Regulatory Oversight and Auditor Market Share

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***Abstract**:* We examine whether auditor regulatory oversight affects the value of financial statement audits. Using the PCAOB international inspection program as a setting to generate *within country variation* in regulatory oversight, we find that non-U.S. auditors inspected by the PCAOB gain 4 to 6% market share from competing auditors after PCAOB inspection reports are made public. When inspection findings reveal that an auditor has many engagement-level deficiencies, market share gains following inspection reports are significantly smaller. Our evidence suggests that regulatory scrutiny increases the assurance value of an audit and highlights the role of public regulatory oversight in the audit market.

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1. Introduction

An independent audit is a primary mechanism through which companies assure investors of the reliability and accuracy of their financial statements. Yet, much of the audit process is unobservable to investors, making it difficult for them to assess the quality of an audit. In addition, auditors are typically hired, and paid for, by the very companies whose financial statements they are supposed to verify, potentially threatening auditor independence. Under such circumstances, theory suggests that a public regulator can increase the value of an audit by inspecting the work performed by auditors and ensuring that the audit process conforms to certain standards of quality and independence (Landes and Posner, 1975; Polinsky, 1980; Prichard, 2006; Coates, 2007). However, whether greater regulatory oversight increases the value of an audit is ultimately an empirical question. Specifically, the effectiveness of a public regulator depends on the regulator's incentives, competence, and some assurance that the regulator is not captured by special interest groups (Stigler, 1971; Mahoney, 2001).

In this paper, we examine whether regulatory oversight of auditors increases the perceived value of their audits. Specifically, we investigate whether the auditors subject to oversight by a public regulator observe an increase in their market share following the inception of such oversight relative to their competitors who are not subject to similar oversight.[1] Our intuition is that if clients (i.e., auditees and investors) perceive the audits performed by auditors subject to greater regulatory oversight as providing greater assurance than those performed by auditors with lesser regulatory oversight then the demand for audits from the former group will increase. Nevertheless, ex ante there are at least two reasons why greater regulatory oversight might not increase an auditor's market share even if it increases the perceived value of an audit. First, the company management or the board of directors that make the decision to hire an auditor might be unwilling to hire auditors subject to greater regulatory scrutiny because such

[1] The value of an audit is not directly observable but differences in value manifest as either differences in audit fees or differences in auditor market share. Ideally, we would like to examine the effect of regulatory oversight on both audit fees and market share. However, our focus in this paper is on the effect of regulatory oversight on auditor market share because audit fee data are not available in our setting.

auditors might constrain managers' ability to extract private benefits from their companies. In other words, the demand for high quality audits could be dampened by the company insiders' incentives to protect their private benefits of control. Second, auditors subject to greater regulatory oversight might respond to increases in the assurance value of their audits by increasing audit fees such that there is no increase in market share.

Testing whether regulatory oversight affects the value of an audit and thus an auditor's market share is challenging because, typically, all auditors that compete to provide audit services in a market are subject to the same level of regulatory oversight. As a result, in most cases there is no variation in the amount of regulatory oversight auditors are subject to within an audit market. We overcome this empirical challenge by identifying a setting where the auditors competing within a market (defined as a country) are subject to different levels of regulatory oversight over time. Specifically, we exploit variation in regulatory oversight generated by the Public Company Accounting Oversight Board's (PCAOB's) international inspection program.

Non-U.S. auditors that participate in the audit of a company registered with the U.S. Securities Exchange Commission (SEC) are subject to PCAOB oversight. Thus, such non-U.S. auditors that have one or more SEC registered companies as audit clients are subject to greater regulatory oversight than their peers who do not participate in the audit of any SEC registered company.[2] We use the variation in regulatory oversight created by PCAOB inspections of non-U.S. auditors to test whether PCAOB inspected auditors gain market share after their inspections from other auditors operating in the same country who are not inspected by the PCAOB.

We measure an auditor's market share as the number of public companies it audits in a year scaled by the total number of public companies in the country for that year. We employ both equal weighted and value weighted measures to capture auditor market share. To mitigate

[2] PCAOB oversight includes periodic inspections of auditors' firm-wide practices and policies on compensation, promotion, client acceptance and retention, internal inspection, training and audit methodology. As a result, PCAOB inspections potentially increase regulatory oversight of all audits conducted by non-U.S. auditors and not just those of SEC registered clients. Supporting this argument, concurrent research finds that PCAOB inspections increase the reporting quality of both SEC registered and local clients of non-U.S. auditors (Fung et al., 2015; Shroff, 2015).

concerns that time invariant auditor characteristics or measurement error in our market share proxies affect our inferences, we employ a first differences research design that focuses on *changes* in auditor market share. As a result, the effect of auditor characteristics, such as reputation and litigation that are fairly stable from year-to-year, on auditor market share are differenced away in our analyses. In addition, we include indicator variables for each auditor and each country-year combination (i.e., country *times* year fixed effects) in all our analyses. These fixed effects control for all time-invariant auditor characteristics that affect changes in market share and all time varying and time invariant country-level factors that affect the local audit market conditions (e.g., GDP growth, local regulatory changes, etc.). Overall, the 'changes' research design along with the fixed effects structure makes it unlikely that our inferences are affected by correlated omitted variable biases. Figures 1 and 2 graphically illustrate our design.

