

A Bright Side of Labor Market Power?

Evidence from the Audit Industry

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Abstract

This paper examines the influence of labor market power in the audit industry. Recent studies in labor economics find that companies with greater labor market power can recruit and retain more talented employees. Using a novel and comprehensive dataset of online job postings, we construct a measure of local audit offices' labor market power. We first show that audit offices with higher labor market power demand more skills from job candidates, consistent with an increased ability to recruit and retain better auditors. We also find evidence that these audit offices pay lower wages, consistent with them exploiting labor market power to reduce their costs. We then document that client companies audited by offices with greater labor market power have lower absolute values of discretionary accruals and are less likely to restate their earnings and to meet or narrowly beat earnings targets, suggesting that greater auditor labor market power improves audit quality. Audit offices with greater labor market power also appear to exploit their cost and quality advantages to lower fees and increase market share. Collectively, our findings highlight the importance of labor market power in understanding auditor competency.

JEL: J31, J40, J42, M42, M55

Keywords: Labor Market Power, Audit Quality

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1. Introduction

Researchers and regulators are increasingly paying attention to labor market monopsony (Ashenfelter, Farber and Ransom 2010; Manning 2011; CEA 2016; Davies 2018), a phenomenon in which reduced competition in the labor market gives employers increased power to dictate wages.¹ Similar to buyers with strong bargaining power, companies with labor market power tend to have greater bargaining power, as workers in these markets have limited outside options. This results in depressed wages and increased retention (Berger, Herkenhoff, and Mongey 2019). Several papers as well as recent court cases document the existence of labor market power in different industries (Staiger, Spetz, and Phibbs 2010; Ashenfelter, Farber, and Ransom 2010; Falch 2010; Ransom and Sims 2010; Dube, Lester, and Reich 2016; CEA 2016). However, little is known about the influence of labor market power on individual employers' economic outputs.

In this paper, we shed light on this question and examine the effect of labor market power on the service quality of audit firms. The audit industry is knowledge-intensive, with human capital being one of its most important assets (Starbuck 1992; Lennox, Wang, and Wu 2018; Aobdia, Srivastava, and Wang 2018; Aobdia 2018). Because the audit process is characterized by subjective judgments, the ability of individual auditors to deliver high-quality services plays an important role in the economic outcomes of the process (Bonner 1990; Bonner and Lewis 1990; Abdolmohammadi and Shanteau 1992; Libby and Tan 1994; McKnight and Wright 2011). In recent years, the audit industry has experienced a substantial increase in competition for talent, and recruiting and retaining talented professionals has become a top concern of many audit firms (Drew 2015). In part explaining this competition for talent, inflation-adjusted wages in the audit industry have stagnated over the past 30 years and

¹ A monopsony consists of a market with a single buyer. When there are a limited number of buyer, the market is defined as an oligopsony.

underperformed those in alternative professions, such as tax accounting, consulting, and investment banking, rendering the profession somewhat unattractive (Russell et al. 2000; Carcello 2008; Hoopes et al. 2018). This has drawn the attention of regulators, such as the Public Company Accounting Oversight Board (PCAOB) and the Financial Reporting Council (FRC), which stress that failure to recruit and retain skilled auditors could threaten the delivery of high quality services (e.g., PCAOB 2015; Harris 2015).²

The (short-run) effect of labor market power on audit quality is ex ante ambiguous. On the one hand, audit firms with greater labor market power can recruit on average better individual auditors, i.e., auditors who are more talented and skilled, because these auditors will have limited outside options and lower bargaining power. Consistent with this argument, Hershbein, Macaluso, and Yeh (2018) find that a more concentrated labor market is associated with greater demand for skills. To the extent that offices with greater labor market power can attract and retain talented auditors in their local labor markets, we should expect a positive relation between labor market power and audit quality. On the other hand, employers with monopsony power pay lower wages (Azar, Marinescu, and Steinbaum 2017; Benmelech, Bergman, and Kim 2018). Efficiency wage theories argue that paying higher wages makes it costly for employees to switch jobs, thereby giving them incentives to exert effort (Akerlof 1984; Shapiro and Stiglitz 1984; Yellen 1984; Akerlof and Yellen 1986; Levine 1993). Consistent with this argument, Hoopes et al. (2018) find that higher salaries paid to audit professionals are associated with better audit quality. This suggests that audit offices with greater labor market power likely provide services of lower quality.

² For example, former PCAOB Board member Steven Harris mentioned in a 2015 speech at the PCAOB/AAA Annual meeting that “[i]n the current market environment, the top students clearly have many options within an audit firm, including choosing to work for practices other than audit. The Board has heard, for example, that some students are questioning their decision to study accounting because of the higher salaries offered by the advisory and consulting practices of the firms.”

We use data from Burning Glass Technologies (hereafter BGT) that cover the near-universe of audit firms' online job postings from 2010 to 2017 to measure the market power in local labor markets for each audit office. During this period, BGT recorded a total of 3,670,517,432 postings, collected from about 40,000 posting sites and company websites. BGT's broad coverage makes it a more comprehensive source of data than any single job posting site (Hershbein and Kahn 2018). Similar to Azar et al. (2018), we define labor market power as an employer's relative-to-rival market share in local job postings.

Our auditor labor market power measure is constructed based on the 143,506 audit-related job positions posted by the top 50 audit firms in the United States from 2010 through 2017, of which the vast majority is for junior audit positions. The inter-region correlation of this measure is a low 22.4%, indicating substantial within-firm variation. To avoid the likelihood that differences between Big N and non-Big N auditors affect our inferences, we restrict the sample to Big 4 auditors.

We first examine the association between audit offices' labor market power and their skill requirements in online job postings. We focus on soft skills, as these are more difficult to develop through in-house training but are crucial, as audits often rely on interpersonal interactions among auditors or with the client.³ Following Deming and Kahn (2018) and Kuhn, Luck and Mansour (2018), we define soft skills as social skills, character-oriented skills, and people-management skills. We find that audit offices' labor market power is positively related to the fraction of job postings that require soft skills and the average ratio of the number of soft skills required in a job posting, relative to the number of hard skills.⁴ These findings validate our premise that audit offices with greater labor market power can recruit better candidates.

³ In particular, the literature documents that an auditor's cognitive skills, personality, and interpersonal skills, such as negotiation skills, significantly influence the outcome of the audit. See Nelson and Tan (2005) and Knechel, Krishnan, Pevzner, Shefchik, and Velury (2013) for reviews of the literature.

⁴ Another reason we focus on soft skills is that the BGT data hard skills are not customized to hard skills relevant for auditing. Nevertheless, in untabulated analyses we find no association between labor market power and education requirements and the number of hard skills available in the database, consistent with minimum

We next study the relation between audit offices' labor market power and wages offered on audit positions. The labor economics literature documents that occupations with higher labor market concentration have lower posted or actual wages, suggesting that monopsonist employers exploit their power to suppress wages (Azar, Marinescu, and Steinbaum 2017; Benmelech, Bergman, and Kim 2018). Using wage data from the labor condition applications filed with the U.S. Department of Labor, we find a negative association between labor market power and wages offered to audit personnel, consistent with audit offices with greater power in local labor markets paying lower wages. Further, the year-on-year average wage growth is lower in offices with higher labor market power. Overall, these results, in light of the oligopsonistic nature of the audit industry, provide a potential explanation for why wages have stagnated in the audit industry, rendering the industry less attractive on the long run.

We next turn our attention to audit quality effects. We find evidence that the labor market power of local audit offices improves audit quality. First, we find a negative association between labor market power and the absolute value of the client's discretionary accruals, after controlling for economic determinants of clients' financial reporting quality and auditor characteristics that have been shown in prior studies to affect audit quality. These findings hold after controlling for time-invariant client company fixed effects, auditor fixed effects, and year fixed effects, suggesting that these results do not capture unobserved client, auditor, and regional characteristics. We also find that client companies audited by offices with greater labor market power are less likely to restate their earnings and to meet or narrowly beat earnings targets. These findings are consistent with audit offices with greater labor market power providing higher quality audits and being able to constrain erroneous or fraudulent reporting

requirements in the auditing profession, such as the 150-hour education requirement, being standard (e.g., Allen and Woodland 2010).

by clients. In conjunction with the results on wages, these findings imply that audit offices with greater labor market power can provide better services at a lower cost, at least on the short run.

One concern about the analyses so far is that our labor market power measure might be correlated with other unobserved auditor characteristics that affect audit quality. For example, a higher number of job postings might be related to higher turnover in a particular audit office. To mitigate this omitted variable concern, we use an instrumental variable approach. The instrument is based on the idea that, when a client is acquired during a merger, the audit office that had provided audit services to it quasi-exogenously loses this client (e.g., Firth 1999; Dhaliwal, Lamoreaux, Litov, and Neyland 2016). Client losses eventually lead to lower demand for new hires and act as a shock to an audit office's labor market power. Using a two-stage regression, we first confirm that an office's labor market power is reduced by 16%, relative to the sample average, following a client acquisition. Importantly, we continue to find a positive association between labor market power and audit quality when using the predicted labor market power value from the first-stage regression. This finding supports the argument that audit offices' labor market power has a causal impact on audit quality.

We conduct several cross-sectional analyses to confirm the mechanisms that explain our results. First, we partition our measure of labor market power between junior positions (associates and seniors) and managerial positions (managers, senior managers, directors, and partners). Because audit firms typically hire at the junior level and promote from within and our measure of labor market power is based on external labor markets (i.e., postings for managerial positions are scarcer, and more plentiful for junior auditors), we expect to find a stronger relation between labor market power and audit quality for junior auditors. We find results consistent with this idea.

Second, the effect of local labor market power on audit quality relies on the idea that inter-city and inter-state mobility of accounting graduates is sufficiently low in the United

States to enable audit firms to exploit their local labor market power. The literature on mobility in the United States finds reasonably low and declining mobility rates, even for college graduates (Ishitani 2011; Molloy et al. 2011). Mobility is also reduced when distance increases (e.g., Kodrzycki 2001; Gottlieb and Joseph 2006). We consider the potential for auditor mobility in two cross-sectional analyses, as we expect that the higher the potential for mobility, the lower the effect of labor market power on audit quality. We find results consistent with this idea. We find stronger effects of labor market power on audit quality when the physical distance as well as the difference in audit job postings between a local audit market and its closest audit market increases.

We conduct several robustness tests. First, one concern is that the labor market power of an audit office is likely to be correlated with its local market share or size.⁵ We show that, although our measure of labor market power is positively related to an audit fee-based measure of audit market concentration, the relation between labor market power and audit quality remains largely unchanged after controlling for audit market concentration in the regression.⁶ In addition, we find that the effect of labor market power on audit quality is still present among audit offices with lower market share and does not seem to be affected by office market share. We continue to find similar (i.e., robust) results when replacing office market share with office size, which positively influences audit quality and fees (Francis and Yu 2009; Choi, Kim, Kim, and Zhang 2010). Collectively, these findings suggest that labor market power is a distinct construct from both office market share and size. Second, we continue to find consistent results when using alternative measures of labor market power that use the job postings of the largest four auditors or when extending the sample from Big 4 to the largest eight, 16, and 50 auditors.

⁵ Individual employers' labor demand is partially determined by their product market positions. To the extent that audit market concentration improves audit quality by reducing the importance of particular clients and their outside choices, our results might merely reflect a relation between audit market concentration and audit quality (DeFond and Zhang 2014; Ahn 2018).

⁶ The correlation between our labor market power measure and audit market share is a reasonably low 29.1%.

Finally, we examine whether audit offices' labor market power affects audit fees and office market share. The audit literature provides evidence that auditors often pass on to their clients, in the form of lower audit fees, their cost efficiencies (Pearson and Trompeter 1994; DeFond, Francis, and Wong 2000; Fung, Gul, and Krishnan 2012). To the extent that audit offices with higher labor market power can pay less, they may share the cost savings with clients by charging lower fees, particularly if they are interested in increasing their market share. Consistent with this prediction, we find a negative association between labor market power and audit fees. We also find a positive association between an office's labor market power and future change in market share, consistent with audit offices providing higher audit quality at a lower cost being able to benefit in the client markets from their labor market power.

