarters. Two-tailed *p*-values are provided for each coefficient. All variables are defined in Appendix 1.

In Table 6 we tabulate our estimation of equation (2) using *Misstatement* to measure audit quality. In model 1, we present results using the full sample. Consistent with our hypothesis, the coefficient for *Partner Distance to Client* is positive and significant, suggesting that the probability of a misstatement increases as a partner's distance to their client increases. The coefficient of

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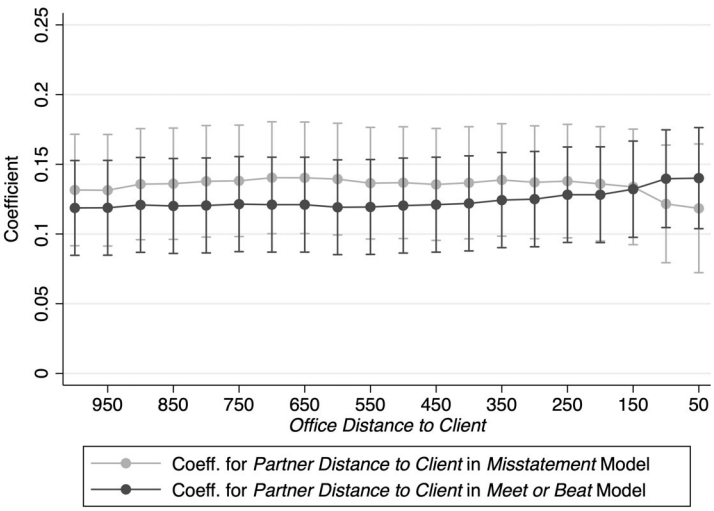
Figure 5 The effect of partner distance for different values of office distance



Notes: This figure presents the values of coefficient point estimates and standard error bars for the variable *Partner Distance to Client* obtained by fitting equation (2) while restricting the sample using different cutoff values of *Office Distance to Client*. The full set of coefficient estimates (including control variables) for a cutoff value of 100 km are presented as model 2 in Table 6 (using *Misstatement* as the dependent variable) and as model 2 in Table 7 (using *Meet or Beat* as the dependent variable).

0.119 suggests that as the distance between a client and their partner increases from 10 to 100 to 500 km, the probability of a misstatement increases from 2.0% to 2.5% to 3.0%.[14]

As discussed in section 5, *Partner Distance to Client* and *Office Distance to Client* are highly correlated, and prior research shows that the distance between offices and their clients is negatively associated with audit quality (Choi et al. 2012). Although we control for *Office Distance to Client* in model 1 of Table 6 (and in all our subsequent analyses), we provide further evidence that our findings are independent of Choi et al. by limiting our sample to client-years audited by offices that are closer than 100 km from the clients' headquarters. We present the results of this test in model 2 of Table 6. The coefficient for *Partner Distance to Client* remains positive, significant, and of similar magnitude to the coefficient in model 1, providing assurance that our findings are truly related to partner (and not office) distance. Because the 100 km threshold of office distance used to restrict the sample in model 2 is somewhat arbitrary, in Figure 5 we limit our sample using various thresholds of office distance ranging from 1,000 to 50 km and plot the coefficient for *Partner Distance to Client* estimated in each increasingly restrictive subsample. As the figure demonstrates, the estimated effect of partner distance is not sensitive to our choice of threshold, nor does there appear a significant incremental effect of partner distance when the audit office is closer to the client.

In Table 7 we conduct a similar analysis using *Meet or Beat* as a proxy for audit quality and reach similar conclusions. In model 1 of Table 7, we estimate equation (2) using the full sample for which analyst forecast data is available. The coefficient of 0.100 suggests that as the distance between a client and partner increases from 10 to 100 to 500 km, the probability of a meeting or just beating analysts' earnings forecast increases from 6.0% to 7.4% to 8.6%. Model 2 shows that the association is robust to excluding client-years with offices farther away than 100 km, and Figure 5 demonstrates that the analysis is not sensitive to our choice of threshold.