Using data from 36 countries over the period 2003 to 2013, we find that the change in auditor market share is significantly greater in the year after an auditor's PCAOB inspection report is released to the public compared to the change in market share for the same auditor in other years and the change in market share for auditors not inspected by the PCAOB that year. These results support our prediction that PCAOB oversight increases the assurance value of an audit, which then increases the market share of auditors subject to such oversight. In economic terms, our coefficients imply that the average auditor's market share increases by 3.5 to 6.4% after the disclosure that the auditor was inspected by the PCAOB.

A potential concern with our analyses is that auditors subject to PCAOB oversight could be systematically different than auditors not subject to PCAOB oversight, which could have systematic effects on auditor market share changes even within a country. To mitigate such concerns, we repeat our analyses on a sample of auditors that are *all* inspected by the PCAOB. Such a design is feasible because all non-U.S. auditors (except the Canadian big four) have been subject to triennial (rather than annual) inspections, thereby creating differences in the timing of auditor inspections within each country (see Figure 2). Our tests exploit the staggering of

PCAOB international inspections to mitigate concerns about selection. Using this staggered design, we again find that non-U.S. auditors gain market share following the public disclosure of their inspection. The economic magnitude of the inspection effect in this restricted sample is very similar to that observed in the full sample. Specifically, non-U.S. auditors observe a 4 to 7% increase in their market share once their inspections are made public. Figure 3 plots the changes in market share in the years before and after PCAOB inspections.

Next, we exploit variation in the content of the PCAOB inspection report and examine whether auditors that have a large number of engagement level deficiencies (i.e., Part I Findings) experience any increase in market share following their inspection. If clients and investors use the information in PCAOB inspection reports to distinguish between auditors supplying high vs. low quality audits, we expect to find that auditors with a large number of Part I Findings observe a smaller increase in their market share once the inspection report is public.[3] This is exactly what we find; auditors with a large number of Part I Findings observe a significantly smaller increase in market share following the disclosure of their PCAOB inspection report. By tying change in auditor market share to the content of the inspection reports, this test further alleviates any concern that confounding factors or correlated omitted variables drive our results.

In cross-sectional tests, we examine the effect of PCAOB inspections on auditor market share at the industry-level. Since the PCAOB inspects only the audit engagements of *SEC registered clients* of non-U.S. auditors, we expect the benefit of PCAOB oversight for non-U.S. auditors to be greater in industries where non-U.S. auditors have more SEC registered clients. We find evidence consistent with this prediction.

We also examine whether the presence of a local auditor regulator or a local inspection program affects the value of PCAOB oversight. We find largely insignificant evidence that local inspection programs (or local audit regulators) lower the value of PCAOB oversight. One *potential* reason for the lack of substitutability between local regulatory oversight and PCAOB

[3] The PCAOB also evaluates auditors' quality control systems and can raise concerns about these systems (via a Part II Finding). However, Part II Findings are redacted from the inspection report when it is initially disclosed.

oversight could be that most non-U.S. inspection programs do not publicly disclose *individual* audit firms' inspection reports and the auditors' engagement-level or quality control deficiencies.

Finally, we conduct a number of additional tests (tabulated in the online appendix) to provide richer insights into the effect of PCAOB regulatory oversight on auditor market share changes. First, we document modest evidence that the effect of PCAOB oversight on changes in auditor market share is greater in corrupt countries and countries with weak rule of law. This evidence is consistent with PCAOB oversight being more valuable in countries where reputation and litigation incentives to provide high quality audits are low. Second, we test and find that the effect of PCAOB oversight on auditor market share persists from the first to subsequent inspections, which we interpret as evidence consistent with *non-U.S.* clients and investors only gradually learning about the PCAOB and its effectiveness as a public regulator. Lastly, we examine whether auditors *publicly* criticized by the PCAOB for having un-remediated quality control deficiencies (via a Part II Finding) observe a change in market share when (i) the initial inspection reports are made public but the Part II Findings are non-public, and (ii) when quality control criticisms are publicly disclosed in the inspection reports.[4] We find no significant evidence that Part II Findings affect market share.

Our paper contributes to a growing body of research on the economic effects of the PCAOB on the audit market. Specifically, Nagy (2014) finds that quality control deficiencies (Part II Findings) disclosed in PCAOB inspection reports are associated with a reduction in market share.[5] However, Lennox and Pittman (2010) find that engagement-level deficiencies (Part I Findings) disclosed in PCAOB inspection reports are not associated with changes in auditor market share. These studies are conducted in a U.S. setting where all public company

[4] PCAOB inspection reports do not publicly disclose an auditor's quality control deficiencies if the auditor addresses the PCAOB's concerns within one year of the issuance of the inspection report (SOX Section 104). However, if an auditor does not satisfactorily address the PCAOB's quality control criticisms within one year following the release of its inspection report, these criticisms can be made public via an updated inspection report.

[5] In related work, Boone et al. (2015) find that PCAOB's disciplinary order against Deloitte in 2007 decreased Deloitte's ability to retain and attract clients. Boone et al. (2015) examine the effect of one specific PCAOB enforcement action on auditor market share, but not PCAOB inspections or the content of inspection reports.

auditors are subject to PCAOB oversight. Thus, these studies exploit cross-sectional variation in the contents of inspection reports to make inferences about the value of PCAOB oversight. Our paper contributes to the literature by showing that PCAOB inspections are associated with an increase in market share for non-U.S. auditors. To the best of our knowledge, ours is the first paper to examine the effect of PCAOB oversight on auditor market share in an international setting where there is variation in whether a public company auditor is inspected by the PCAOB. This examination broadens our understanding about the value of PCAOB inspections by showing that receiving a clean inspection report can *increase* an auditor's market share, presumably because it lowers concerns about auditor independence and competence.[6]