This paper makes three contributions to the literature. First, it adds to the literature that examines the influence of auditor competencies on audit quality. Studies have focused on auditors' industry specialization and economies of scale, using output-based market share regarding sizes, fees, or the number of clients, to measure auditor competency and show that industry expertise improves audit quality (e.g., Balsam, Krishnan and Yang 2003; Dunn and Mayhew 2004; Neal and Riley 2004; Knechel, Naiker and Pacheco 2007; Behn, Choi, and Kang 2008; Lim and Tan 2008; Payne 2008; Chin and Chi 2009; Reichelt and Wang 2010; Dekeyser, Gaeremynck and Willekens 2018). As suggested by DeFond and Zhang (2014), auditor competency encompasses many different dimensions. An audit firm's ability to attract and retain talent can represent a core competency that helps it provide high-quality audit services. Thus our finding that audit offices' labor market power, an input-based market share, is associated with better audits complements this line of research and answers the call by DeFond and Zhang (2014), who urge more research on the role of auditor competency in driving audit quality.

Second, our paper contributes to the literature that studies the role of auditor offices in auditing. This literature emphasizes that the local offices of Big N auditors are an important decision-making unit and highlights the importance of office characteristics in understanding audit quality and pricing (Wallman 1996; Ferguson, Francis, and Stokes 2003; Francis, Reichelt, and Wang 2005). Our study introduces a novel office characteristic that influences audit fees and quality. Our measure is distinct from prior measures, including Big N office size. The literature on Big N office size finds positive associations between office size and audit quality as well as with audit fees, implying that auditors pass to their clients the costs of greater in-house experiences (Francis and Yu 2009; Choi, Kim, Kim, and Zang 2010). In contrast, our measure of labor market power is positively associated with audit quality but negatively associated with audit fees. They suggest that, at least on the short run, audit offices that have higher labor market power can achieve higher quality audits at lower cost, eventually leading to positive market share effects.

More generally, our study contributes to a growing literature in labor economics that examines employers' power in the labor market. This literature documents that some employers exhibit substantial power in the labor market (Staiger, Spetz and Phibbs 2010; Falch 2010; Ransom and Sims 2010; Matsudaira 2013) and that firms with labor market power pay lower wages (Azar et al. 2018; Benmelech, Bergman, and Kim 2018) and demand higher skills (Hershbein, Macaluso, and Yeh 2018). We find evidence consistent with these ideas. We extend the literature by focusing on the influence of labor market power on individual employers' outputs. We find evidence that labor market power improves service quality and helps firms charge their clients less, thereby highlighting, at least on the short-run, the benefits of concentrated labor markets from employer and client perspectives.

Our results also support regulatory concerns about Big 4 audit firms' market concentration, albeit for different reasons. While regulators have consistently argued against

market concentration, fearing that it distorts the supply of audit services, the academic literature has found mixed evidence about this idea (Pearson and Trumpeter 1994; Dwyer 2003; Cox 2005; Nocera 2005; GAO 2006; Numan and Willekens 2012; Gerakos and Syverson 2015; Eshleman and Lawson 2017). Our study takes a different approach and identifies a negative effect of Big 4 concentration, in the form of oligopsonistic power, which allows the Big 4 firms to limit auditor wages. While the net effects of labor market power of an audit office appear to be beneficial on the short-run from an audit quality standpoint, our results also explain why auditor salaries have stagnated, underperforming alternative career options, such as consulting and tax, and rendering auditing a less attractive industry overall (e.g., Carcello 2008; Hoopes et al. 2018). Thus, labor market power has the potential to backfire on the long-run, and can explain recent concerns about talent shortages in the profession.

The rest of the paper is organized as follows. Section 2 discusses the related literature and hypotheses. Section 3 describes the data, sample, key variables, and research design. Section 4 presents the results. Section 5 concludes.

2. Literature and Hypotheses

2.1 Labor Market Power

The labor economics literature has increasingly paid attention to the concept of labor market monopsony, whereby reduced competition gives employers the power to set wages (Boal and Random 1997; Ashenfelter, Farber, and Ransom 2010; Manning 2011; CEA 2016). In general, this line of research documents that high monopsony power causes large social welfare losses through the misallocation of labor and the redistribution of income away from workers to residual claimants. For example, Falch (2010)'s estimate of the elasticity of the supply of schoolteachers in Norway implies that a government selecting an optimal hiring strategy would result in wage rates that are marked down about 65% from a teacher's marginal value.

Recently, there has been a growing interest in labor market concentration, owing to the availability of novel labor demand data. Azar, Marinescu, and Steinbaum (2017) define a concentrated labor market as one in which a few firms dominate hiring. Azar et al. (2017) use data from an employment website to calculate the labor market Herfindahl-Hirschman Index (HHI) for geographic-occupational labor markets in the United States. Based on the U.S. Department of Justice and the Federal Trade Commission horizontal merger guidelines, they conclude that the average market is highly concentrated. They also show that higher labor market concentration increases labor market power. Benmelech, Bergman, and Kim (2018) analyze the effect of local-level labor market concentration on wages and find that, consistent with labor market monopsony power, there is a negative relation between local-level employer concentration and wages. Hershbein, Macaluso, and Yeh (2018) use online vacancy data and find that labor market concentration is associated with a greater demand for skills. In particular, a 1% change in the local labor-market HHI index is associated with an additional 10% of ads mentioning social skills and 6% of ads mentioning cognitive or organizational skills.

While these studies focus primarily on the measurement of labor market concentration and its role in explaining labor market features with respect to wages and job requirements, our paper is particularly interested in examining one of the consequences of labor market power: the quality of the products or services provided by the hiring firms.

2.2 Human Capital in the Audit Industry

As noted by DeFond and Zhang (2014), the literature on human capital in the audit industry has remained limited until recently. A nascent literature focuses on specific factors that affect the supply and demand for human capital in the industry. For example, Aobdia et al. (2018) examine the employment of skilled immigrants in the audit industry. They find, in the context of Big N audit firms, that foreign-born graduates contribute substantially to the audit industry's human capital. Aobdia and Srivastava (2018) further find no systematic evidence

that the hiring of U.S.-educated skilled immigrants depresses wages in the audit industry. Cascino, Tamayo, and Vetter (2018) find that, after the adoption of CPA mobility provisions, the wages of accounting professionals decrease, while employment levels are unaffected. Hoopes et al. (2018) examine the association between audit personnel salaries and office-level audit quality and find that offices that pay less have a higher percentage of clients who experience restatements and lower audit quality. They find similar results when audit employees are paid less relative to other lines of service in accounting firms. However, Hoopes et al. (2018) do not consider auditor skills, and do not estimate the net effect on audit quality of using higher skilled auditors that are paid less, which is the focus of our study. Bloomfield et al. (2017) find increased cross-border labor migration of accounting professionals following regulatory harmonization of accounting and auditing standards within the European Union.

2.3 Hypothesis

The consequences of labor market power with respect to individual employers' output in the audit industry are ex ante ambiguous. On the one hand, in the product markets, buyers with strong bargaining power can switch sellers more easily and negotiate for lower prices and receive better products from sellers. The logic is that sellers have fewer outside options. Analogously, in the labor market, when employers, as buyers, have greater market power, they are likely to demand better employees on average, because it is more difficult for employees to find other work. Hershbein, Macaluso, and Yeh (2018) find that a more concentrated labor market is associated with a greater demand for skills, including cognitive, social, and organizational skills. Therefore we expect that audit offices with greater labor market power can recruit and retain more talented auditors. Moreover, as monopsony power enables employers to reduce wages (Azar, Marinescu, and Steinbaum 2017; Benmelech, Bergman, and Kim 2018), an audit office with greater labor market power could recruit workers who possess

higher marginal productivity at any given wage level. As a consequence, we expect audit offices with greater labor market power to produce better audits.

On the other hand, opposing arguments can be made. Efficiency wage theories suggest that providing an above-market-clearing wage makes it costly for employees to switch jobs and thus gives employees increased incentives to exert costly effort (Akerlof 1984; Yellen 1984; Akerlof and Yellen 1986; Shapiro and Stiglitz 1984; Levine 1993). Therefore higher wages should improve auditor productivity by motivating greater effort from personnel, by attracting better personnel, or both.⁷ Hoopes et al. (2018) find that audit offices that pay lower salaries have a higher percentage of clients that issue restatements and lower levels of audit quality. Accordingly, we may observe a negative association between labor market power and audit quality due to the lower wages arising from greater labor market power.

Overall, whether audit offices with greater labor market power exhibit higher audit quality remains an empirical question. We state our hypothesis in its alternative form as follows.

H1: Audit offices with greater labor market power exhibit higher audit quality.

Other arguments might also explain why we would not find a relation between labor market power and audit quality. In particular, whether a company can exploit its local labor market power depends on the local mobility of its prospective workforce. If the costs to mobility are low, then companies would be unable to exploit their labor market power. Despite the popular belief that internal migration rates in the United States are higher than in other countries, the actual mobility rates are moderate and have been declining by distance and over time (Kodrzycki 2001; Gottlieb and Joseph 2006; Ishitani 2011; Molloy et al. 2011). Illustratively, Ishitani (2011) finds that only 23.3% of college graduates moved to another state

⁷ Abowd et al. (1999) find that enterprises that pay higher wages are more productive and more profitable. However, Gneezy and List (2006) find that the relationship between higher wages and higher effort disappears over time.

after graduating from college. We further exploit the potential for auditor mobility in additional cross-sectional analyses, to confirm the mechanism underlying our results.

3. Data, Sample, Key Measures, and Research Design

3.1 Job Posting Data

We use job posting data provided by Burning Glass Technologies Inc. Over the past decade, online posting has become the major channel through which firms circulate job openings, with a boom in job posting sites, such as Indeed, Glassdoor, and Career Builder. Starting from 2010 to 2017, BGT has tracked and collected job postings from about 40,000 job posting sites as well as from U.S. companies' websites. Over this period, BGT recorded a total of 3,670,517,432 postings, de-duplicated for identical job postings that were posted on multiple sites.⁸ Given the breadth of its coverage, the BGT data are more comprehensive than data from any single job posting site (Hershbein and Kahn 2018).

BGT extracts an extensive list of data items from job postings, which includes employer name, posting date, title, location, occupation, skill or certification required, minimum education or experience, and salary, when available. BGT standardizes and systematically classifies these items and then matches employers to Compustat firms via a multi-step procedure. The matched job posting data cover 6,445 Compustat firms with 15,603,499 job postings from 2010 to 2017.

The BGT job posting data have been used in labor economics (e.g., Azar et al. 2018; Deming and Kahn 2018; Hershbein and Kahn 2018). In contrast to these studies, which focus on the aggregated labor market, we study a specific labor market segment—the auditor labor market. The audit setting is particularly suitable for two reasons: (1) human capital constitutes an audit firm's most important asset, and (2) personnel hired by audit firms tends to be more

⁸ BGT identified as duplicates the subsequent postings from the same employer and with the same content within the three months of the first appearance of a job position.

homogenous than those hired by industrial and financial firms, which have a variety of functions that require different skills. Moreover, while studies in labor economics focus on measuring labor characteristics and documenting labor market patterns, we examine the product market consequences of an important labor characteristic, specifically the impact of employer-level labor market power on the quality and efficiency of the service provided by the employer.

3.2 Measure of Auditor Labor Market Power

We rely on the top 50 audit firms from 2010 to 2017 to construct a measure of auditor labor market power.^{9,10} We manually match the top 50 audit firms to BGT employers by name and obtain exact matches for 47 of the 50 audit firms.¹¹ We exclude BGT employers that are related to these audit firms but have names pointing towards non-auditing services, such as tax and advisory (e.g., “PWC ADVISORY SERVICES”).¹² We then retrieve all the audit job postings of employers that are matched to the top 50 audit firms from 2010 through 2017. We keep only audit-related positions, which are defined as job postings with one of the following keywords in the job title: “audit,” “auditing,” “assurance,” “accounting,” “account,” “accountant,” and “accountancy” or identified with Standard Occupational Classification (SOC) code “13-2011” (i.e., the occupation of “accountants and auditors”).¹³ We end up with 44 audit firms. In total, the top 44 audit firms posted 143,506 audit positions during the sample period, among which Deloitte, Ernst & Young, KPMG, and PWC have 10,146, 18,413, 21,075, and 56,193 postings, respectively, while each of the non-Big 4 have on average 942 audit

⁹ We count the number of client-years that are audited by each audit firm during our sample period and identify the top 50 audit firms by the ranking of this client-year count.