14. These marginal effects are calculated holding all control variables at their mean values.

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TABLE 7
Primary meet or beat analysis

	Model 1 Full sample DV = *Meet or Beat*		Model 2 Client-years for which *Office Distance to Client* <100 km DV = *Meet or Beat*	
	Coeff.	*p*-value	Coeff.	*p*-value
Variables of interest				
Partner Distance to Client	0.100	0.002	0.140	0.000
Audit partner controls				
Partner Workload (Fees)	−0.086	0.190	−0.104	0.175
Partner Workload (Clients)	−0.002	0.945	0.042	0.383
Partner Attended Top School	−0.059	0.658	−0.124	0.414
Partner is Leader	−0.043	0.772	0.023	0.891
Partner Experience	−0.003	0.678	−0.007	0.458
Partner is Industry Specialist	−0.054	0.736	0.004	0.982
Partner Gender	0.285	0.017	0.196	0.144
Audit office controls				
Office Size	−0.030	0.472	−0.052	0.292
Office is Industry Specialist	−0.321	0.006	−0.344	0.008
Office Distance to Client	−0.016	0.673	0.083	0.151
Audit firm controls				
Audit Firm Tenure	−0.011	0.313	−0.009	0.481
Big 4 Audit Firm	−0.165	0.374	−0.130	0.554
Client controls				
Geo. Dispersion	0.095	0.261	0.059	0.535
Population	−0.059	0.227	0.022	0.743
Member of SP 500	0.161	0.400	0.264	0.200
Assets	−0.220	0.000	−0.215	0.000
Leverage	−0.180	0.369	−0.252	0.242
Growth	−0.297	0.004	−0.317	0.021
Loss	−0.355	0.007	−0.187	0.193
Market to Book	0.004	0.534	0.003	0.584
New Financing	−0.344	0.002	−0.328	0.011
Complex Ind.	0.266	0.150	0.341	0.107
Analyst Following	0.161	0.043	0.151	0.081
Audit opinion controls				
Material Weakness Opinion	−0.216	0.442	0.022	0.940
Going Concern Opinion	−1.071	0.004	−1.071	0.009
Misstatement $(t-1)$	−0.105	0.630	−0.220	0.374
Pseudo R^2	0.063		0.067	
Observations	6,069		5,024	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	

Notes: This table presents the results of estimating equation (2) using logistic regression and using *Meet or Beat* as the dependent variable. Model 1 estimates equation (2) using our full sample. Model 2 limits the sample to client-years with audit offices less than 100 km away from the client's headquarters. Two-tailed *p*-values are provided for each coefficient. All variables are defined in Appendix 1.

Based on the analyses in Tables 6 and 7, we conclude that our hypothesis is supported; partners' geographic distance from their clients is negatively associated with audit quality and this effect is independent of office distance. We also note that, inconsistent with Choi et al. (2012),

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Office Distance to Client is not significantly associated with audit quality in Tables 6 and 7. We return to this issue and attempt to reconcile our findings with the prior literature in section 5.

Additional analysis

IV estimation

One limitation of using standard regression analysis to test the hypothesis in section 5 is that we can only control for *observable* differences between clients with closer versus more distant partners. However, a major concern in our setting is that clients are matched to partners based on characteristics that are associated with audit quality but that are *unobservable*. For example, audit partners with high levels of expertise may be asked to serve the highest risk clients, even if such clients are located far from the partners' home locations. Thus, the association between partner distance and misstatements could be driven by unobservable client risk. The "textbook solution" to such endogeneity problems is IV estimation (Larcker and Rusticus 2010, 186).

To implement IV estimation, we must first identify a suitable instrument. As noted by Larcker and Rusticus (2010, 191), a valid instrument must fulfill two requirements: (i) the "strong instrument requirement," which dictates that the instrument be "moderately to highly correlated with the endogenous regressor of interest" and (ii) the "exclusion restriction requirement," which dictates that the instrument be "considerably more exogenous" than the endogenous regressor of interest. In our setting, these requirements necessitate an instrument that is strongly correlated with the distance between companies and their audit partners, but unlikely to be separately associated with the likelihood of a misstatement or meeting analysts' forecasts. We argue that the ratio of partners to clients in the CBSAs where companies are headquartered (*Partner Ratio*) fulfills both requirements.

The strong instrument requirement is easily testable. As shown in Table 3, client-years with more distant partners are disproportionately in CBSAs with lower *Partner Ratio*. The univariate correlation between *Partner Distance to Client* and *Partner Ratio* is −0.31 (significant at $p < 0.01$, not tabulated). Thus, *Partner Ratio* appears to be a strong instrument.

As noted by Larcker and Rusticus (2010, 191), "If the instrument selected by the researcher is moderately to highly correlated with [the endogenous variable of interest] (which can be tested) and a compelling theoretical or practical argument can be made regarding why the instrument is considerably *more* exogenous than [the endogenous variable of interest], then the IV estimator will be preferred." Thus, having established the high correlation between *Partner Distance to Client* and *Partner Ratio* discussed above, our next task is to provide an intuitive argument for why *Partner Ratio* is more exogenous than *Partner Distance to Client*. To that end, we begin by pointing out that, unlike the location of the partner selected for an audit engagement, the ratio of partners to public clients in a company's CBSA is a choice variable for neither the auditor nor their client. Although companies do choose where to locate their headquarters, we argue that it is very unlikely that any public company uses the density of local audit partners as a decision criterion when doing so. We acknowledge that partners may choose where to live based on their clients' locations rather than commuting, as demonstrated in section 4. However, we hasten to add that partners' location decisions only present a problem for IV estimation if partners systematically choose to locate near clients with *low* levels of unobservable risk, which is the most likely confound in our setting. It seems unlikely that audit partners would disproportionately choose to relocate near their *least* risky clients where, presumably, they need to spend relatively less time.