Our paper also contributes to the literature by showing that PCAOB inspections have spillover effects on non-U.S. auditors and *non-SEC registered clients*. The PCAOB does not inspect the audits of non-SEC registered clients and yet we find that non-SEC registered clients switch to PCAOB inspected auditors; thus our evidence suggests that the benefit of PCAOB oversight extends beyond audit engagements it directly regulates. This finding is important because it helps us better understand the total benefit of PCAOB oversight. In addition, the PCAOB inspects only a subset of the audit engagements of SEC registered clients for a given auditor, implicitly relying on such spillover effects to exist. Concurrent work by Aobdia (2015a, b), Fung et al. (2015) and Shroff (2015) also provide evidence of spillover effects of PCAOB inspections on non-inspected clients' earnings quality. Collectively, these findings suggest that PCAOB inspections serve as certification that a minimum quality threshold is met in all audits performed by inspected auditors and not just those engagements selected for inspection. Given the resources devoted to the PCAOB inspection program (e.g., just the direct expenses were

[6] In a related study, Abbott et al. (2013) document an association between auditor dismissals and existence of at least one GAAP (but not GAAS) deficiency in the auditors' PCAOB inspection report in the U.S. However, the paper does not identify whether the clients whose audits received the GAAP deficiencies are the ones dismissing their incumbent auditor or whether PCAOB inspection reports serve as an indicator of audit quality among clients whose audit engagements are not selected for inspection by the PCAOB.

$136 million in 2014) and the widespread skepticism about its value,[7] additional research providing new evidence on the value of PCAOB inspections (or the lack thereof) is important.[8]

At a broader level, our paper contributes to the debate in the literature about whether public regulatory oversight is beneficial or not. La Porta et al. (2006) provide evidence suggesting that private enforcement of securities laws has a much larger benefit on stock market development than public enforcement such as that by the PCAOB. However, Jackson and Roe (2009) subsequently show that public oversight is also important for stock market development. Properly assessing the value of public and private oversight has important implications for what strengthens financial markets. For example, the World Bank has been seeking to strengthen global financial markets and has largely dismissed public oversight of securities laws as being unimportant, while identifying private oversight as central (World Bank, 2006, pp. 1, 5-6). Our evidence highlights the importance of public oversight in the auditing process, one which is central to the development of capital markets. An advantage of our analyses relative to papers such as La Porta et al. (2006) and Jackson and Roe (2009) is that in our setting the level of public oversight (i.e., PCAOB oversight) is constant across countries and as such unlikely to be affected by cross-country differences in other institutional characteristics. In contrast, inferences in prior research are subject to the possibility that public oversight is endogenously affected by other institutional features of the country such as corruption, regulatory quality, etc.

Before proceeding, we caveat that our analyses do not factor in the cost of PCAOB oversight. Thus our results cannot be used to make policy prescriptions that require consideration of both the costs and benefits of regulation. In addition, we caveat that our analyses are based on

[7] For example, J. Michael Cook, the former CEO of Deloitte and the member of several public company boards commented that "I think the [PCAOB inspection] process is well intended, and it is helpful and constructive, but right now it is not producing the kind of results that it should for people who are using the results and trying to understand what this means." (see: http://ww2.cfo.com/accounting-tax/2007/01/why-the-big-four-are-still-a-big-mystery/). Similar skepticism about the value of PCAOB inspections is raised by Hodowanitz and Solieri (2005), Palmrose (2006), and Hilzenrath (2010) among others.

[8] A related stream of research examines the costs and benefits of PCAOB inspections to the clients of auditors inspected by the PCAOB (see e.g., Gipper et al., 2016; Krishnan et al., 2016; Lamoreaux, 2016). Our paper differs from this line of work by focusing on the effect of PCAOB inspections on the *auditor* rather their clients. See Abernathy et al. (2013), DeFond and Zhang (2014) and Donovan et al. (2014) for reviews of the literature.

PCAOB oversight and our inferences might not extend to public regulators more generally. We need more research to assess the generalizability of PCAOB oversight to other regulators as well as research estimating the direct and indirect costs of such regulatory oversight.

2. Institutional setting and hypotheses

2.1. PCAOB international inspections and related research

One of the core provisions of the Sarbanes-Oxley Act (SOX) was to create the PCAOB to oversee and regulate auditors of public companies. Section 104 of SOX requires the PCAOB to inspect the auditing procedures of *all auditors* that materially participate in auditing financial statements prepared by SEC registered companies. Thus, non-U.S. auditors of SEC registered companies located abroad are subject to PCAOB inspections (e.g., the non-U.S. auditors of companies cross-listed in the U.S. and non-U.S. auditors of a U.S. multinational corporation's foreign affiliate). Under SOX and the PCAOB's rules, these non-U.S. auditors are subject to PCAOB inspections in the same manner as U.S. auditors. Auditors that are involved in the audits of more than 100 SEC registered companies are subject to annual inspections and the remaining auditors of SEC registered companies are subject to inspections that are at least triennial. As of 2014, the Canadian big-four auditors are the only annually inspected non-U.S. auditors.