¹⁰ There are more audit firms beyond the top 50. However, the smaller ones are even less likely to compete with the bigger auditors in the same labor market.

¹¹ We use the full name and commonly used abbreviations of names in the matching process.

¹² We search through the company histories of the top 50 audit firms. The Big 4 acquired no other audit businesses in the sample period. There were several acquisitions of audit business involving non-Big 4 firms. When there is an audit-related acquisition, we identify the date of acquisition to attribute a job posting to the correct parent firm.

¹³ When we incorporate “tax” as a disqualifying word into the filtering, our main test result on the effect of auditor labor market power on audit quality remains similar.

postings.¹⁴ The key information in a job posting is location, in particular, the state and county of the job. Among the 105,827 job postings of Big 4 auditors that we use for our main sample, only 0.2% of them have missing county-level location information. We then match the state and county associated with every job posting to a Core Business Statistical Area (CBSA).

We build the measure of auditor labor market power at the auditor office-year level. The combination of auditor and city identifies a unique audit office of a particular audit firm (e.g., Deloitte’s Dallas office or PwC’s Seattle office). For a given audit firm, we keep only those audit postings in cities where the firm has offices. We first start with the BGT data by counting the fraction of each auditor’s postings in a given CBSA and year, i.e., the labor market power of each auditor in a given CBSA and year. Then, for each auditor-city in *AuditAnalytics*, we match it with the CBSA to which it belongs. We then proxy for the city-level labor market power of each audit office by using the labor market power of the CBSA or CBSAs to which it belongs (If a city’s borders encompass two CBSAs, then the average labor market power of the two CBSAs are calculated.) The formula can be described as follows.¹⁵

$$LMP_{city} = \frac{1}{n} \sum_1^n LMP_{CBSA};$$

$$LMP_{j(CBSA)} = \frac{Postings_j}{\sum_1^n Postings_k}.$$

This measure captures the variation in labor market power across different offices within a given audit firm. For example, Deloitte’s Dallas (Seattle) office has a labor market power of 0.034 (0.075) for 2013. This variation allows us to control for auditor fixed effects in the regressions. Moreover, the labor market power of an audit firm in a locality is determined by the interplay between the audit firm and the other audit firms with a presence in the same locality, rather than by the audit firm itself. Thus an audit firm that has the strongest labor

¹⁴ In a robustness test, we find that the results remain similar if we only use Big 4 auditors to construct the labor market power measure.

¹⁵ An example of how we compute labor market power: PwC’s Dallas office has 257 job postings in 2016, and the total number of job postings in the same CBSA (Dallas-Fort Worth-Arlington, TX) is 683. So the labor market power of PwC’s Dallas office in 2016 is 0.376 (=257/683).

market power in a city may not necessarily have high labor market power in other cities. We also find that auditor labor market power exhibits a high autocorrelation of about 80%, consistent with labor market power representing a reasonably stable attribute of an audit office (untabulated). Nevertheless, our measure of auditor labor market power still exhibits reasonable time-series variation. For instance, the labor market power of Deloitte’s Milwaukee office is 0.129 for 2016 but 0.072 for 2017.

Our labor market power measure is distinct from a ranking of audit offices by fees. Illustratively, Appendix B shows the difference in ranking between labor market power and audit fees for each of the Big 4 offices in our sample for the Atlanta and Washington, D.C., areas in 2016 and 2014, respectively.¹⁶ In the first case, KPMG’s office in Atlanta ranked first in terms of audit fees but third in terms of labor market power. In the second case, Ernst and Young ranked first in labor market power but fourth in terms of audit fees. These examples confirm that our measure of labor market power is distinct from an office size measure.

3.3 Measures of Audit Quality

We use three measures to proxy for audit quality, following prior studies (e.g., DeFond and Zhang 2014, Aobdia 2019). Aobdia (2019) shows that these three measures predict audit practitioner assessments of audit quality measured using PCAOB inspection and audit firms’ internal inspection deficiencies. First, we use the discretionary accruals from the cross-sectional modified Jones model (e.g., Reichelt and Wang 2010; Chi et al. 2017). In particular, we estimate the following regression model.

$$\frac{TA_{it}}{Assets_{i,t-1}} = \delta_0 + \delta_1 \frac{1}{Assets_{i,t-1}} + \delta_2 \frac{\Delta Rev_{it} - \Delta AR_{it}}{Assets_{i,t-1}} + \delta_3 \frac{PPE_{it}}{Assets_{i,t-1}} + \delta_4 \frac{IBC_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{i,t}, \quad (1)$$

¹⁶ One might wonder whether our results are driven by areas that have a limited number of Big 4 audit offices, such as areas with only one office, where labor market power of this particular office would be mechanically set to one. In an untabulated test, we find that the main test result is the strongest in cities where all Big 4 audit firms have their offices, inconsistent with this idea.

where

$$TA \text{ (Total accruals)}_{i,t} = IBC_{i,t} - CFO_{i,t};$$

$IBC_{i,t}$ = Income before extraordinary items (obtained from the cash flow statement)

$CFO_{i,t}$ = $OANCF_{i,t}$ (net cash flow from operating activities) - $XIDOC_{i,t}$ (Extraordinary Items and Discontinued Operations);

$Assets_{i,t-1}$ = total assets in the preceding year;

$\Delta Rev_{i,t}$ = change in revenues from the preceding year;

$\Delta AR_{i,t}$ = change in accounts receivable from the preceding year;

$PPE_{i,t}$ = gross value of property, plant, and equipment;

We estimate this regression model each year using all client firm-year observations with the same two-digit Standard Industrial Classification (SIC) code, with the restriction that we have at least 10 available observations to run the regression. We use the absolute value of the residual $\varepsilon_{i,t}$ as our measure of the absolute value of discretionary accruals ($Abs(DA)$).

We also use two alternative measures of audit quality, namely restatements (*Restatement*) and meeting or narrowly beating the zero-earnings benchmark (*Meet-or-Beat*) (e.g., Burgstahler and Dichev 1997; Degeorge, Patel, and Zeckhauser 1999; Skinner and Sloan 2002). *Restatement* is a dummy variable that equals one if the fiscal year t is restated, as per the Audit Analytics database and zero otherwise.¹⁷ *Meet-or-Beat* is a dummy variable that equals one if a firm just meets or beats the zero earnings benchmark by or within 5 cents (on an earnings per share basis) and zero otherwise. We expect that audit firms with higher audit quality have clients that are less likely to restate earnings and to meet or narrowly beat earnings benchmarks (e.g., DeFond and Zhang 2014; Aobdia 2019).

¹⁷ Restatement is coded as one if any part of the fiscal year falls into the range between the start and end dates (as per *Audit Analytics*) of a nonreliance restatement. If we restrict the definition of a restatement to a fiscal-year-end restatements (by requiring the fiscal year-end to fall into the start and end dates from Audit Analytics), our results remain similar, with slightly weaker statistical significance.

3.4 Sample Selection

Our sample focuses on the Big 4 audit firms. Given their dominance in the audit market, the Big 4 are the main players in the labor market for public accountants. We use the following procedures to select the main sample. First, we begin with 54,247 client-year observations in Audit Analytics from 2010 through 2017. We then match every client company in Audit Analytics with Compustat. We require all measures of audit quality and control variables to be available. We are then left with 15,643 client-year observations. Second, we keep the 13,984 client-years audited by the Big 4. These client-years are audited by 268 local offices, of which PricewaterhouseCoopers has 65 offices, Ernst & Young has 70, Deloitte & Touche has 60, and KPMG has 73. Next, for these 268 audit offices, we match the city where the office is located, provided in Audit Analytics, with the CBSA of job postings and only keep audit offices where Big 4 firms have job postings.¹⁸ We end up with 262 audit offices in 105 cities during the 2010–2017 period, corresponding to 12,668 client-year observations.

4. Results

4.1 Descriptive Statistics

We report descriptive statistics in Table 1. Panel A reports descriptive measures of labor market power at the auditor level. The mean (median) auditor labor market power at the auditor-city-year level is 0.225 (0.169), which confirms that the Big 4 firms generate the vast majority of job postings in auditing. There is substantial variation of the measure, across audit firms and offices, evidenced by a standard deviation of 0.165 for *Auditor LMP*. The measure differs notably across auditors, with PwC having a larger labor market power mean than other audit firms. In further analyses, we investigate the reasons for this. We find that PwC has an abnormally high number of job postings with Standard Occupation Code 13-2011

¹⁸ Using county as an alternative local labor market unit does not alter the results.

(Accountants and Auditors), compared to the three other Big 4 firms. We replicate the analyses in the paper excluding SOC code 13-2011 and find robust results (untabulated).

Panel B reports overall descriptive statistics. The audit offices in the sample on average have market share of 29.1% and 32 clients. The mean absolute value of discretionary accruals is 0.056, which is consistent with the literature (e.g., Reichelt and Wang 2010; Chi et al. 2017). An average client-year in the sample has total assets of \$8 billion, a book-to-market ratio of 0.481, a leverage of 19%, a return on assets of 1.6%, capital expenditure 4.9% of total assets, and return volatility of 0.1.

4.2 Skill Requirements

In this section, we validate that audit offices with higher local labor market power have higher requirements in their job postings. To the extent that audit offices with greater labor market power can attract more talented employees, we expect them to have higher job requirements. We test this prediction by estimating the following regression at the audit office-year level.

$$\begin{aligned}
 Requirement_{j,t} = & \beta_0 + \beta_1 Auditor\ LMP_{j,t} + \beta_2 Market\ Share_{j,t} + \beta_3 Average\ City\ Leader_{j,t} \\
 & + \beta_4 Average\ National\ Leader_{j,t} + \beta_5 Office\ Importance_{j,t} \\
 & + \beta_6 Unemployment\ Rate_{j,t} + \beta_7 Real\ GDP_{j,t} + Auditor\ FE + Year\ FE + \varepsilon_{i,t}, \quad (2)
 \end{aligned}$$

where the suffixes j and t correspond to audit offices and years, respectively. *Requirement* proxies for job requirements. We mainly focus on soft skills for three reasons. First, soft skills are valuable, but they are unlikely to develop through future in-house training and experience. Consistent with the idea that soft skills are valuable, Deming and Kahn (2018) find positive associations between the demand for such skills and measures of pay and performance. Second, the audit literature highlights the importance of these skills, such as negotiation and interpersonal skills, as they significantly influence the outcome of the audit, due to extensive auditor teamwork and interactions with clients (e.g., Nelson and Tan 2005; Knechel et al. 2013). Third, the BGT data are not customized for audit hard skills, such as auditor industry

specialization, and as a result appropriate proxies for hard skills, except for education, are not readily available.¹⁹ We use the following three variables to proxy for audit offices' requirements for soft skills: (1) *%Soft*, the fraction of job postings that require soft skills by an audit office in a given CBSA and year; (2) *Soft/Hard*, the ratio of the average number of soft skills in job postings, relative to the average number of hard skills in job postings by an audit office in a given CBSA and year; and (3) *%Social*, the fraction of job postings that require social skills (a subset of soft skills in general). We use a skill taxonomy similar to those of Deming and Kahn (2018) and Kuhn, Luck and Mansour (2018) and define soft skills as social skills (with keywords "communication," "collaboration," or "teamwork," etc.), character-oriented skills (with keywords "detail-oriented," "organized," or "multi-tasking," etc.), and people management skills (with keywords "people management," "leadership," or "organizational skills," etc.). For positions with higher soft skill requirements, the employer has to rely on recruiting candidates who come equipped with such skills.

The variable of interest in this model is *Auditor LMP*, which captures the labor market power of audit office j in year t . We expect audit offices with higher labor market power to impose higher requirements on soft skills. To mitigate concerns about confounding factors at the audit-firm or macroeconomic level, we include in the model audit firm fixed effects and year fixed effects.²⁰ We also control for several audit office characteristics, such as an audit office's local market share in terms of audit fees, its average dominance in particular industries, and its importance within the entire audit firm in terms of job postings (*Market Share*, *Average City Leader*, and *Office Importance*, respectively). We also control for the auditor average dominance in particular industries (*Average National Leader*), and the macroeconomic

¹⁹ In untabulated analyses, we also focus on hard skills, such as education requirement and the number of hard skills, and find no association with labor market power. This result is consistent with minimum hard-skill requirements in the auditing profession, such as the 150-hour education requirement, being standard (e.g., Allen and Woodland 2010).