We present results of the IV estimation in Table 8. In panel A, we use *Misstatement* as the dependent variable, and in panel B, we use *Meet or Beat* as the dependent variable. We follow the recommendation of Larcker and Rusticus (2010) and tabulate coefficient estimates for both the first (model 1 in panel A, model 3 in panel B) and second (model 2 in panel A, model 4 in panel B) stages of the IV estimation process. The first-stage results show that

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TABLE 8
Instrumental variables

Panel A: IV using *Misstatement* as a proxy for audit quality

	Model 1 Full sample DV = *Partner Distance to Client*		Model 2 Full sample DV = *Misstatement*	
	Coeff.	*p*-value	Coeff.	*p*-value
Instrument				
Partner Ratio	−0.311	0.000		
Variable of interest				
Partner Distance to Client			0.946	0.005
Audit partner controls				
Partner Workload (Fees)	0.036	0.122	−0.046	0.276
Partner Workload (Clients)	0.020	0.002	−0.038	0.010
Partner Attended Top School	−0.090	0.087	0.110	0.187
Partner is Leader	−0.071	0.222	0.136	0.110
Partner Experience	0.004	0.211	0.001	0.754
Partner is Industry Specialist	0.004	0.945	−0.063	0.471
Partner Gender	−0.116	0.034	0.008	0.926
Audit office controls				
Office Size	−0.108	0.000	0.164	0.000
Office is Industry Specialist	0.205	0.000	−0.089	0.354
Office Distance to Client	0.778	0.000	−0.704	0.007
Audit firm controls				
Audit Firm Tenure	−0.005	0.316	0.002	0.716
Big 4 Audit Firm	0.324	0.000	−0.574	0.000
Client controls				
Geo. Dispersion	0.073	0.036	−0.087	0.112
Population	−0.030	0.129	0.077	0.049
Member of SP 500	0.245	0.016	−0.371	0.014
Assets	0.066	0.000	−0.079	0.018
Leverage	0.022	0.003	−0.026	0.187
Growth	−0.014	0.448	0.147	0.001
Loss	0.021	0.612	0.048	0.517
Market to Book	0.000	0.873	−0.008	0.082
New Financing	−0.016	0.671	−0.042	0.527
Complex Ind.	−0.031	0.662	0.056	0.572
Audit opinion controls				
Material Weakness Opinion	−0.010	0.882	−0.078	0.547
Going Concern Opinion	0.132	0.019	−0.134	0.313
Misstatement $(t-1)$	−0.166	0.001	1.854	0.000
Adjusted R^2	0.600			
Observations	9,403		9,403	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	

(The table is continued on the next page.)

(as expected) *Partner Ratio* is a strong predictor of *Partner Distance to Client*, even after controlling for other observable factors such as client industry, size, and audit office distance. When we use the instrumented (i.e., first-stage predicted) value of *Partner Distance to Client*

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TABLE 8 (continued)

Panel B: IV using *Meet or Beat* as a proxy for audit quality

	Model 3 Full sample DV = *Partner Distance to Client*		Model 4 Full sample DV = *Meet or Beat*	
	Coeff.	*p*-value	Coeff.	*p*-value
Instrument				
Partner Ratio	−0.310	0.000		
Variable of interest				
Partner Distance to Client			0.619	0.024
Audit partner controls				
Partner Workload (Fees)	0.059	0.081	−0.081	0.049
Partner Workload (Clients)	−0.006	0.686	0.005	0.784
Partner Attended Top School	−0.098	0.137	0.027	0.705
Partner is Leader	−0.109	0.151	0.061	0.459
Partner Experience	0.005	0.355	−0.004	0.379
Partner is Industry Specialist	−0.020	0.788	−0.012	0.877
Partner Gender	−0.157	0.022	0.228	0.003
Audit office controls				
Office Size	−0.131	0.000	0.059	0.158
Office is Industry Specialist	0.272	0.000	−0.323	0.001
Office Distance to Client	0.732	0.000	−0.425	0.037
Audit firm controls				
Audit Firm Tenure	−0.005	0.344	−0.002	0.688
Big 4 Audit Firm	0.315	0.000	−0.242	0.055
Client controls				
Geo. Dispersion	0.083	0.079	−0.001	0.988
Population	−0.052	0.047	0.031	0.407
Member of SP 500	0.166	0.137	−0.022	0.836
Assets	0.072	0.008	−0.155	0.000
Leverage	0.260	0.005	−0.228	0.055
Growth	−0.033	0.327	−0.138	0.054
Loss	0.042	0.474	−0.198	0.009
Market to Book	−0.001	0.625	0.003	0.356
New Financing	−0.063	0.218	−0.137	0.028
Complex Ind.	−0.080	0.408	0.176	0.074
Analyst Following	0.033	0.397	0.061	0.160
Audit opinion controls				
Material Weakness Opinion	−0.063	0.414	−0.072	0.615
Going Concern Opinion	0.001	0.991	−0.531	0.004
Misstatement $(t-1)$	−0.229	0.001	0.059	0.651
Adjusted R^2	0.510			
Observations	6,069		6,069	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	