PCAOB inspections involve two components. One component involves an analysis of the audit work papers of a subset of audits chosen from the list of SEC registered clients of the auditor. The other component involves an examination of the auditor's firm-level quality control systems. The typical inspection begins with the PCAOB staff notifying the audit firm of when it plans to conduct the inspection and requesting information such as the list of SEC registered companies audited, the personnel performing those audits, and the audit firm's quality control program (see Center for Audit Quality, 2012). PCAOB inspectors spend, on average, one to two weeks at the offices of the triennially-inspected audit firm to conduct their inspection.[9] During this period, inspectors engage in active dialogue with the members of the engagement teams that

[9] The inspections of annually-inspected auditors typically take much longer.

performed the inspected audits, to determine whether these were performed in accordance with PCAOB standards. The inspectors discuss any concerns they have with the auditors and allow them the opportunity to respond. If the inspectors' concerns cannot be resolved through discussion, the inspection team issues a "comment form" requesting the audit firm to respond in writing to those concerns. The comment form process provides a formal opportunity for the audit firm to present its views on aspects of the audit engagement that the inspectors have questioned (Center for Audit Quality, 2012). Similarly, every PCAOB inspection report that includes a quality control criticism alerts the audit firm to the opportunity to prevent the criticism from becoming public. The inspection report specifically encourages the firm to initiate a dialogue with the PCAOB's inspection staff about how the audit firm intends to address the criticisms (see PCAOB Release No. 104-2006-077 for details).

The PCAOB inspectors prepare a written report on the inspection once it is complete. Although inspected auditors have access to this report, only a portion of the report (which includes descriptions of deficiencies found within the sample of audit engagements examined) is made public.[10] The public portion of the report does not disclose any deficiencies in the quality control systems of the auditor as long as the auditor addresses any concerns raised by the PCAOB within one year of the issuance of the inspection report (SOX Section 104).

PCAOB inspectors do not examine the audit engagements of any non-U.S. client of an auditor (i.e., clients that are not registered with the SEC). However, PCAOB oversight can still affect the audits of non-U.S. clients via two channels. First, PCAOB inspections include an evaluation of the auditor's firm-wide quality control practices that can affect all audits performed by the auditor (e.g., Aobdia, 2015b; Shroff, 2015; Gipper et al., 2016). For example, PCAOB inspectors review auditors' policies and procedures concerning partner compensation, promotion and discipline, compliance with independence requirements, client acceptance and retention, and the audit methodology among other things. The purpose of an inspection of the quality control

[10] Part I of the report describes deficiencies identified within the sample of audit engagements examined. Therefore such deficiencies are commonly named "Part I Findings".

practices is to evaluate whether auditors have systems in place and incentive structures that promote independence and rigor (PCAOB Annual Report, 2012). Such quality control systems typically affect all audit engagements of an auditor. Thus, if external stakeholders believe that PCAOB inspections improve a non-U.S. auditor's quality control systems (or serve as certification that a minimum quality threshold has been met), then the PCAOB inspection can increase the perceived value of audits conducted by non-U.S. auditors.

Second, PCAOB inspections of specific audit engagements can have spillover effects on the audit engagements of other clients, including an auditor's non-U.S. clients. Gipper et al. (2016) discuss an anecdote where the PCAOB identified five engagement deficiencies during its inspection of Deloitte in 2004, which subsequently led Deloitte to undertake a firm-wide review of its auditing practice related to the deficiency. This firm-wide review by Deloitte identified the same error in three additional audit engagements (see Gipper et al. 2016 for additional examples). Concurrent research also provides large sample evidence that PCAOB inspections not only affect the audit engagements chosen for inspection but also have spillover effects on the engagements of other clients whose audits are not inspected by the PCAOB. Specifically, Aobdia (2015a) uses confidential PCAOB data on the identities of the clients whose audit engagements are selected for inspection and shows that PCAOB inspections affect the audit engagements of other clients whose audits are not chosen for inspection. Fung et al. (2015) and Shroff (2015) find that PCAOB inspections of non-U.S. auditors have spillover effects on the reporting quality and investment decisions of the non-U.S. clients of these auditors. Overall, prior research and the scope of a PCAOB inspection suggest that the inspections are likely to affect all audit engagements of an auditor, not simply those audit engagements selected for PCAOB review.

A growing body of prior research examines the effect of PCAOB inspections on auditors, clients and investors. Early evidence, most notably, Lennox and Pittman (2010) finds that PCAOB inspections are less informative about audit quality than the peer-review system that it

replaced.[11] However, subsequent research finds evidence that PCAOB inspections improve clients' audit quality and generates significant capital market benefits. Specifically, Fung et al. (2015), DeFond and Lennox (2016), Krishnan et al. (2016), and Lamoreaux (2016) provide evidence, both within and outside the U.S., that PCAOB inspections affect a number of proxies for audit quality. Other studies find that clients are more likely to switch auditors (in a U.S. setting) when the PCAOB inspections result in either engagement level criticisms or publicly disclosed quality control criticisms (e.g., Nagy, 2014; Aobdia, 2015a). Finally, Shroff (2015) and Gipper et al. (2016) find that PCAOB inspections increase clients' financial reporting credibility. Collectively, prior research suggests that PCAOB inspections improve audit quality and that PCAOB criticisms, especially Part II Findings, affect auditor market share. The evidence on whether Part I Findings affect auditor market share in the U.S. is mixed.