²⁰ The results remain robust if we include auditor-year fixed effects instead of separate auditor fixed effects and year effects.

conditions of the region in which the audit office is located, specifically the unemployment rate and real GDP (*Unemployment Rate* and *Real GDP*). See Appendix A for variable definitions.

Table 2 reports the estimation results. We find positive associations between *Auditor LMP* and *%Soft*, *Soft/Hard*, and *%Social*, suggesting that audit offices with higher labor market power have higher demand for soft skills. In terms of economic magnitude, a one-standard-deviation increase in *Auditor LMP* is associated with a 2.3% increase in the fraction of postings that require soft skills.²¹ Our results are consistent with the finding of Hershbein, Macaluso, and Yeh (2018) that labor market concentration raises the job requirements for skills.

In terms of control variables, we generally find no associations between *Market Share* and our dependent variables. This confirms that the labor market power variable, *Auditor LMP*, is a distinct construct from auditor market share based on audit fees.

4.3 Labor Market Power and Wages

Studies in labor economics find that occupations with higher labor market concentration receive lower wages (Azar, Marinescu, and Steinbaum 2017; Benmelech, Bergman, and Kim 2018). In this section, we examine the relation between audit offices' local labor market power and wages offered on their audit positions by estimating the following regression.

$$\begin{aligned}
 \ln(\text{Wage})_{j,k,t} = & \beta_0 + \beta_1 \text{Auditor_LMP}_{j,t} + \beta_2 \text{Senior_Associate}_{j,k,t} \\
 & + \beta_3 \text{Manager}_{j,k,t} + \beta_4 \text{Senior Manager}_{j,k,t} + \beta_5 \text{Market Share}_{j,t} \\
 & + \beta_6 \text{Average City Leader}_{j,t} + \beta_7 \text{Average National Leader}_{j,t} \\
 & + \beta_8 \text{Office Importance}_{j,t} + \beta_9 \text{Unemployment Rate}_{j,t} + \beta_{10} \text{Real GDP}_{j,t} + \text{Auditor FE} \\
 & + \text{Year FE} + \varepsilon_{i,t}, \quad (3)
 \end{aligned}$$

where the suffixes j , k , and t correspond to audit offices, job positions, and years, respectively.

$\ln(\text{Wage})$ is the natural logarithm of the starting wage offered on a job position. We expect

²¹ The 2.3% number is computed as 0.138 [the regression coefficient on *Auditor LMP* in Column (1)] \times 0.165 (the standard deviation of *Auditor LMP*, from Table 1).

that audit offices with higher labor market power offer lower wages on their audit positions. We obtain the wage data from the U.S. Department of Labor (DOL). When any organization in the United States needs to hire an immigrant on an H-1B visa, it must file a labor condition application (LCA) with the DOL. The LCA indicates the employer name, the job position and role, the job's location, and the wage offered. The wages reported in LCAs are representative of the employers' typical U.S. hires because companies cannot pay workers holding H-1B visas less than they pay other employees. Audit firms often hire skilled immigrants on H-1B visas and thus file a significant number of LCAs (Aobdia and Srivastava 2018). We retrieve the LCAs filed by Big 4 audit firms on job positions in the occupation of accountants and auditors (SOC=13-2011). To exclusively focus on wages offered in audit positions, we filter out LCAs with employer names that contain words such as "tax," "advisory," or "transaction" or with job titles that contain words such as "tax," "advisory," or "consultant." We then match the location of a job specified in the LCA to audit offices. We keep jobs in cities where the audit offices are located so that our auditor labor market power measure and other office-level control variables are available.

Similar to Model (2), we include in the regression audit firm and office characteristics as well as macroeconomic conditions of the region in which an audit office is located, and control for audit firm fixed effects and year fixed effects. To control for the effect of seniority of a job position on wage, we include in the regression three indicator variables: (1) *Senior Associate*, an indicator variable that equals one if the position is at the senior associate level and zero otherwise; (2) *Manager*, an indicator variable that equals one if the position is at the manager level and zero otherwise; and (3) *Senior Manager*, an indicator variable that equals one if the position is at the senior manager level and zero otherwise. Alternatively, we control for CBSA times position fixed effect in the regression to account for wage variation across job positions at different levels of seniority in different regions.

We report the estimation results in Table 3. In both columns, we find a significantly negative coefficient on *Auditor LMP*, suggesting that auditors with higher labor market power tend to pay lower wages.²² In terms of economic magnitude, a one standard deviation increase in *Auditor LMP* is associated with a wage reduction of 4.3%, which, at the median wage of \$57,000 in the dataset, corresponds to a reduction of \$2,673.²³ Differences in wages of this magnitude are commonly observed across different audit offices. We also find that wages offered on audit positions increase with the seniority of the job, consistent with our expectations. In additional analyses, we also regress the average office year-on-year wage growth over *Auditor LMP*, and find a negative association, significant at 10% (untabulated).

4.4 Auditor Labor Market Power and Audit Quality

In this section, we examine the effect of audit offices' labor market power on audit quality by using the following model.

$$\begin{aligned}
\text{Audit Quality}_{i,j,t} &= \beta_0 + \beta_1 \text{Auditor LMP}_{j,t} + \beta_2 \text{Size}_{i,t} \\
&+ \beta_3 \text{Leverage}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{CAPEX}_{i,t} + \beta_6 \text{Ret Vol}_{i,t} + \beta_7 \text{BTM}_{i,t} \\
&+ \beta_8 \text{Sales Growth}_{i,t} + \beta_9 \text{ICW}_{i,t} + \beta_{10} \text{Foreign} + \beta_{11} \text{Market Share}_{j,t} \\
&+ \beta_{12} \text{Influence}_{j,t} + \beta_{13} \text{Unemployment Rate}_{j,t} + \beta_{14} \text{Real GDP}_{j,t} + \text{Client Company FE} \\
&+ \text{Auditor FE} + \text{Year FE} + \varepsilon_{i,t}, \quad (4)
\end{aligned}$$

where the suffixes i , j , and t correspond to clients, audit offices, and years, respectively. As discussed in Section 3.3, we use the absolute value of discretionary accruals ($Abs(DA)$), the likelihood of earnings restatements ($Restatement$), and the likelihood of meeting or narrowly

²² Using wage data on posted job positions from BGT, we also find that higher labor market power is associated with lower posted wages. However, given that U.S. employers typically do not disclose offered salaries in their job postings, the number of Big 4 audit-related postings with wage data available in the BGT dataset is very limited. Therefore we do not rely on the BGT wage data in our primary analysis.

²³ The 4.3% is computed as $1 - e^{(-0.264 \times 0.165)}$.

beating earnings benchmarks (*Meet-or-Beat*) to measure *Audit Quality*. We expect negative associations between *Auditor LMP* and each of these measures of audit quality.²⁴

We control for certain client characteristics and audit firm-level or office-level characteristics that have been documented to affect audit quality and fees (e.g., Francis and Yu 2009; Minutti-Meza 2013; DeFond, Erkens, and Zhang 2016; Aobdia 2019), such as the natural logarithm of total assets (*Size*), leverage (*Leverage*), return on assets (*ROA*), capital expenditure scaled by average total assets (*CAPEX*), stock return volatility (*Ret Vol*), book-to-market ratio (*BTM*), sales growth (*Sales Growth*), internal control material weaknesses (*ICW*), foreign transactions (*Foreign*), the revenue-based market share of the audit office (*Market Share*), influence of a specific client (*Influence*), and unemployment rate and real GDP of the region where the audit office is located (*Unemployment Rate, Real GDP*). In addition, we include auditor fixed effects, and year fixed effects in the model. Auditor fixed effects rule out the alternative explanation that certain time-invariant characteristics of audit firms simultaneously influence audit fees and auditors' local labor market power. Year fixed effects control for time-varying trends. Client company fixed effects, which we include in the model estimated using OLS with *Abs(DA)* as the dependent variable, mitigate the concern that audit offices with higher local labor market power can choose particular clients, for example, those that are easier to audit. For models where the dependent variables are *Restatement* or *Meet-or-Beat*, we use logistic models and replace client company fixed effects with client industry fixed effects.²⁵ All variables are winsorized at the top and bottom 1% and defined in Appendix A.

We report the estimation results when using the absolute value of discretionary accruals in Table 4. In Column (1), we include in the regression only audit offices' labor market power

²⁴ In this main test, both labor market power and audit quality are measured in year t . To mitigate the concern that there may be a gap between job postings and the new hires starting to work, we lag the labor market power measure for six months and find that the tenor of the results remains unchanged (untabulated).

²⁵ Because of quasi-separation issues in the data when using logistic models that include a large number of fixed effects, we cannot add client fixed effects in the regression and use industry fixed effects instead. See Albert and Anderson (1984) for more details about issues of quasi-separation of the data when using logistic specifications.

(*Auditor LMP*) without controlling for any audit and client company characteristics and find a significantly negative coefficient on *Auditor LMP*. In Column (2), we include in the regression client company characteristics and find consistent results. In Column (3), we further control for audit firm and office characteristics. The coefficient on *Auditor LMP* is -0.017 and significant at the 1% level, suggesting that client companies audited by offices with higher labor market power have lower absolute value of discretionary accruals.

We present the logistic regression results of using restatement and meeting or narrowly beating earnings benchmark to measure audit quality in Table 5. In Column (1), we regress the probability of restatement (*Restatement*) on audit offices' labor market power (*Auditor LMP*) and other control variables and find that labor market power is negatively related to the likelihood of earnings restatement. The coefficient on *Auditor LMP* is -0.577 and significant at the 5% level, indicating that, at the average of control variables, an increase in audit offices' labor market power from the fifth to the 95th percentile is associated with a 2.5% reduction in the likelihood of earnings restatement. In Column (2), we use the probability of meeting or narrowly beating earnings benchmark (*Meet-or-Beat*) as the dependent variable and find that the coefficient on *Auditor LMP* is -0.525 and significant at the 5% level, suggesting that client companies of audit offices with greater labor market power are less likely to meet or narrowly beat earnings benchmark. In terms of economic significance, an increase in auditor labor market power from fifth to 95th percentile is associated with a 4.5% reduction of likelihood of meeting or narrowly beating the zero earnings per share benchmark. Taken together, the results in Tables 5 and 6 provide consistent evidence that audit offices' labor market power improves audit quality.

4.5 Instrumental Variable Approach

So far, we have documented a positive association between an audit office's labor market power and audit quality. However, it is possible that unobserved audit office

characteristics that are correlated with our measure of office labor demand drive the results. For example, higher office turnover might lead to increased postings, and in turn a higher measure of office labor demand. To mitigate this concern, we employ an instrumental variable (IV) approach by exploiting quasi-exogenous client losses of audit offices caused by clients being acquired during mergers and acquisitions. After a merger, the auditor of the target is typically dismissed (e.g., Firth 1999; Dhaliwal et al. 2016).²⁶ This client loss leads to lower demand for audit services and eventually diminishes an office's ability to hire labor, resulting in a decrease in its labor market power.²⁷

We use the following two-stage least square regression to implement the IV analysis.

$$\begin{aligned}
 \text{Auditor } LMP_{i,j,t} = & \beta_0 + \beta_1 \text{Target}_{j,t-3} + \beta_2 \text{Market Share}_{i,t} \\
 & + \beta_3 \text{Office Importance}_{i,t} + \beta_4 \text{Average National Leader}_{i,t} \\
 & + \beta_5 \text{Average City Leader}_{i,t} + \beta_6 \text{Unemployment_Rate}_{j,t} + \beta_7 \text{Real_GDP}_{j,t} \\
 & + \varepsilon_{i,t}; \quad (5 - 1)
 \end{aligned}$$

$$\begin{aligned}
 AQ_{i,j,t} = & \beta_0 + \beta_1 \text{Instrumented_LMP}_{j,t} + \beta_2 \text{Size}_{i,t} \\
 & + \beta_3 \text{Leverage}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{CAPEX}_{i,t} + \beta_6 \text{Ret_Vol}_{i,t} + \beta_7 \text{BTM}_{i,t} \\
 & + \beta_8 \text{Sales Growth}_{i,t} + \beta_9 \text{ICW}_{i,t} + \beta_{10} \text{Foreign} + \beta_{11} \text{Fee Share}_{j,t} \\
 & + \beta_{12} \text{Influence}_{j,t} + \beta_{13} \text{Unemployment_Rate}_{j,t} + \beta_{14} \text{Real_GDP}_{j,t} + \text{Clien Company FE} \\
 & + \text{Auditor FE} + \text{Year FE} + \varepsilon_{i,t}. \quad (5 - 2)
 \end{aligned}$$

In the first stage, we regress the variable of interest, *Auditor LMP*, on the instrumental variable *Target*, which is an indicator variable that equals one if an audit office lost a client three years ago because of an acquisition, and several audit office characteristics.²⁸ We expect

²⁶ We confirm that the auditor of the target is dismissed for the vast majority of acquisitions that fall during our sample period.