Notes: In this table, we present the results of our IV analysis, in which we use the ratio of partners to public companies in clients CBSAs (*Partner Ratio*) as a source of variation in *Partner Distance to Client* that is plausibly exogenous to client-specific confounds such as complexity and risk. Panel A (models 1 and 2) performs the analysis using *Misstatement* as a proxy for audit quality while panel B (models 3 and 4) uses *Meet or Beat*. In each panel, the first model (models 1 and 3) report first-stage results and the second model (models 2 and 4) report second-stage results. All variables are defined in Appendix 1.

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TABLE 9
Cross-sectional analysis: Direct flights

Panel A: Cross-sectional analysis partitioning on direct flights and using *Misstatements* as a proxy for audit quality

	Direct flight DV = *Misstatement*		No direct flight DV = *Misstatement*	
	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	0.116	0.005	0.240	0.000
Pseudo R^2	0.250		0.254	
Observations	8,267		7,345	
Controls	Yes		Yes	
Fixed Effects	Ind., Reg., and Year		Ind., Reg., and Year	
Partner Distance to Client for Direct flight = *Partner Distance to Client* for No direct flight			$p = 0.027$	

Panel B: Cross-sectional analysis partitioning on direct flights and using *Meet or Beat* as a proxy for audit quality

	Direct flight DV = *Meet or Beat*		No direct flight DV = *Meet or Beat*	
	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	0.109	0.002	0.251	0.000
Pseudo R^2	0.061		0.075	
Observations	5,375		4,881	
Controls	Yes		Yes	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	
Partner Distance to Client for Direct flight = *Partner Distance to Client* for No direct flight			$p = 0.004$	

Notes: This table presents the results of estimating equation (2) separately for client-years with partners that have access to a direct flight to the client's headquarters versus those that do not have access to a direct flight. Client-years with partners located closer than 100 km from the client's headquarters are included in both samples as a reference group. Two-tailed *p*-values for the difference in the coefficient for the variable *Partner Distance to Client* across the models are provided at the bottom of each panel. Panel A performs the analysis using *Misstatement* as a proxy for audit quality and panel B uses *Meet or Beat*. All variables are defined in Appendix 1.

as our test variable in the second stage, we continue to find that partner distance is significantly associated with both *Misstatement* and *Meet or Beat*.[15] This analysis provides evidence consistent with our primary tests and reduces concerns about the potentially confounding effects of the endogenous partner-client matching process.

Moderating effect of direct flights

In our primary analysis, partner distance captures the ease with which partners can visit their clients' headquarters, with an assumption that partners who can visit their clients' headquarters more

15. Because the first stage of our IV model has a continuous dependent variable (*Partner Distance to Client*) and the second stage has a dichotomous dependent variable (*Misstatement* and *Meet or Beat*) we use Stata's IVPROBIT command for estimation, which calculates corrected standard errors in the second stage.

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TABLE 10
Cross-sectional analysis: Client's geographic dispersion

Panel A: Cross-section analysis partitioning on geographic dispersion and using *Misstatement* as a proxy for audit quality

	Low *Geo. Dispersion* DV = *Misstatement*		High *Geo. Dispersion* DV = *Misstatement*	
	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	0.202	0.002	−0.008	0.898
Pseudo R^2	0.309		0.234	
Observations	3,842		3,841	
Controls	Yes		Yes	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	
Partner Distance to Client for high *Geo. Dispersion* = *Partner Distance to Client* for low *Geo. Dispersion*			$p = 0.017$	

Panel B: Cross-section analysis partitioning on geographic dispersion and using *Meet or Beat* as a proxy for audit quality