Our paper differs from prior research in two ways. First, ours is the first paper to examine the effect of PCAOB oversight on auditor market share in a non-U.S. setting. This examination furthers our understanding about the value of PCAOB inspections by showing that in a setting where some auditors are PCAOB inspected and others are not, inspected auditors with a clean inspection report gain market share from those not inspected by the PCAOB, while auditors with many Part I Findings in their inspection report observe smaller changes in market share (in contrast to the U.S. evidence). Since prior research is conducted in a U.S. setting where all public company auditors are subject to PCAOB inspections, the analyses in prior research can only draw on variation in the content of the inspection report. The non-U.S. setting also allows us to investigate how cross-country differences in institutional features (e.g., corruption, local regulatory regimes) interact with PCAOB oversight. Second, our interest lies in whether PCAOB oversight has spillover effects on the non-U.S. clients (i.e., clients not registered with the SEC)

[11] Specifically, Lennox and Pittman (2010) find that auditors do not gain (lose) clients after receiving a positive (negative) PCAOB inspection report, suggesting that the PCAOB reports do not provide a meaningful information about audit quality. Yet, Hilary and Lennox (2005) find that auditors lose clients after negative peer-review reports under the previous AICPA-sponsored peer-review regime. Similarly, Casterella et al. (2009) find that peer-review reports from the AICPA regime are associated with audit quality proxies and help predict audit failure.

of non-U.S. auditors, which is in contrast to related studies such as Lennox and Pittman (2010), Nagy (2014), and Aobdia (2015a) that examine U.S. auditors and their SEC registered clients.

2.2. Hypothesis development

The primary purpose of an audit is to assure outside investors that a company's financial statement disclosures faithfully represent the financial condition of a company considering that there are numerous agency problems between managers and outside investors (Jensen and Meckling, 1976). However, there are also agency conflicts between managers and auditors, and thus the assurance value of an audit critically depends on the perceived independence of the auditor as well as the effort auditors put into the audit process (Watts and Zimmerman, 1983). Specifically, the audit process is unobservable and largely a black box to investors. In most cases, investors only observe whether the audited company received a clean audit report or a report with some additional language (e.g., qualified opinion). Thus, investors heavily rely on an auditor's private incentives (e.g., its reputation and litigation risk) to exert effort and stay independent of management.

There is a long-standing literature examining the factors that motivate auditors to perform thorough audits and remain independent of their clients. Prior research identifies two primary incentives that motivate auditors: reputation and litigation. If auditors are legally liable for audit failures, then they have an incentive to deliver high-quality audits to avoid the costs of litigation (e.g., Dye, 1993). Similarly, auditors have reputational incentives to avoid audit failures because investors (and thus audit clients) value audit quality. As a result, clients are more likely to switch auditors if their existing auditor's reputation for quality deteriorates. Prior research finds that auditors try to manage their litigation risk by increasing effort (e.g., Simunic, 1980), avoiding risky clients (e.g., Shu, 2000), and charging an audit fee premium (e.g., Badertscher et al., 2014). Yet, the evidence in Lennox and Li (2012) among others casts doubt on whether litigation risk affects audit quality. Similarly, research dating back to DeAngelo (1981) and Easterbrook and Fishel (1984) and many subsequent studies (e.g., Weber et al., 2008; Skinner and Srinivasan,

2012) find that reputation concerns incentivize auditors to perform thorough audits. But here too, the evidence on the importance of reputation in incentivizing high quality audits is mixed (e.g., Khurana and Raman, 2004). In the end, while reputation and litigation can serve as incentives for auditors to provide high-quality audits, in the absence of audit failures that result in restatements and/or lawsuits, investors and clients are never really certain of the audit quality they receive from their auditor. Similarly, auditors also have limited ability to *ex ante* differentiate themselves on the basis of the quality they supply (Donovan et al., 2014). Thus, despite auditors' private incentives to provide high quality audits, auditor independence and rigor is often uncertain.

Under such conditions, research in regulatory economics suggests that public oversight can mitigate agency problems in auditing and reassure investors/clients that their auditors meet a certain minimum level of audit quality. Specifically, as discussed by Polinsky (1980) and Pritchard (2006), a public regulator can (i) gain confidential access to the auditor's work papers and provide a more precise evaluation of the quality of an auditor's work relative to that inferred from public signals of audit quality (e.g., lawsuits and restatements), (ii) examine audit procedures to determine if those procedures are likely to produce a credible attestation of the company's financial statement, and (iii) impose sanctions when the minimum standards for audit quality are not met. Further, given that the external damage from an accounting fraud is potentially large, a public regulator can increase the total amount of enforcement (even if the fines from enforcement actions do not cover enforcement costs) to deter many potential violators (Polinsky, 1980; Polinsky and Shavell, 2000).

The above said, public regulatory oversight is not without its problems and can often suffer from the same agency problems as that between auditors, clients, and investors (Stigler, 1971; Peltzman et al., 1989). For example, an important concern with public regulators is that they are susceptible to "capture" by the powerful players in the industry (e.g., the big-four auditors). Further, depending on the regulator's source of funding, it could come under political pressure that undermines its effectiveness (see Minnis and Shroff (2017) for a discussion).

We argue that the design and scope of PCAOB oversight helps increase the assurance value of an audit. Our intuition is that PCAOB inspections increase perceived audit quality by increasing investor/client confidence in an auditor's independence as well as increasing confidence that the audit work is performed thoroughly. The PCAOB's in-depth analysis of a select subset of audit engagements is geared towards identifying deficiencies in the manner in which auditors perform an audit. Further, the PCAOB inspection of auditors' quality control systems reviews audit firms' management structure, culture, partner evaluation, etc., thereby ensuring that audit firms have a commitment to integrity and independence (Aobdia, 2015b).