²⁷ If the acquirer and the target share the same auditor, the expected client loss will not occur. Therefore we exclude such cases from our IV analysis.

²⁸ We lag *Target* by three years because it typically takes time for audit offices to incorporate their demand shocks in their hiring decisions. Typically, hiring decisions are made at least one year in advance and sometimes more when offices target particular audit interns. Nevertheless, as a robustness test, we construct three instrumental variables by lagging *Target* by one year, two years, and three years and include these three IVs in the first-stage regression and their corresponding *Instrumented LMP* in the second-stage regression. The results remain qualitatively similar.

the coefficient on *Auditor LMP* to be significantly negative if a quasi-exogenous client loss reduces an office's ability to hire in the future. In the second stage, we regress the three measures of audit quality used previously on *Instrumented LMP*, which is the predicted value of *Auditor LMP* estimated from the first-stage regression. We include the same set of control variables and fixed effects as in Model (4). We expect the coefficient on *Instrumented LMP* in the second stage to be significantly negative if an audit office's labor market power positively impacts its audit quality.

Our IV approach resembles that of Mukherjee, Singh, and Žaldokasa (2017), who study the impact of changes in state-level corporate taxes on future innovation. In the first stage, they use state partisan balance and state-level differences in the requirement of majority provision to pass a tax increase to instrument for the probability of tax increases in a state. In the second stage, they examine the effect of the predicted tax increases in a state on changes in innovation outputs at the corporate level. Because the first-stage regression is estimated at the state-year level, they do not include the control variables used in the second-stage regression, which is estimated at the firm-year level, in the first-stage regression.²⁹

For an instrument to be valid, it needs to affect the second-stage variable only through its influence on the first-stage variable, that is to be uncorrelated with the second-stage error term (Larker and Rusticus 2010). Our instrument might not necessarily fulfill this condition when we focus on the industry of the acquired client, because the client loss might lead to unused-auditor capacity in this particular industry, which may affect audit quality. However, this issue is less salient if we focus on industries that differ from the acquired client's industry. Accordingly, we restrict the second-stage regression to clients outside the industry of the target (defined at the two-digit SIC code).

²⁹ As a robustness check, we also follow Jens (2017), who uses an IV approach to study the effect of political uncertainty at the state level on firm investment, and include in the first stage regression the averages of client companies' characteristics controlled in the second stage regression. The results (untabulated) remain qualitatively the same, although the instrument variable becomes weaker.

We report the IV analysis results in Table 6. We find in Panel A that *Target* loads negatively in the first-stage regression, which is consistent with our expectation that the loss of an acquired client decreases an audit office's labor market power. The economic magnitude is large. The reduction in labor market power is 3.6%, to be compared with an office average of 22.5%, that is, a relative decline of 16%. The partial F-statistic of the first-stage regression is 11.03, and larger than the recommended 8.96 threshold of Stock et al. (2002) and Larcker and Rusticus (2010), indicating that our instrumental variable is not weak. In Panel B, we find that the coefficient on the predicted value of labor market power, *Instrumented LMP*, is significantly negative, suggesting that the reduction in labor market power resulting from the loss of an acquired client leads to a significant decrease in audit quality of the clients in other industries.³⁰ Overall, the IV results are consistent with auditor labor market power having a causal effect on audit quality.

4.6 Labor Market Power at Different Seniority Levels

In this section, we further exploit the features of our job posting data and examine whether the documented relation between labor market power and audit quality varies in the seniority level of the posted job positions. Audit teams are usually composed of junior positions (e.g., associates and seniors), manager positions (e.g., managers and senior managers), and executive positions (e.g., directors and partners) (Cameran, Ditillo, and Pettinicchio 2018). Junior auditors are primarily responsible for engaging in the day to day activity of the audits, while managers and partners play a more important role in coordinating audits and managing relationships with clients (Maister 1982; Yen 2012; Cameran et al. 2018). In the main analysis, our measure of labor market power is based on the job postings of all auditor positions by audit offices. To further examine the differential effect of labor market power in different segments

³⁰ The first-stage instrument, *Target*, reduces predicted labor market power. Because we find, in the second stage, that audit quality is higher when predicted labor market power is higher, this suggests that *Target* reduces audit quality.

of the auditor labor market, we construct alternative measures of labor market power based on the job postings titles. In particular, we follow the literature and classify job postings for juniors, associates, and seniors as junior positions and job postings for managers, senior managers, directors, and partners as managerial positions. We find that the vast majority of job postings are for junior positions (untabulated). Following this categorization, we define *Auditor LMP Junior* and *Auditor LMP Manager* as audit offices' labor market power for junior and managerial positions, respectively.³¹ First, in untabulated analyses, we replicate the analyses in Table 2, using the subsamples partitioned between junior and managerial positions. We find a positive and significant association between labor market power in junior positions and job skill requirements but no association between labor market power in managerial positions and job skill requirements. This result can be explained by Big 4 firms typically hiring auditors at the junior level and promoting them. In other words, the outside market for managerial audit positions is likely limited. Manager auditors likely have more alternatives, including staying in their jobs, and, as a result, our measure of labor market power at the managerial level is unlikely to be as impactful in terms of demand for skills as for the junior level.

Next, we examine the effect of audit labor market power on audit quality by seniority in Table 7. Panel A reports the results for including labor market power of junior and managerial positions. The coefficients on *Audit LMP Junior* in all three columns are negative and significant; the coefficients on *Audit LMP Manager*, while negative, are insignificant at conventional levels.³² These results suggest that the effect of audit labor market power on audit quality is mainly present for junior positions, and that it is the ability to recruit and retain talented staff auditors that drives the relation between audit offices' labor market power and audit quality. This result is, again, consistent with audit firms hiring the bulk of their employees

³¹ The correlation between these two measures is 0.54 (untabulated).

³² The correlation between *Audit LMP Junior* and *Audit LMP Manager* is 46.7%, and the VIF (variance of inflation) of these three regressions is about 5, suggesting that multi-collinearity concerns do not affect our results.

at the junior level and promoting them from within. As a result, our measure of labor market power is likely more informative about audit quality at the junior level than it is at the managerial level.

4.7 The Role of Labor Market Mobility

Our results on the effect of labor market power on audit quality hinge on the assumption that auditor mobility is sufficiently low that audit firms can exploit their local labor market power. Otherwise, prospective employees would move or threaten to move to different locations with different labor markets. In this section, we confirm this mechanism by focusing on the effects of labor market power on audit quality when auditor mobility is presumably lower.

We use two measures to capture audit labor market mobility. First, we exploit the fact that mobility in the United States decreases with distance (e.g., Gottlieb and Joseph 2006). We use the distance of a given CBSA to its closest CBSA that has audit job postings. The idea is, when a CBSA is more remote, physical distance increases and labor market mobility is lower. We calculate the distance between two CBSAs following Ivkovic and Weisbenner (2005). Second, we use the aggregate audit labor demand of a given CBSA, relative to its closest CBSA. The idea is, when the relative labor demand is higher, auditors have fewer opportunities to move away from the CBSA, and labor market mobility is lower.

Panels B and C of Table 7 report the results. In Panel B, *High distance* is an indicator variable that equals one when the distance between a CBSA and its closest CBSA with audit-related job postings is higher than the sample median and zero otherwise. In Panel C, *High difference* is an indicator variable that equals one when the difference in the number of audit-related job postings between a CBSA and its closest CBSA is higher than the sample median and zero otherwise. We find in both panels that audit quality is higher when labor mobility is proxied to decrease, evidenced by negative coefficients on *Auditor LMP* \times *High Distance* and

Auditor LMP \times *High Difference*. These results suggest that the relation between auditor labor market power and audit quality is stronger when the local labor market mobility is lower.

4.8 Robustness and Placebo Tests

4.8.1 Alternative Samples of Audit Offices

In this section, we report the results using an alternative method to construct the auditor labor market power measure and alternative samples of audit offices. Recall that, in our main tests, we calculate *Auditor LMP* using all postings of top 50 auditors and then include only the Big 4 audit offices in the sample. In this section, we conduct two sets of robustness checks. First, we show that our results hold when the labor market power measure is calculated only based on the job postings from Big 4 offices. Second, we show that our main result holds when we expand our sample to include all audit offices of the largest eight, 16, and all top 50 auditors. Panel A of Table 8 reports results of using the alternative measure of *Auditor LMP* that considers only job postings from the Big 4. We find robust results across three columns: higher audit labor market power is associated with a smaller absolute value of discretionary accruals and a lower likelihood of restatements and meeting or narrowly beating the zero earnings per share benchmark.

Panels B, C, and D of Table 8 report the results of expanding the sample to include the largest eight, 16, and all top 50 audit firms, respectively. The coefficients on *Auditor LMP* are generally consistently negative and significant. One exception is, when we include all top 50 auditors in the sample, the association between auditor labor market power and probability of restatement is negative, but the significance falls below conventional levels, perhaps because the relation between auditor labor market power and restatements is stronger for larger audit firms than for smaller ones. Overall, our results are robust when we use an alternative definition of *Auditor LMP* and alternative samples.

4.8.2 Controlling for the Role of Audit Market Competition

Our main analysis explores the idea that audit offices with higher labor market power can better recruit and retain talented auditors and consequently provide better audit services. To the extent that our measure of audit offices' power in the *input* market (e.g., labor market) is positively correlated with the sizes of audit offices, our finding might be a manifestation of the influence of auditor incentives and audit quality (Boone, Khurana, and Raman 2012; Francis, Michas, and Seavey 2013). In the main analysis, we control for this effect by including in the regression the fee-based market share of the audit office (*Market share*). To further mitigate this concern, we examine whether our results are sensitive to an audit office local market share. We construct an indicator variable based on the client fees. *High market share* is an indicator variable that equals one if the audit office's fee-based market share is above the sample median and 0 otherwise. In Table 9, we regress our measures of audit quality on *Auditor LMP*, *High market share*, and the interaction $Auditor\ LMP \times High\ market\ share$. We find that the coefficient on *Auditor LMP* is significantly negative, suggesting that audit offices with higher labor market power and lower fee-based market share provide higher audit quality. Moreover, the coefficient on $Auditor\ LMP \times High\ market\ share$ is not significantly different from zero, suggesting that fee-based market share does not change the influence of audit offices' labor market power on audit quality. In additional analyses, we replace *High market share* with a measure of auditor office size, following Francis and Yu (2009), and find similar results (untabulated). Collectively, these results confirm that our findings are unlikely to be driven by the influence of audit office market share or size on audit quality.

4.8.3 Placebo Test Using Advisory-Related Job Postings

In this subsection, we conduct a placebo test in which we use advisory-related positions in job postings to construct a measure of labor market power, *Advisory LMP*. To the extent that our findings capture the effect of labor market power related to auditor positions on audit service quality, we expect that labor market power related to advisory positions is not related

to audit quality. We define advisory-related positions as those job postings with titles that contain “advisory,” “consulting,” “consultant,” or “advisor” and report the results in Table 10. We do not find significant associations between *Advisory LMP* and our measures of audit quality, suggesting that it is audit offices’ ability to recruit and retain talented audit personnel that drives our results.

4.9 Audit Fee and Market Share Consequences of Labor Market Power

We examine the consequences of labor market power on audit fees. As shown above, greater labor market power provides audit offices opportunities to pay lower wages. In a competitive environment, audit firms might pass these cost savings to their clients and charge less (e.g., Aobdia and Srivastava 2018). Audit offices might also be interested in charging less to grow their market share. We test this prediction by adapting Model (4), replacing the dependent variable with $\ln(\text{Audit Fees})$, the natural logarithm of audit fees. We expect a negative association between *Auditor LMP* and audit fees if audit offices with higher labor market power pass on some of the cost savings to their clients.