	Low *Geo. Dispersion* DV = *Meet or Beat*		High *Geo. Dispersion* DV = *Meet or Beat*	
	Coeff.	*p*-value	Coeff.	*p*-value
Partner Distance to Client	0.181	0.005	0.059	0.229
Pseudo R^2	0.111		0.059	
Observations	2,473		2,472	
Controls	Yes		Yes	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	
Partner Distance to Client for high *Geo. Dispersion* = *Partner Distance to Client* for low *Geo. Dispersion*			$p = 0.007$	

Notes: This table presents the results of estimating equation (2) separately for client-years above and below the median value of *Geo. Dispersion*. Two-tailed *p*-values for the difference in the coefficient for the variable *Partner Distance to Client* across the models are provided at the bottom of each panel. Panel A performs the analysis using *Misstatement* as a proxy for audit quality and panel B uses *Meet or Beat*. All variables are defined in Appendix 1.

easily will do so more often. However, even for a given distance between partners and their clients, the ease with which partners can travel that distance may vary. Indeed, a partner might find it more convenient to travel a longer distance via a direct flight than to travel a shorter distance that involves either a connecting flight or a large amount of driving. Consistent with this reasoning, prior research has found that access to direct flights significantly increases interactions between economic agents. For example, in a large survey of venture capitalists, Bernstein et al. (2016, 1591) find that "almost 90% indicate that direct flights increase their interaction with their portfolio companies and management and help them better understand companies' activities." If direct flights also increase the interactions between partners and their engagement teams and audit clients, then access to a direct flight should mitigate the negative effect of partner distance on audit quality.

We follow Bernstein et al. (2016) to identify direct flights using data from the Department of Transportation (DOT) T-100 Domestic Segments Database. This data contains the gate-to-gate duration of all nonstop commercial flight segments in the United States. For each partner-client pair in our

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TABLE 11
Reconciling to the prior literature on audit office distance

	Model 1 Full sample DV = *Misstatement*		Model 2 Full sample DV = *Meet or Beat*	
	Coeff.	*p*-value	Coeff.	*p*-value
Variable of interest				
Office Distance to Client	0.078	0.010	0.057	0.015
Audit partner variables				
Partner Workload (Fees)	−0.024	0.709	−0.082	0.087
Partner Workload (Clients)	−0.041	0.000	−0.001	0.917
Partner Attended Top School	0.009	0.932	−0.069	0.038
Partner is Leader	0.119	0.562	−0.054	0.683
Partner Experience	0.013	0.025	−0.003	0.504
Partner is Industry Specialist	−0.084	0.307	−0.052	0.459
Partner Gender	−0.196	0.142	0.273	0.010
Audit office variables				
Office Size	0.130	0.000	−0.042	0.469
Office is Industry Specialist	0.231	0.209	−0.301	0.000
Audit firm variables				
Audit Firm Tenure	−0.000	0.934	−0.011	0.000
Big 4 Audit Firm	−0.555	0.027	−0.133	0.196
Geo. Dispersion	−0.019	0.819	0.102	0.049
Population	−0.017	0.644	−0.065	0.150
Member of SP 500	−0.310	0.250	0.184	0.020
Assets	−0.036	0.517	−0.212	0.000
Leverage	−0.008	0.752	−0.157	0.115
Growth	0.286	0.000	−0.300	0.013
Loss	0.130	0.410	−0.346	0.044
Market to Book	−0.016	0.206	0.003	0.579
New Financing	−0.141	0.321	−0.347	0.000
Complex Ind.	0.009	0.952	0.260	0.053
Audit opinion variables				
Material Weakness Opinion	−0.272	0.139	−0.212	0.404
Going Concern Opinion	−0.136	0.528	−1.065	0.022
Misstatement $(t-1)$	3.288	0.000	−0.122	0.651
Analyst Following			0.164	0.060
Pseudo R^2	0.247		0.060	
Observations	9,403		6,069	
Fixed effects	Ind., Reg., and Year		Ind., Reg., and Year	

Notes: This table presents the results of estimating equation (2) excluding *Partner Distance to Client*. All variables are defined in Appendix 1.

sample, we identify all nonstop flights by major carriers between airports within 100 km of the partner's home location and airports within 100 km of the client's headquarters.[16] We then calculate the total travel time required to take each of these direct flights, including (i) the estimated driving time between the partner's home location and the departure airport, (ii) the estimated driving time between

16. Major carriers are the top four US carriers by number of passengers in 2016 (American, United, Southwest, and Delta). We also require that routes be flown at least twice weekly throughout the year and that they carry an average of at least 20 passengers per flight.

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the arrival airport and the client's headquarters, (iii) the average gate-to-gate flight time from the T-100 Domestic Segments data, and (iv) an assumed 30-minute buffer for getting through airport security.[17] We choose the direct route with the shortest total travel time and compare it to the amount of time it would take the partner to commute to the client's headquarters by car. We define the variable *Direct Flight* as equal to one when a partner has access to a direct flight to their client's location that results in a travel time savings over driving, and zero otherwise.