To ensure the PCAOB is independent of the accounting profession, Congress stated that the PCAOB would not be a government agency. The PCAOB is a nonprofit corporation given a mandate to oversee public company auditors. Two members of its five-member board must be Certified Public Accountants (CPAs), a rule intended to ensure that the PCAOB has the necessary expertise. Three board members must be independent of the accounting profession, which is intended to constrain regulatory capture from the audit industry.[12] The PCAOB's independence from the accounting industry is further bolstered by its funding sources. The first source is an annual fee paid by each PCAOB registered public accounting firm. The second source, which is substantially larger than the first, is the "annual accounting support fees" paid by public companies based on their market capitalization (e.g., in 2012 over 90% of PCAOB's budget was funded by the annual support fees [PCAOB Annual Report, 2012]). Thus, the overwhelming share of the cost of regulating auditors is paid by companies listed on U.S. exchanges. However, the SEC, a government agency, appoints the PCAOB board and the SEC must approve the PCAOB's budget, litigation, and rules.[13]

[12] PCAOB inspectors are also CPAs but are not allowed to inspect any audit firm they were employed at for 12 or more months (per the PCAOB ethics code; see https://pcaobus.org/Rules/Pages/Ethics_Code.aspx).

[13] To prevent the board coming under political pressure, board members serve staggered five-year terms, and until 2010, could only be removed for "cause," a standard designed to be difficult to show (Coates, 2007). In 2010, the Supreme Court ruled that this provision of SOX is inconsistent with the Constitution's separation of power and as a result, PCAOB Board members are now removable at will by the SEC (see: http://pcaobus.org/News/Releases/Pages/06282010_SupremeCourtDecision.aspx for more details).

In sum, we hypothesize that PCAOB oversight via its inspections increases investor confidence that auditors are diligent in their examination of their clients' financial statements and have systems in place to stay independent of the client, thereby increasing the perceived quality of an audit. This increase in the perceived value of an audit translates into greater market share for PCAOB inspected auditors at the expense of those not subject to inspections.

H: PCAOB inspected auditors gain market share from those not inspected by the PCAOB.

Despite the above arguments, we recognize that there are at least a few reasons why PCAOB oversight might not increase the value of an audit or an inspected auditor's market share. First, despite the provisions in place to ensure that the PCAOB, as a regulatory body, is independent of the auditing profession and not susceptible to political pressure, it is unclear whether this is *de facto* the case. Insofar as the PCAOB is unable to conduct independent auditor inspections without political pressure, the value of PCAOB inspections could be small. Second, clients might prefer to be audited by an auditor with laxer regulatory oversight such that they have greater ability to manage earnings or take other actions to retain their private benefits of control. Third, investors and clients of non-U.S. auditors might have lower awareness about the activities of U.S. regulators such as the PCAOB, which could mitigate the extent to which PCAOB oversight helps non-U.S. auditors gain market share away from their competitors not subject to such oversight. Fourth, many countries have a local auditor inspection program as well as a local regulator to oversee auditors. It is plausible that PCAOB oversight does not have any incremental value in the presence of a local audit regulator. Finally, even if PCAOB oversight increases the perceived value of an audit, the auditors subject to such oversight might respond by increasing the fees they charge to clients, thereby pricing the increase in the assurance they provide. If so, such fee increases could offset any increase the demand for their audit services.

3. Data sources and sample selection

We begin our sample construction by obtaining the complete list of non-U.S. companies with non-missing identifier information (i.e., GVKEYs) on Compustat Global and Compustat

North America (the latter for Canadian companies). We then hand collect the names of these companies' auditors from S&P Capital IQ. We use Capital IQ data to gather auditor identities rather than Compustat Global because prior research finds that the auditor identities are often incorrect on Compustat Global (Francis and Wang, 2008; Shroff, 2015). Further, more than 60% of auditors are classified in a generic "others" category in the Compustat Global database. Next, we manually clean the auditor names for the entire sample of company-year observations (since auditor names are not uniformly coded in Capital IQ) and construct a database of company-auditor-year observations. The above data requirements result in a sample of 301,542 company-year observations from 125 countries over the period 2003 to 2013.

We then aggregate data at the company-year level to form unique auditor-year observations, which results in an initial sample of 45,798 observations at the auditor-year level. We merge these auditor-year observations with data on PCAOB inspections that are hand collected from the PCAOB's website.[14] We obtain data on the number of Part I Findings identified in PCAOB inspection reports from Audit Analytics. Restricting our sample to include only those countries with at least one PCAOB inspected auditor leaves us with a sample of 30,917 auditor-year observations from 36 countries. Dropping observations with missing data for the dependent or independent variables result in a final sample of 23,829 auditor-year observations representing 203,566 company-year observations. Of these, 1,685 auditor-year observations, representing 114,248 company-year observations, relate to auditors inspected by the PCAOB at least once during our sample period.[15] Table 1 outlines the sample selection procedure in detail.

In Table 2, we present the distribution of company-year and auditor-year observations by each country (Panel A) and year (Panel B) in our sample. We present the number of observations

[14] See: http://pcaobus.org/International/Inspections/pages/internationalinspectionreports.aspx

[15] The majority of the PCAOB inspected auditors are big four affiliates. Thus, in subsequent tests, we do not examine cross-sectional variation in the impact of PCAOB inspections on auditors based on big-four status.

for our full sample that includes both PCAOB inspected auditors and those never inspected, as well as the number of observations in a sample restricted to auditors inspected by the PCAOB at least once. Table 2 also presents the number of PCAOB inspections conducted, the number of un-remediated quality control deficiencies disclosed as a Part II Finding, and the percentage of engagement deficiencies (Part I Findings) in inspection reports by country and by year.[16] The table reveals some interesting patterns. India represents 13% of the company-year observations but makes up 48% of the auditor-year observations, suggesting that that the audit market is quite fragmented in India. In contrast, observations from countries such as Japan, the U.K., and Australia make up 7 to 15% of the company-year observations in our sample and 3 to 7% of the auditor-year observations, which indicates that the audit market is fairly consolidated in these countries.[17] The table also shows that Canadian auditors, in aggregate, are subject to the largest number of PCAOB inspections, followed by auditors in Israel, Mexico, Australia and Brazil.