In Column 1 of Table 11, we regress $\ln(\text{Audit Fees})$ on audit offices’ labor market power, *Auditor LMP*, and other control variables. We find that the coefficient on *Auditor LMP* is -0.069 and significant at the 1% level, suggesting that audit offices with higher labor market power charge lower audit fees. A one-standard-deviation increase in *Auditor LMP* is associated with a 1.1% decrease in audit fees. This finding is consistent with audit offices with greater local market power being able to lower wages and some of the cost savings, in turn, being passed on to their clients.

As a placebo test, we regress the natural logarithm of the fees paid for tax services, $\ln(\text{Tax Fees})$, on the labor market power of local audit offices in Column 2 of Table 11. The idea is that, because our measure of labor market power captures audit offices’ power in the local market for audit personnel and not for tax experts, there should be no systematic relation

between our labor market power measure and tax fees. Consistent with this expectation, we find that the coefficient on *Auditor LMP* is not significantly different from zero. This finding further supports the argument that the negative relation between labor market power and audit fees is driven by audit offices' ability to recruit and retain talented auditors.

Having established that labor market power allows an audit office to provide better audits at a lower cost, we examine next the effect of an audit office's labor market power on client acquisition and retention opportunities, in other words, its future market share. Prior research finds that clients are often price sensitive but also care about the quality provided by their auditor (e.g., Beasley et al. 2009; Fiolleau et al. 2013; Almer et al. 2014). Thus we conjecture that an office with greater labor market power can increase its market share in the future through higher audit quality at lower cost. To test this conjecture, we adapt the office-level regression specified in Model (2) by replacing the dependent variable with *Market Share Growth*, which is the percentage change in the fee-based market share of an audit office from year t to year $t+1$. We also use as the dependent variable *Market Share Growth (# Clients)*, which is the percentage change in the market share of an audit office from year t to year $t+1$ and market share is measured by the number of clients. We report the regression results in Table 12. In Column 1 (Column 2), we use audit fees (the number of clients) to measure the market share of an audit office. The results in these two columns consistently suggest that audit offices with higher labor market power experience a larger growth in market shares.

5. Conclusion

Recent literature in labor economics has increasingly paid attention to labor market concentration, a phenomenon in which reduced labor market competition can give employers the power to dictate wages (e.g., Azar, Marinescu, and Steinbaum 2017; Benmelech, Bergman, and Kim 2018). Firms with labor market power tend to have greater bargaining power in depressing wages and retaining workers, as their workers have limited outside options (Berger,

Herkenhoff, and Mongey, 2019). We focus on the audit industry and test whether audit offices with greater labor market power can recruit and retain more talented employees, such that they ultimately provide higher quality audits.

We first provide evidence that audit offices with higher labor market power have higher requirements for soft skills in their job postings, suggesting that labor market power gives audit offices an opportunity to demand more from job candidates. Moreover, we find that an audit office's labor market power is negatively associated with wages offered on audit positions. We then document that clients of audit offices with greater labor market power have lower absolute value of discretionary accruals and are less likely to restate earnings and to meet or narrowly beat earnings benchmark. These results are consistent with audit offices with greater labor market power providing higher quality audit services. We further adopt an instrumental variable approach and find consistent results, supporting the argument that audit offices' labor market power has a causal effect on audit quality. Finally, we find evidence that audit offices share with their clients some of the cost savings arising from their labor market power, and in light of the higher audit quality provided, benefit from a market share standpoint.

Taken together, our results provide evidence on a short-run positive effect of labor market power in the audit industry, in the form of higher audit quality at a lower cost to the client. Nevertheless, we caveat that the benefits of labor market power are likely not permanent, as prospective auditors might be tempted by alternative career options, such as consulting and tax, thereby lowering the attractiveness of the audit industry in the long run. Thus, our results also confirm a concern raised by regulators about concentration in the audit industry. While regulators are mostly concerned about how concentration affects the provision of audit services, our results suggest that they should perhaps worry more about how concentration can lower wages, and will ultimately affect the supply of individual auditors in the long run.

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Appendix A: Variable Definitions

Variable	Variable Definition
<i>Variables Defined at the Audit Office (or CBSA) Level</i>	
<i>Auditor LMP</i>	The labor market power of an audit office in a given auditor city, calculated as the percentage of the audit office’s job postings out of all audit job postings, over a year, in the CBSA where the audit office is located. If a city’s border encompasses two or more CBSAs, the average percentage of job postings in those CBSAs is calculated.
<i>Advisory LMP</i>	The labor market power of the advisory department of an audit office, calculated as the percentage of the audit office’s job postings with titles containing “advisory,” “consulting,” “consultant,” or “advisor” out of all audit job postings with titles containing “advisory,” “consulting,” “consultant,” or “advisor,” over a year, in the CBSA where the audit office is located.
<i>Auditor LMP Junior</i>	The labor market power of an audit office for all associate and senior auditor positions in a given auditor city, calculated as the percentage of the audit office’s job postings for associate and senior level positions out of all job postings for these positions, over a year, in the CBSA where the audit office is located.
<i>Auditor LMP Manager</i>	The labor market power of an audit office for all manager positions (including managers, directors, and partners) in a given auditor city, calculated as the percentage of the audit office’s job postings for managerial positions out of all job postings for these positions, over a year, in the CBSA where the audit office is located.
<i>%Soft</i>	The fraction of job postings that require soft skills by an audit office in a given CBSA-year. We define soft skills as social skills (with keywords “communication”, “collaboration”, or “teamwork”, etc.), character-oriented skills (with keywords “detail-oriented”, “organized”, or “multi-tasking”, etc.), and people management skills (with keywords “people management”, “leadership”, or “organizational skills”, etc.)
<i>Soft/Hard</i>	The average of the number of soft skills relative to the number of hard skills required by a job posting by an audit office in a given CBSA-year.
<i>%Social</i>	The fraction of job postings that require soft skills by an audit office in a given CBSA-year. We identify social skills with keywords “communication”, “collaboration”, or “teamwork”, etc.
<i>Average City Leader</i>	The fraction of industries where an audit firm is a city leader out of all industries (see the <i>City Leader</i> variable for definition at the client level).
<i>Average National Leader</i>	The fraction of industries where an audit firm is a national leader out of all industries (see the <i>National Leader</i> variable for definition at the client level).
<i>High Distance</i>	A dummy variable that equals one when the distance between the CBSA in which the audit office is located, and its’ closest CBSA, is higher than the median and zero otherwise.
<i>High Difference</i>	A dummy variable that equals one when the difference in the number of audit-related job postings between a CBSA in which an audit office is located, and its’ closest CBSA, is higher than the median and zero otherwise.
<i>Market Share</i>	The fraction of audit fees of an audit office in the CBSA to which the audit office belongs.

Variable	Variable Definition
<i>Market Share (# Clients)</i>	The fraction of the number of clients of an audit office in the CBSA to which the audit office belongs.
<i>Market Share Growth (#Clients)</i>	The year-to-year percentage change in #clients-based market share, which is defined as the fraction of the number of clients of an audit office in the CBSA in which the audit office is located.
<i>Market Share Growth</i>	The year-to-year percentage change in the fee-based market share, which is defined as the fraction of audit fee of an audit office in the CBSA in which the audit office is located.
<i>Office Importance</i>	The fraction of job postings from an audit office in the CBSA relative to the total postings of the audit firm to which the audit office belongs.
<i>Target</i>	Instrument variable, a dummy variable that equals 1 if an auditor office experiences a loss of client that is acquired as a target in year $t-3$.
<i>Unemployment Rate</i>	The unemployment rate of the county in which the audit office is located.
<i>Real GDP</i>	The real GDP of the CBSA in which an audit office is located, in trillions of dollars.
Variables Defined at the Client Level	
<i>Abs(DA)</i>	The absolute value of discretionary accruals, computed from the modified-Jones model.
<i>Restatement</i>	A dummy variable that equals one if any part of fiscal year t overlaps with a restated period identified in Audit Analytics database, and zero otherwise.
<i>Meet-or-Beat</i>	A dummy variable that equals one if the firm meet or beat the zero earnings per share benchmark by or within 5 cents, and zero otherwise.
<i>Instrumented LMP</i>	The predicted value of <i>Auditor LMP</i> from the first-stage estimation of the instrumental variable analysis, at the office level.
<i>Total Assets</i>	Book value of assets (Compustat AT)
<i>Size</i>	The natural logarithm of total assets.
<i>Leverage</i>	Long-term debt divided by total assets.
<i>ROA</i>	Return on assets, measured as income before extraordinary items divided by average total assets.
<i>CAPEX</i>	Capital expenditure scaled by total assets.
<i>Ret Vol</i>	Stock return volatility, measured as the standard deviation of monthly returns in a given year.
<i>BTM</i>	Book-to-market ratio. The book value of equity (Compustat SEQ) divided by the market value of equity (Compustat PRCC_F multiplied by CSHO).
<i>Sales Growth</i>	The year-on-year sales-growth.
<i>ICW</i>	An indicator variable that equals one for any period in which management reports ineffective internal controls per Audit Analytics' 'SOX 404 – Internal Controls' database.
<i>Foreign</i>	A dummy variable that equals one for observations with non-zero values for Foreign Currency Translation Adjustments (Compustat FCA) in year t .
<i>Influence</i>	The ratio of a specific client's total fees (audit fees plus non-audit fees) over aggregate annual fees generated by the practicing office which audits the client in the auditor city.
<i>Audit Fees</i>	Audit fees charged by an audit office for a given client in a given fiscal year, in millions.
<i>Ln(Audit Fees)</i>	The natural logarithm of audit fees.

Variable	Variable Definition
<i>Tax Fees</i>	Tax service fees charged by an audit office for a given client in a given fiscal year, in millions.
<i>Ln(Tax Fees)</i>	The natural logarithm of tax fees.
<i>City Leader</i>	A dummy variable that equals one if an office is the number one auditor in terms of aggregated client audit fees in the client company' industry within that city in a specific fiscal year, and zero otherwise.
<i>National Leader</i>	A dummy variable that equals one if an auditor is the number one auditor in the client company's industry in terms of aggregated audit fees in a specific fiscal year, and zero otherwise.
<i>Variables Defined at the Job</i>	
<i>Application Level</i>	
<i>Ln(Wage)</i>	The natural logarithm of the wage offered on a job position.
<i>Senior Associate</i>	A dummy variable that equals one if a job position is at the senior associate level and zero otherwise.
<i>Manager</i>	A dummy variable that equals one if a job position is at the manager level and zero otherwise.
<i>Senior Manager</i>	A dummy variable that equals one if a job position is at the senior manager level and zero otherwise.

Appendix B: Examples on Audit Office Ranks by Labor Market Power (LMP) and Total Client Fees

1. Atlanta-Sandy-Springs-Roswell (CBSA=12060) in 2016

Auditor	Ranked by LMP	Ranked by Fee
KPMG LLP	3	1
PricewaterhouseCoopers LLP	4	2
Deloitte & Touche LLP	2	3
Ernst & Young LLP	1	4

2. Washington-Arlington-Alexandria (CBSA=47900) in 2014

Auditor	Ranked by LMP	Ranked by Fee
KPMG LLP	2	1
PricewaterhouseCoopers LLP	4	2
Deloitte & Touche LLP	3	3
Ernst & Young LLP	1	4

Table 1: Descriptive Statistics

Panel A reports the summary statistics of the auditor labor market power measure for Big 4 auditors in our main sample. Panel B reports the summary statistics of main variables used in our analyses. Variable definitions are provided in Appendix A.