In Table 9 we estimate equation (2) separately for client-years where *Direct Flight* = 0 versus client-years where *Direct Flight* = 1 and compare the coefficients for *Partner Distance to Client*. Observations with partners located closer than 100 km (for which *Direct Flight* always equals zero) are included as a reference group in both subsamples. Coefficient estimates for control variables are not reported for brevity. Using both *Misstatement* (panel A) and *Meet or Beat* (panel B) as proxies for audit quality, we find that direct flights mitigate (but do not fully eliminate) the negative relationship between partner distance and audit quality. We believe this test provides strong corroborating evidence for our hypothesis, as any alternative explanation for our primary results must also explain their cross-sectional association with the availability of a direct flight.

Moderating effect of clients' geographic dispersion

In the analyses above we measure *Partner Distance to Client* as the distance between partners' home locations and the location of their clients' headquarters. This approach implicitly assumes that important accounting and auditing decisions are being made by managers and audit team members who work at clients' headquarters. However, for firms with operations spread across the country, many such decisions could be dispersed geographically to component managers and audit teams, in which case we would expect partners' distance to their clients' headquarters to matter less. We test this possibility by splitting our sample at the median value of *Geo. Dispersion* (discussed in section 4 and defined in Appendix 1) and estimating equation (2) separately in the resulting subsamples. The results of this analysis are presented in Table 10. We do not report coefficient estimates for control variables to conserve space. Using both *Misstatement* (panel A) and *Meet or Beat* (panel B) as proxies for audit quality, we find that clients' geographic dispersion fully mitigates the relation between *Partner Distance to Client* and audit quality. As with the effect of direct flights, we believe this test corroborates our interpretation of our primary hypothesis tests.

Reconciling to the prior literature on audit office distance

We control for *Office Distance to Client* in all our audit quality analyses to distinguish the effects of audit partner distance from the effects of audit office distance. However, inconsistent with the findings of Choi et al. (2012) we find little evidence of an office distance effect in our analysis (i.e., the coefficient for *Office Distance to Client* is statistically insignificant in Tables 6 and 7). There are two plausible explanations for this apparent inconsistency. First, our audit quality proxies, sample period, and other sample design criteria are different from those in Choi et al., which could potentially lead to different findings. Second, the recent introduction of Form AP allows us to observe and control for partners' distance to clients in our models. If the distance of partners from their clients represents a correlated omitted variable in Choi et al., its inclusion in our analysis could explain the discrepancy in our results.

To gain further insight into this issue, we spoke with several practicing auditors at various points in their careers (experienced partners, new partners, managers, seniors, and staff).[18] We learned that, at least in the view of the auditors with whom we spoke, the distance between a practice office and a client's headquarters has little to no impact on the amount of time junior

17. Driving times are estimated using the Here.com application program interface.

18. We reached out to five personal contacts who were practicing auditors at the time that we spoke with them. These conversations were informal in nature, intended to gain background knowledge. Like our sample period, the conversations predate the COVID-19 pandemic.

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audit team members (seniors and staff) spend on-site with the client. If the client is located near the practice office that staffs the engagement, seniors and staff commute daily to the client's location throughout fieldwork. If the client is located too far for daily commuting, seniors and staff typically stay in hotels near the client's location. In either case, seniors and staff are expected to work *in the field* for the duration of fieldwork. Partners, on the other hand, decide from which office they staff their engagement, how much responsibility to delegate to the rest of the audit team, and how often to personally visit the client and sit with the audit team in the field.[19] The auditors we spoke with confirmed that it is common for out-of-town partners to staff their engagements from offices located closer to the client. They also confirmed that out-of-town partners often get less face time with both client management and the rest of the audit team.

Given the feedback we received from practicing auditors on the lack of an association between *Office Distance to Client* and audit quality in our empirical results, we attempt to reconcile our findings to those of Choi et al. by estimating equation (2) excluding *Partner Distance to Client*. We present the results of this test using *Misstatement* (*Meet or Beat*) as the dependent variable in model 1 (model 2) of Table 11. Consistent with Choi et al, we find that, after excluding *Partner Distance to Client*, the coefficient for *Office Distance to Client* is positive and significant in both models. We conclude that partners' distance to their clients likely represents a correlated omitted variable in Choi et al., potentially confounding their inferences.

6. Conclusion and limitations

Using mandated disclosures that reveal the identity of the lead engagement partner for publicly traded US firms, we examine the role of a partner's geographic location in the audit process. We begin by exploring the role of partners' geographic locations in the partner-client matching process. We find that partners' locations vis-à-vis potential clients is an important matching criterion, with more distant partners having a much lower likelihood of being chosen for an engagement.