4. Research design and results

4.1. Research design

We estimate regressions of the following form to test our hypothesis:

$$\Delta Market\ Share_{i,t+1} = \alpha_i + \alpha_t \times \alpha_c + \beta_1\ INSPECTION_{i,t} + \beta_2\ REPORT_{i,t} + \gamma' X + \epsilon_{i,t} \quad (1)$$

where *i*, *t*, and *c* indexes audit firms, years, and countries, respectively; *ΔMarket Share* is the change in auditor market share (discussed below); α_i, α_t and α_c are firm, year and country fixed effects, respectively; *INSPECTION* is an indicator variable that equals one for auditor-years in which a PCAOB inspection occurs and *REPORT* is an indicator variable that equals one for auditor-years in which PCAOB inspection reports become publicly available via the PCAOB website. We examine market share changes in the year following the inspection and its public

[16] Note that the number of inspections in our sample (340) is greater than the number of inspection reports in our sample (250) because our market share data ends in 2013 and many of the inspections that occur in 2011 and 2012 are not disclosed until after 2013. Also, Panel B shows that our sample ends in 2012 (rather than 2013). This occurs because we require an additional year of data to compute auditor market share changes (from period t to t+1).

[17] Given that observations from India represent a large portion of our sample, we verify that all our inferences are robust to dropping India from our analyses.

disclosure because ex ante it is unclear when clients and investors would respond to the increase in auditor oversight. *X* is a vector of controls. Standard errors are clustered at the auditor level.

We use four proxies for the change in auditor market share. Our first proxy, *ΔMKT SHARE*, is simply the change in the number of public clients audited by an audit firm from year *t* to year *t+1* scaled by the total number of public clients in the country in year *t*. The second proxy, *ΔMKT SHARE AW*, weights each client by its assets. That is, *ΔMKT SHARE AW* is the change in the value weighted market share of an auditor from year *t* to *t+1*, where the value weighting is based on client size measured as total assets. Computationally, an auditor's market share in a given year equals the sum of the assets of the public clients audited divided by the sum of the assets of all public firms in the country. We use all companies in Capital IQ with valid auditor information to compute market share.

Our final two proxies for changes in auditor market share, *ΔMKT SHARE OF NON SEC REGISTERED CLIENTS* and *ΔMKT SHARE AW OF NON SEC REGISTERED CLIENTS*, are analogous to the first two proxies but the public companies used to measure market share are restricted to those not cross-listed in the U.S. or otherwise registered with the SEC. That is, *ΔMKT SHARE OF NON SEC REGISTERED CLIENTS* is the change in the number of non-SEC registered public clients audited from year *t* to year *t+1* scaled by the total number of non-SEC registered public clients in the country in year *t*. The purpose of separately measuring an auditor's market share of non-SEC registered clients is to mitigate concerns that our results are affected by companies cross-listing in the U.S. during our sample period.

The coefficients of interest in equation 1 are β_1 and β_2, which capture the change in auditor market share in the year following a PCAOB inspection and the year following the public release of the auditor's inspection report, respectively. We separately examine market share changes at the time of the inspection and the subsequent report release date because auditors (obviously) know when their inspections are completed and might begin advertising to

prospective clients that they are PCAOB inspected to gain market share even before the inspection report becomes public. However, to the extent investors/clients wait until they observe an auditor's inspection report, we might not observe market share changes until after the report becomes public (see Figure 1 for a timeline of events). Ex ante it is unclear when we should observe market share changes in response to PCAOB oversight and thus we examine both dates.

Based on prior research (e.g., Chow and Rice, 1982; Krishnan, 1994; Landsman et al., 2009 and Swanquist and Whited, 2015), we control for the following variables in our regressions: the average growth in client assets (*AVG CLIENT GR*); the average ratio of clients' total accruals scaled by assets (*AVG CLIENT ACC*); the average ratio of clients' inventories plus account receivables scaled by current assets (*AVG CLIENT INV&REC*); the average returns on assets of the clients (*AVG CLIENT ROA*); the average leverage ratio of the clients (*AVG CLIENT LEVERAGE*); the average ratio of clients' cash and cash equivalents scaled by assets (*AVG CLIENT CASH*); the average size of all clients, measured as the log of assets (*AVG CLIENT SIZE*); the proportion of clients that have negative earnings before extraordinary items (*% CLIENT LOSS*); the proportion of clients that receive a going concern opinion (*% CLIENT GC OPINION*), and the proportion of clients that receive an unqualified opinion with additional language (*% CLIENT UQ OPINION*).