Panel A: Auditor LMP for Big 4 Audit Firms

Auditor	Mean	S.D.	p25	p50	p75
Ernst & Young LLP	0.190	0.168	0.086	0.138	0.230
Deloitte & Touche	0.133	0.102	0.074	0.103	0.151
KPMG	0.235	0.217	0.107	0.165	0.250
PricewaterhouseCoopers	0.384	0.183	0.258	0.373	0.493
Average	0.225	0.165	0.102	0.169	0.303

Panel B: Summary Statistics

Variable	N	Mean	S.D.	p25	p50	p75
Auditor LMP	12,668	0.225	0.165	0.102	0.169	0.303
Abs (DA)	12,668	0.056	0.070	0.017	0.352	0.066
Meet-or-Beat	12,668	0.299	0.458	0.000	0.000	1.000
Restatement	12,668	0.149	0.356	0.000	0.000	0.000
Total Assets (\$M)	12,668	8006.1	23674.9	467.3	1613.0	5352.9
Size	12,668	7.428	1.741	6.147	7.386	8.585
Leverage	12,668	0.190	0.176	0.011	0.164	0.302
ROA	12,668	0.016	0.135	0.003	0.040	0.077
CAPEX	12,668	0.049	0.052	0.016	0.032	0.061
Ret Vol	12,668	0.100	0.054	0.062	0.088	0.124
BTM	12,668	0.481	0.385	0.228	0.390	0.622
Sales Growth	12,668	0.090	0.215	-0.028	0.057	0.172
ICW	12,668	0.034	0.181	0.000	0.000	0.000
Foreign	12,668	0.642	0.479	0.000	1.000	1.000
Market Share	12,668	0.291	0.155	0.179	0.266	0.361
Influence	12,668	0.081	0.150	0.011	0.028	0.076
Number of clients	12,668	32.154	29.299	11	23	42
Unemployment Rate	12,668	6.547	2.096	4.938	6.120	8.076
Real GDP (\$T)	12,668	0.367	0.355	0.123	0.256	0.434
City Leader	12,668	0.654	0.476	0	1	1
National Leader	12,668	0.311	0.311	0	0	1
Average City Leader	1,657	0.725	0.423	0	1	1
Average National Leader	1,657	0.298	0.457	0	0	0.85
%Soft	1,657	0.749	0.238	0.625	0.800	0.935
Soft/Hard	1,657	0.139	0.073	0.094	0.128	0.169
%Social	1,657	0.066	0.050	0.028	0.059	0.098
Wage	10,800	61,360.84	17,707.86	51,000	57,000	68,266
Audit Fees (\$M)	12,581	3.221	4.532	0.952	1.736	3.550
Ln(Audit Fees)	12,581	14.456	0.977	13.768	14.368	15.082

Table 2. Auditor Labor Market Power and Demand for Skills

Table 2 reports the regression results of an audit office's demand for skills on the office's labor market power. In Column (1), the dependent variable is *%Soft*, the fraction of job postings that require soft skills by an audit office in a given CBSA-year. In Column (2), the dependent variable is *Soft/Hard*, the ratio of the average number soft skills relative to the average number of hard skills required by an audit office in a given CBSA-year. In Column (3), the dependent variable is *%Social*, the fraction of job postings that require social skills by an audit office in a given CBSA-year. *Auditor LMP* is the labor market power of an audit office, calculated as the fraction of job postings in the CBSA where the auditor office is located. In all models, we control for auditor and year fixed effects. Standard errors are clustered at the audit office level and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

	(1)	(2)	(3)
Variables	% Soft	Soft/Hard	% Social
Auditor LMP	0.133*** (0.046)	0.072*** (0.013)	0.049*** (0.010)
Market Share	-0.020 (0.036)	0.007 (0.012)	0.004 (0.008)
Average City Leader	-0.013 (0.012)	-0.006 (0.004)	-0.002 (0.002)
Average National Leader	-0.023 (0.014)	-0.001 (0.004)	0.003 (0.002)
Office Importance	-0.231 (0.223)	-0.085* (0.048)	-0.076*** (0.029)
Unemployment Rate	-0.009 (0.007)	-0.000 (0.002)	0.001 (0.001)
Real GDP	-0.023 (0.029)	-0.017** (0.008)	-0.004 (0.005)
Auditor FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N	1657	1657	1657
Adjusted R ²	0.359	0.382	0.492

Table 3. Auditor Labor Market Power and Wages

Table 3 reports the regression results wages on auditor labor market power. In both columns, the dependent variable is $\ln(\text{Wage})$, the natural logarithm of the wage offered on a job position. *Auditor LMP* is the labor market power of an audit office, calculated as the fraction of job postings in the CBSA where the auditor office is located. Standard errors are clustered at the audit office level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

	(1)	(2)
	$\ln(\text{Wage})$	$\ln(\text{Wage})$
Auditor LMP	-0.395*** (0.130)	-0.264** (0.130)
Senior Associate	0.117*** (0.030)	
Manager	0.386*** (0.015)	
Senior Manager	0.530*** (0.077)	
Market Share	0.113 (0.073)	0.102*** (0.031)
Average City Leader	-0.000 (0.024)	-0.011 (0.013)
Average National Leader	0.029** (0.013)	0.033*** (0.011)
Office Importance	0.891*** (0.303)	0.326 (0.285)
Unemployment Rate	-0.010 (0.014)	0.009 (0.011)
Real GDP	0.010 (0.053)	0.574* (0.337)
Auditor FE	Yes	Yes
Year FE	Yes	Yes
CBSA \times Position FE	No	Yes
N	10800	10800
Adjusted R ²	0.037	0.181

Table 4. Auditor Labor Market Power and Audit Quality

Table 4 reports the regression results of audit quality on auditor labor market power and control variables. Audit quality is measured as the absolute value of discretionary accruals from modified-Jones model, $Abs(DA)$. *Auditor LMP* is the labor market power of the client's audit office, calculated as the fraction of job postings in the CBSA where the auditor office is located. We control for client company, auditor, and year fixed effects in all models. Standard errors are clustered at the client company level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

	(1)	(2)	(3)
Variables	Abs(DA)	Abs(DA)	Abs(DA)
Auditor LMP	-0.018*** (0.006)	-0.018*** (0.006)	-0.017*** (0.006)
Size		-0.004 (0.003)	-0.004 (0.003)
Leverage		-0.034*** (0.009)	-0.034*** (0.009)
ROA		-0.062*** (0.020)	-0.062*** (0.020)
CAPEX		0.110*** (0.029)	0.112*** (0.029)
Ret Vol		0.112*** (0.023)	0.111*** (0.023)
BTM		0.001 (0.003)	0.001 (0.003)
Sales Growth		0.011** (0.005)	0.011** (0.005)
ICW		-0.006* (0.003)	-0.006* (0.003)
Foreign		-0.002 (0.005)	-0.002 (0.005)
Market Share			-0.009 (0.010)
Influence			-0.003 (0.005)
Unemployment Rate			0.001 (0.001)
Real GDP			0.001 (0.009)
Client Company FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	12668	12668	12668
Adjusted R ²	0.325	0.340	0.340

Table 5. Auditor Labor Market Power, Restatements, and Meet-or-Beat

Table 5 uses two alternative measures of audit quality: *Restatement* and *Meet-or-Beat* to examine the effect of auditor labor market power on audit quality. In Column (1), the dependent variable is *Restatement*, a dummy variable that equals one if any part of fiscal year t overlaps with a restated period identified in the Audit Analytics database, and zero otherwise. In Column (2), the dependent variable is *Meet-or-Beat*, a dummy variable that equals one when a firm meet or beat the zero earnings benchmark by or within 5 cents and zero otherwise. *Auditor LMP* is the labor market power of the client's audit office, calculated as the fraction of job postings in the CBSA where the auditor office is located. We control for client industry, auditor and year fixed effects in both columns. Standard errors are clustered at the client company level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

Variables	(1) Restatement	(2) Meet-or-Beat
Auditor LMP	-0.577** (0.290)	-0.525** (0.236)
Size	0.016 (0.027)	0.130*** (0.022)
Leverage	0.087*** (0.028)	-0.025 (0.021)
ROA	-0.153 (0.271)	0.350 (0.218)
CAPEX	0.781 (0.891)	-1.329* (0.730)
Ret Vol	0.345 (0.698)	-4.006*** (0.633)
BTM	0.447*** 0.254* (0.138)	1.561*** -0.188 (0.128)
Sales Growth	(0.150)	(0.127)
ICW	1.252*** (0.113)	0.288** (0.123)
Foreign	0.124 (0.097)	-0.011 (0.078)
Market Share	0.270 (0.265)	0.305 (0.211)
Influence	0.380* (0.212)	0.157 (0.176)
Unemployment Rate	-0.043 (0.032)	0.009 (0.025)
Real GDP	0.004 (0.119)	0.041 (0.102)
Client Industry FE	Yes	Yes
Year FE	Yes	Yes
Auditor FE	Yes	Yes
N	12668	12668
Pseudo R ²	0.066	0.116

Table 6. Instrumental Variable (IV) Analysis—Auditor Labor Market Power and Audit Quality

Table 6 uses an instrumental variable approach to identify the effect on auditor labor market power on audit quality. Panel A presents the first-stage regression results of using *Target*, which equals 1 if an audit office experiences a loss of client that is acquired as a target in $t-3$, as the instrumental variable. Panel B presents the second-stage regression results of measures of audit quality on the predicted auditor labor market power. In the first-stage regression, the dependent variable is *Auditor LMP*, the labor market power of the client’s audit office. We cluster standard errors at the audit office level. In the second-stage regression, the dependent variables are *Abs(DA)*, *Restatement*, and *Meet-or-Beat*, respectively. *Instrumented LMP* is the predicted value of *Auditor LMP* from the first-stage estimation. We focus on the sample of firms in industries different from the client companies of the audit firms in the first stage. We control for client company/industry, auditor, and year fixed effects in the three columns and cluster standard errors at the client company level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

Panel A: First-stage Regression

	(1) Auditor LMP
Target	-0.036*** (0.011)
Market Share	0.350*** (0.023)
Office Importance	1.020** (0.491)
Average National Leader	0.010 (0.009)
Average City Leader	-0.021** (0.009)
Unemployment Rate	0.012*** (0.002)
Real GDP	-0.132** (0.054)
Intercept	0.078*** (0.015)
Partial F-statistic	11.03
N	1693
Adjusted R ²	0.226

Panel B: Second-stage Regression

	(1)	(2)	(3)
	ABS(DA)	Restatement	Meet-or-Beat
Instrumented LMP	-0.036** (0.017)	-3.272* (1.978)	-2.021* (1.115)
Size	-0.005 (0.005)	0.011 (0.058)	0.127*** (0.046)
Leverage	-0.069*** (0.013)	0.851** (0.332)	1.863*** (0.329)
ROA	-0.152*** (0.042)	-1.094 (0.806)	-2.357*** (0.780)
CAPEX	0.055 (0.052)	0.089 (1.545)	-2.118 (1.415)
Ret Vol	0.047 (0.035)	0.367 (1.365)	-4.565*** (1.160)
BTM	0.001 (0.007)	0.033 (0.064)	0.891*** (0.147)
Sales Growth	0.012 (0.008)	0.283** (0.137)	0.116 (0.261)
ICW	-0.000 (0.007)	1.474*** (0.243)	0.032 (0.244)
Foreign	-0.008 (0.007)	0.096 (0.166)	0.217* (0.130)
Market Share	0.011 (0.014)	0.603 (0.724)	0.558 (0.484)
Influence	0.007 (0.008)	-0.478 (0.379)	-0.015 (0.286)
Unemployment Rate	0.003 (0.002)	0.053 (0.069)	-0.003 (0.053)
Real GDP	0.011 (0.013)	-0.000*** (0.000)	-0.000 (0.000)
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	3700	3700	3700
Adjusted R ² / Pseudo R ²	0.260	0.120	0.103

Table 7. Auditor Seniority Levels, Auditor Mobility and Labor Market Mobility

Panels A report the regression results of audit quality on auditor labor market power at different seniority levels. *Auditor LMP Junior* is the labor market power of the client’s auditor among junior positions, calculated as the fraction of associate and senior level job postings in the CBSA where the auditor office is located. *Auditor LMP Manager* is the labor market power of the client’s auditor among managerial positions, calculated as the fraction of managerial level job postings (including manager, director, and partners) in the CBSA where the auditor office is located. Panels B and C examine the effect of labor market mobility on the relation between labor market power and audit quality. In Panel B, we measure labor market mobility by the physical distance between the focal CBSA and the closest CBSA that has job postings. *High distance* is an indicator variable equal to one if the distance is above the sample median, and zero otherwise. In Panel C, we measure labor market mobility by the difference in the total amount of audit fees between the focal CBSA and the closest CBSA that have job postings. *High difference* is an indicator variable equal to one if such difference is above the sample median, and zero otherwise. In Column (1), the dependent variable is *Abs(DA)*, the absolute value of discretionary accruals from modified-Jones model. In Column (2), the dependent variable is *Restatement*, a dummy variable that equals one if fiscal year *t* overlaps with a restated period identified in Audit Analytics database, and zero otherwise. In Column (3), *Meet-or-Beat* is a dummy variable that equals one if the firm meet or beat the zero-earnings benchmark by or within 5 cents, and zero otherwise. For all panels, we control for client company, auditor, and year fixed effects in Column (1) and control for client industry, auditor, and year fixed effects in Columns (2) and (3). Standard errors are clustered at the client company level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