Building on a broad literature exploring the consequences of geographic proximity between economic agents, we also predict that audit quality is reduced when lead engagement partners are located farther from their clients. Our empirical findings are consistent with this prediction. Specifically, clients are more likely to misstate their financial statements and just to meet or beat analysts' consensus earnings forecasts when the lead engagement partner is located farther away. These results are robust to IV estimation. In addition, the association between the quality of clients' audited earnings and partner distance varies cross-sectionally in ways that are consistent with a causal interpretation; the magnitude of the effect is less for audit partners with access to a direct flight to the client and when the client is more geographically dispersed. As noted in the introduction, the partner distance effects documented in our study should be of interest to accounting firms, audit committees, regulators, and the users of audited financial statements.

Our study has several limitations. First, we acknowledge that partner-client matching is an endogenous process. Clients' motives when selecting an audit partner are unobservable and could have a confounding influence on our analysis. For example, clients who wish to manage earnings may seek out a distant audit partner in the belief that a distant partner will be less likely to detect and restrain aggressive accounting. Thus, the negative association between partner distance and financial reporting quality documented in this paper could be a result of high-risk clients selecting distant partners and not a direct effect of distant partners conducting lower-quality audits.[20] Second, because nonpartner

19. According to the auditors we spoke with, the engagement team selection process typically involves both the lead engagement partner and the administrative team (e.g., the human resources group) in the office where the engagement staff are based. The selection process can be affected by factors such as the demand for staff from other audit teams, whether staff worked on the engagement during the previous year, and staff preferences about the types of clients they want to serve. However, subject to these personnel constraints, engagement partners are given significant latitude in building their engagement teams.

20. We note that such a possibility presumes that clients themselves believe distant partners will conduct less effective audits.

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members of the audit engagement team typically work on-site at the client's location, we are unable to establish whether our findings are driven by (i) partners interactions with client management, (ii) partners interactions with their engagement teams, or (iii) both. We suggest that disentangling these effects could be a productive endeavor for future research.

Appendix 1: Variable definitions

Audit quality variables	
Meet or Beat	Indicator variable equal to one if a client either exactly meets the consensus analyst earnings forecasts or beats it by one cent per share, zero otherwise. Consensus analyst earnings forecasts are calculated manually from the I/B/E/S details file using all GAAP EPS forecasts that were issued or updated less than 75 days prior to the earnings announcement
Misstatement	Indicator variable equal to one if a company misstates its financial statements as revealed by a subsequent restatement, equal to zero otherwise
Audit partner variables	
Partner Distance to Client	Natural log of the ellipsoidal distance between the coordinates of a client's headquarters and the home location of the audit partner that signs the associated audit opinion for a given fiscal year (Vincenty 1975). An unlogged version of this variable is used when presenting descriptive statistics
Partner Workload (Fees)	Total audit fees paid by clients of a given partner in a given fiscal year
Partner Workload (Clients)	Number of unique clients for which a given partner signs audit opinions in a given fiscal year
Partner Attended Top School	Indicator variable equal to one if a partner reports (in their online profile) having attended one of the schools on the 2021 *US News and World Report* Top 10 Rankings included in Appendix 2, equal to zero otherwise
Partner is Leader	Indicator variable equal to one if a partner discusses being in a leadership position at their firm, as indicated by the phrases "managing partner," "lead partner," or "partner in charge" in their online profile, and equal to zero otherwise
Partner Experience	Number of years between the current fiscal year and the year in which a partner reports having graduated from college in their online profile
Partner is Industry Specialist	Indicator variable equal to one if a partner discusses the client's Fama-French 10-industry in their online profile using one of the keywords shown in Appendix 3, equal to zero otherwise
Partner Gender	Indicator variable equal to one if a partner's given (i.e., first) name is more commonly given to baby girls than to baby boys in the United States according to the US Census Bureau, equal to zero otherwise. For 83 partners (out of 1,836 partners in our study) with names that do not appear in the Census Bureau data, we used the partners' profile pictures and our own best judgment to assign them a value of either one or zero
Partner is Selected	Indicator variable equal to one if the partner was selected to take over the audit engagement, equal to zero otherwise
Partner has Direct Flight	Indicator variable equal to one if a partner has access to a direct flight to the client's headquarters, equal to zero otherwise. To determine whether a partner has access to a direct flight, we search for all nonstop flights by major carriers (i.e., American, United, Southwest, and Delta) between airports within 100 km of the partner's home location and airports within 100 km of the client's headquarters. We require that routes be flown at least twice weekly throughout the year and that they carry an average of at least 20 passengers per flight. We then calculate the total travel time required to take each of these direct flights, including (i) the estimated driving time between the partner's home location and

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(continued)

	the departure airport, (ii) the estimated driving time between the arrival airport and the client's headquarters, (iii) the average gate-to-gate flight time, and (iv) an assumed 30-min. buffer for getting through airport security. We chose the direct route with the shortest total travel time and compare it to the amount of time it would take the partner to commute to the client's headquarters by car. We consider partners who can save travel time by flying the route described above to have access to a direct flight. Flight data are obtained from the Department of Transportation T-100 Domestic Segments database and driving times are estimated using the Here.com application programming interface
Audit office variables	
Office Distance to Client	Natural log of the ellipsoidal distance between the coordinates of a client's headquarters and the home location of the audit office that issues the associated audit opinion for a given fiscal year (Vincenty 1975). An unlogged version of this variable is used when presenting descriptive statistics
Office Size	Natural log of all the audit fees paid by clients for which an audit office issues the opinion during a given year
Office is Industry Specialist	Indicator variable equal to one if the audit office earns more audit fees in the client's industry than any other office in the same CBSA during the current fiscal year, equal to zero otherwise
Audit firm variables	
Big 4 Audit Firm	Indicator variable equal to one if the auditor for a given client-year is a member of the Big 4, equal to zero otherwise
Audit Firm Tenure	Number of years a client's audit has been performed by the current audit firm
Audit opinion variables	
Going Concern Opinion	Indicator variable equal to one if the client's audit opinion contains a going concern paragraph in the current year, equal to zero otherwise
Material Weakness Opinion	Indicator variable equal to one if the client's audit opinion indicates the presence of a material weakness in the client's internal controls over financial reporting in the current year, equal to zero otherwise
Client variables	
Geo. Dispersion	Natural log of the number of unique states mentioned in the 10-K filing for a given client-year
Population	Natural log of the population in the client's CBSA as of the 2010 Census
Member of SP500	Indicator variable equal to one if the client is a member of the S&P 500 index
Assets	Natural log of the client's total assets (in millions)
Leverage	Total client liabilities scaled by lagged total client assets
Growth	Percentage change in the client's total assets from the previous fiscal year
Loss	Indicator variable equal to one if the client's net income is less than 0, equal to zero otherwise
Market to Book	Client's market value scaled by its net book value
New Financing	Indicator variable equal to one if the client issued new debt or equity in either the current year or the previous year, equal to zero otherwise
Complex Ind.	Indicator variable equal to one if the client is in one of the following Fama-French 48 industry codes: 1, 7, 11, 18, 26, 27, 28, 29, 30, 31, 32, 34, 35, 40, 44, 45, 46, or 47; equal to zero otherwise
Partner Ratio	Number of partners in the Form AP data that are located in the client's CBSA scaled by the number of public companies in the client's CBSA
Analyst Following	Natural log of the number of analysts following the client in the current fiscal year

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Appendix 2: Listings of top schools according to the 2021 *US News and World Report* rankings

Top 10 accounting programs	**Top 10 MBA programs**
University of Texas–Austin	Stanford University
Brigham Young University–Provo	University of Pennsylvania
University of Illinois–Urbana-Champaign	Northwestern University
Indiana University–Bloomington	University of Chicago
University of Notre Dame	Massachusetts Institute of Technology
University of Michigan–Ann Arbor	Harvard University
University of Pennsylvania	University of California–Berkeley
University of Southern California	Columbia University
New York University	Yale University
Ohio State University–Columbus	New York University
Top 10 undergraduate business schools	**Top 10 universities**
University of Pennsylvania	Princeton University
Massachusetts Institute of Technology	Harvard University
University of California–Berkeley	Columbia University
University of Michigan–Ann Arbor	Massachusetts Institute of Technology
Carnegie Mellon University	Yale University
New York University	Stanford University
University of Texas–Austin	University of Chicago
University of North Carolina–Chapel Hill	University of Pennsylvania
University of Virginia	Northwestern University
Cornell University	Duke University

Appendix 3: Mapping of industry keywords in partner profiles to Fama-French 10 industries

Industry no.	Keywords
1	"Food" "tobacco" "textiles" "toys" "leather" "apparel"
2 and 3[a]	"Manufact" "furniture" "cars" "vehicles" "appliances" "durables"
4	"Oil" "gas" "coal" "energy"
5	"Computer" "software" "electronic" "tech"
6	"Tele"
7	"Wholesale" "retail"
8	"Healthcare" "medical" "medicine" "pharm"
9	"Utilities" "utility"
10	Catchall group for which we identify no specialist partners

[a]We combine industry numbers 2 and 3 because many partners simply refer to their experience with "manufacturing" clients.

Data Availability Statement

Data are available from the public sources cited in the text.

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