Panel A: Seniority of Positions

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-beat
Auditor LMP Junior	-0.017*** (0.006)	-0.901*** (0.312)	-0.533** (0.226)
Auditor LMP Manager	0.001 (0.004)	0.338 (0.209)	0.030 (0.164)
Controls	Yes	Yes	Yes
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	12545	12545	12545
Adjusted R ² / Pseudo R ²	0.341	0.067	0.115

Panel B: Labor Market Mobility Measured by CBSA Distance

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-Beat
Auditor LMP	-0.008 (-0.93)	-0.143 (-0.43)	-0.151 (-0.58)
High Distance	0.033*** (2.98)	0.254* (1.79)	-0.009 (-0.08)
Auditor LMP × High Distance	-0.024** (-2.09)	-1.375*** (-3.11)	-0.933** (-2.52)
Controls	Yes	Yes	Yes
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	12668	12668	12668
Adjusted R ² / Pseudo R ²	0.349	0.074	0.118

Panel C: Labor Market Mobility Measured by Audit Fee Differences

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-Beat
Auditor LMP	-0.022*** (-3.01)	-0.343 (-0.95)	-0.166 (-0.61)
High Difference	-0.003 (-0.81)	0.238* (1.76)	-0.046 (-0.44)
Auditor LMP × High Difference	0.003 (0.27)	-0.858** (-2.04)	-0.825** (-2.43)
Controls	Yes	Yes	Yes
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	12668	12668	12668
Adjusted R ² / Pseudo R ²	0.348	0.073	0.118

Table 8. Robustness Test—Alternative Measures of Auditor Labor Market Power and Alternative Samples of Audit Firms

Table 8 reports the robustness test results using alternative measures of auditor labor market power and alternative samples of audit firms. In Column (1), the dependent variable is *Abs(DA)*, the absolute value of discretionary accruals from modified-Jones model. In Column (2), the dependent variable is *Restatement*, a dummy variable that equals one if fiscal year *t* overlaps with a restated period identified in Audit Analytics database, and zero otherwise. In Column (3), *Meet-or-Beat* is a dummy variable that equals one if the firm meet or beat the zero-earnings benchmark by or within 5 cents, and zero otherwise. In Panel A, *Auditor LMP* is constructed with the audit-related postings of Big 4 audit firms only. In Panel B, we expand our sample to include the largest eight audit firms. In Panel C, we expand our sample to include the largest 16 audit firms. In Panel D, we expand our sample to include all top 50 audit firms (44 of which have job posting data available). For all panels, we control for client company, auditor, and year fixed effects in Column (1) and client industry, auditor, and year fixed effects in Columns (2) and (3). Standard errors are clustered at the client company level and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

Panel A: Alternative Measure of Auditor Labor Market Power

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-Beat
Auditor LMP	-0.013** (0.006)	-0.554* (0.324)	-0.525** (0.250)
Controls	Yes	Yes	Yes
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	10702	10718	10689
Adjusted R ² / Pseudo R ²	0.353	0.069	0.124

Panel B: Alternative Samples of Audit Offices: Top 8 Auditors

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-Beat
Auditor LMP	-0.016*** (0.006)	-0.518* (0.283)	-0.422* (0.228)
Controls	Yes	Yes	Yes
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	13787	13787	13773
Adjusted R ² / Pseudo R ²	0.336	0.065	0.114

Panel C: Alternative Samples of Audit Offices: Top 16 Auditors

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-Beat
Auditor LMP	-0.015*** (0.006)	-0.507* (0.278)	-0.463** (0.226)
Controls	Yes	Yes	Yes
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	14006	14006	13992
Adjusted R ² / Pseudo R ²	0.334	0.064	0.114

Panel D: Alternative Samples of Audit Offices: All Top 50 Auditors

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-Beat
Auditor LMP	-0.014** (0.006)	-0.420 (0.262)	-0.457** (0.216)
Controls	Yes	Yes	Yes
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	15643	15643	15627
Adjusted R ² / Pseudo R ²	0.315	0.059	0.115

Table 9. Robustness Test—The Role of Auditor Market Share

Table 9 examines the role of auditor market share on the impact of auditor labor market power on audit quality. In all columns, we measure market share by the fraction of clients in the CBSA where the audit office is located. In Column (1), the dependent variable is *Abs(DA)*, the absolute value of discretionary accruals from modified-Jones model. In Column (2), the dependent variable is *Restatement*, a dummy variable that equals one if fiscal year *t* overlaps with a restated period identified in Audit Analytics database, and zero otherwise. In Column (3), *Meet-or-Beat* is a dummy variable that equals one if the client meets or beats the zero earnings per share benchmark by or within 5 cents, and zero otherwise. We control for client company, auditor, and year fixed effects in Column (1) and client industry, auditor, and year fixed effects in Columns (2) and (3). Standard errors are clustered at the client company level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

	(1)	(2)	(3)
Variables	Abs(DA)	Restatement	Meet-or-Beat
Auditor LMP	-0.018** (0.009)	-0.895** (0.378)	-0.576* (0.341)
High Market Share	-0.002 (0.003)	-0.367** (0.144)	-0.099 (0.107)
High Market Share × Auditor LMP	0.001 (0.011)	0.559 (0.430)	0.022 (0.363)
Market Share	-0.003 (0.011)	0.688** (0.337)	0.500* (0.266)
Influence	-0.003 (0.005)	0.327 (0.210)	0.108 (0.179)
Size	-0.005 (0.003)	0.013 (0.027)	0.118*** (0.022)
Leverage	-0.034*** (0.009)	0.087*** (0.028)	0.075 (0.047)
ROA	-0.066*** (0.021)	-0.140 (0.273)	0.402* (0.219)
CAPEX	0.115*** (0.029)	0.774 (0.899)	-1.275* (0.723)
Ret Vol	0.113*** (0.023)	0.280 (0.700)	-4.464*** (0.644)
BTM	0.001 (0.003)	0.454*** (0.125)	1.501*** (0.099)
Sales Growth	0.012** (0.005)	0.270* (0.139)	-0.176 (0.128)
Unemployment Rate	0.001 (0.001)	-0.048 (0.032)	0.009 (0.025)
ICW	-0.006* (0.003)	1.255*** (0.114)	0.270** (0.124)
Real GDP	0.002 (0.009)	0.014 (0.120)	0.049 (0.103)
Foreign	-0.002 (0.005)	0.126 (0.096)	-0.000 (0.078)

Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	12668	12668	12650
Adjusted R ² / Pseudo R ²	0.340	0.068	0.116

Table 10. Placebo Tests

Table 10 reports the results of a placebo test, in which auditor labor market power is estimated using job postings from the advisory department of audit firms. In Column (1), the dependent variable is *Abs(DA)*, the absolute value of discretionary accruals from modified-Jones model. In Column (2), the dependent variable is *Restatement*, a dummy variable that equals one if fiscal year t overlaps with a restated period identified in Audit Analytics database, and zero otherwise. In Column (3), *Meet-or-Beat* is a dummy variable that equals one if the client meets or beats the zero earnings per share benchmark by or within 5 cents, and zero otherwise. *Advisory LMP* is the labor market power of the advisory department of auditor, calculated as the fraction of job postings with titles containing “advisory”, “consulting”, “consultant”, or “advisor” in the CBSA where the auditor office is located. We control for client company, auditor, and year fixed effects in Column (1) and client industry, auditor, and year fixed effects in Columns (2) and (3). Standard errors are clustered at the client company level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

Variables	(1) Abs(DA)	(2) Restatement	(3) Meet-or-Beat
Advisory LMP	-0.001 (0.004)	0.209 (0.165)	-0.004 (0.134)
Market Share	-0.010 (0.012)	-0.175 (0.336)	0.217 (0.253)
Influence	-0.004 (0.007)	0.198 (0.262)	0.295 (0.214)
Size	-0.005 (0.003)	-0.002 (0.028)	0.129*** (0.023)
Leverage	-0.026*** (0.009)	0.093*** (0.029)	-0.035 (0.022)
ROA	-0.064*** (0.022)	-0.192 (0.276)	0.472** (0.225)
CAPEX	0.133*** (0.031)	0.666 (0.894)	-1.291* (0.759)
Ret Vol	0.114*** (0.024)	-0.318 (0.734)	-3.975*** (0.656)
BTM	-0.000 (0.004)	0.516*** (0.129)	1.565*** (0.103)
Sales Growth	0.010** (0.005)	0.212 (0.140)	-0.250* (0.134)
Unemployment Rate	0.002* (0.001)	-0.029 (0.033)	-0.009 (0.026)
ICW	-0.006 (0.004)	1.282*** (0.118)	0.286** (0.128)
Real GDP	-0.004 (0.010)	-0.035 (0.121)	0.047 (0.104)
Foreign	0.002 (0.006)	0.139 (0.102)	-0.032 (0.081)
Client Company FE	Yes	No	No
Client Industry FE	No	Yes	Yes
Year FE	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
N	11691	11691	11685
Adjusted R ² / Pseudo R ²	0.337	0.066	0.119

Table 11. Auditor Labor Market Power and Audit Fees

Table 11 reports the regression results of audit fees on auditor labor market power. In Column (1), the dependent variable is $\ln(\text{Audit Fees})$, the natural logarithm of audit fees for a given client and year. In Column (2), the dependent variable is $\ln(\text{Tax Fee})$, the natural logarithm of tax fees for a given client and year. *Auditor LMP* is the labor market power of the client's audit office, calculated as the fraction of job postings in the CBSA where the auditor office is located. Standard errors are clustered at the client company level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

Variables	(1) Ln(Audit Fees)	(2) Ln(Tax Fees)
Auditor LMP	-0.069*** (0.026)	-0.144 (0.116)
Size	0.368*** (0.014)	0.494*** (0.061)
Leverage	0.110*** (0.034)	0.134 (0.136)
ROA	-0.277*** (0.037)	-0.402*** (0.155)
CAPEX	0.025 (0.108)	-0.068 (0.455)
Ret Vol	0.209*** (0.070)	-0.139 (0.286)
BTM	-0.021 (0.013)	-0.034 (0.054)
Sales Growth	0.029** (0.014)	0.035 (0.059)
ICW	0.135*** (0.022)	0.048 (0.067)
Foreign	0.046*** (0.017)	0.156** (0.078)
Market Share	0.063 (0.047)	-0.116 (0.224)
Influence	0.000 (0.020)	0.017 (0.092)
Unemployment Rate	0.001 (0.005)	-0.014 (0.020)
Real GDP	0.007 (0.044)	-0.490*** (0.151)
Client Company FE	Yes	Yes
Year FE	Yes	Yes
Auditor FE	Yes	Yes
N	12581	9518
Adjusted R ²	0.955	0.762

Table 12. Auditor Labor Market Power and Growth in Market Share

Table 12 reports the regression results of growth in market share on auditor labor market power and control variables. The dependent variable in Column 1 (Column 2) is the year-to-year percentage change in the fee-based (#clients-based) market share, *Market Share Growth (Market Share Growth (#Clients))*, which is defined as the fraction of audit fee (the number of clients) in the CBSA to which the audit office belongs. *Auditor LMP* is the labor market power of the client’s audit office, calculated as the fraction of job postings in the CBSA where the auditor office is located. We control for auditor and year fixed effects in both columns. Standard errors are clustered at the audit office level and reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All other variables are defined in Appendix A.

Variables	(1) Market Share Growth	(2) Market Share Growth (#Clients)
Auditor LMP	0.188*** (0.063)	0.083* (0.044)
Market Share	-0.345*** (0.057)	
Market Share (#Clients)		-0.223*** (0.045)
Average City Leader	0.059*** (0.018)	0.033** (0.015)
Average National Leader	-0.011 (0.018)	-0.011 (0.013)
Office Importance	0.190 (0.200)	0.487*** (0.125)
Unemployment Rate	0.003 (0.006)	0.002 (0.004)
Real GDP	-0.118*** (0.036)	-0.171*** (0.024)
Auditor FE	Yes	Yes
Year FE	Yes	Yes
N	1597	1597
Adjusted R ²	0.106	0.090