There are two important features of our research design. First, we measure our dependent variable as a first difference (i.e., year-on-year change). Thus, all time invariant auditor-specific characteristics that affect market share are differenced away in our analyses. For example, one could argue that the type of auditors that have SEC registered clients, and are thus subject to PCAOB oversight, have greater reputation than others, leading to larger market shares. However, since our analyses focus on changes in market share following a change in regulatory oversight via the PCAOB inspection, such reputation effects will get differenced away in our analyses. As an additional precaution to ensure that time-invariant auditor characteristics do not affect market

share changes, we also control for auditor fixed effects. Second, we include country × year fixed effects in all our regressions. These fixed effects control for all time varying and time invariant country-level factors such as concurrent regulatory changes, economic shocks that affect the audit market, and the levels of, and changes in, country-specific institutional characteristics (e.g., corruption, culture, legal enforcement, etc.) that affect auditor market share changes.

To provide additional comfort that our inferences are not affected by systematic differences between PCAOB inspected auditors and those not inspected, we also conduct all our analyses with a sample restricted to auditors that are inspected by the PCAOB at least once during our sample period. Thus, this latter research design exploits only the staggered nature of the PCAOB inspections within each country, which affects different auditors at different points in time (recall that all non-U.S. auditors subject to PCAOB oversight except for the big-four in Canada are inspected on a triennial rather than annual basis). Specifically, our staggered research design benchmarks market share changes for an auditor inspected by the PCAOB in the previous year to the market share changes of all other auditors that (i) have already been inspected by the PCAOB in the past and (ii) those that will be subsequently inspected by the PCAOB in the future (Figure 2 provides a graphical illustration of our design). Thus, concerns related to differences in client characteristics between auditors with and without SEC registered clients cannot affect our inferences as all auditors in this restricted sample are inspected by the PCAOB.[18]

4.2. Descriptive statistics

Table 3 Panel A (B) presents summary statistics for our variables of interest for our full sample (restricted sample employed in the staggered research design). A few noteworthy

[18] Although the staggered research design is conducted using the subsample of PCAOB inspected auditors, it does not imply that our results in this subsample capture market share transfers from one PCAOB inspected auditor to another PCAOB inspected auditor. The computation of auditor market share is still the number of public companies audited divided by the total number of public companies in the country. As a result, the market share changes in the staggered design include client switches from both the (i) clients of auditors not inspected by the PCAOB and (ii) clients of other PCAOB inspected auditors. Section 5 discusses additional tests to identify which auditors lose/gain market share as a result of PCAOB oversight.

observations are as follows. The average change in auditor market share is close to zero, ranging from -0.007% to -0.035% (in Panel A), which is consistent with market share changes being a zero-sum game. That is, a market share increase for one auditor is by construction a market share decrease for at least one other auditor. As a result, the average change in market share should be zero or near zero, as we observe. Second, approximately 1.4% (1.0%) of the auditor-year observations in our sample are associated with a PCAOB inspection (PCAOB report release). In numbers, there are 340 PCAOB inspections occurring during our sample period related to the auditors in our sample, and of these, 250 inspection reports are publicly released.[19] Finally, 21 of the PCAOB inspections (i.e., 8% of the inspection reports) result in a publicly disclosed quality control criticism, which occurs only if an auditor fails to satisfactory remediate quality control issues raised by the PCAOB within a year after the inspection report is released. In contrast, the frequency of engagement deficiencies in inspection reports is much greater; over half of the inspection reports have at least one engagement deficiency and the average report has a 37% deficiency rate (note that engagement deficiencies are made public regardless of whether they are subsequently remediated). Panel B shows that the descriptive statistics for the sample restricted to PCAOB inspected auditors is similar to that for the full sample of observations.

4.3. Main results: Do PCAOB inspections affect auditor market share?

Table 4 presents our main results where we test whether PCAOB inspected auditors observe an increase in market share in the year after their inspection and/or in the year after the public disclosure of their inspection report. Our motivation for examining auditor market share changes following the inspection but before inspection reports are made public is as follows: it is plausible that PCAOB inspected auditors begin informing potential clients of the additional regulatory scrutiny they are subject to immediately after the inspection rather than waiting until

[19] As discussed earlier, the number of inspections in our sample is greater than the number of inspection reports because our market share data ends in 2013 and many of the inspections that occur in 2011 and 2012 are not disclosed until after 2013.

the inspection reports are made public, which is typically several months after the inspection is completed.[20] The PCAOB strives to inform auditors about the content of the inspection reports well before their public release, so as to avoid any surprises (Aobdia, 2015a). Thus, auditors could use their knowledge of the likely content of the final inspection reports to inform and woo potential clients whose incumbent auditor is not subject to PCAOB oversight. Alternatively, investors and clients might not be persuaded to switch auditors until they observe the auditors' inspection report. Thus it is unclear when PCAOB inspections would affect market share.

Panel A presents the results using a sample comprised of PCAOB inspected auditors and auditors not subject to PCAOB oversight. The table shows that the coefficient for *INSPECTION* is positive but statistically insignificant in all four regressions (related to the four proxies for changes in market share). However, the coefficient for *REPORT* is positive and significant at the 5% level or better in all four regression specifications. The estimated coefficient for *REPORT* ranges from 0.004 to 0.009, which imply that PCAOB inspected auditors observe a 0.4 to 0.9 percentage point increase in their market share in the year following disclosure of the inspection report. The average market share of PCAOB inspected auditors in our sample ranges from 11 to 15% (depending on the market share proxy employed). Thus, our estimated coefficients suggest that PCAOB inspected auditors observe on average a 3.5 to 6.4% increase in their market share following the public release of their PCAOB inspection report.

In Panel B, we repeat the above analyses on a sample restricted to include only those auditors inspected by the PCAOB at least once during our sample period (i.e., the staggered design sample). As a result of the sample restriction, the number of auditor-years observations reduces from 23,829 to 1,685. Despite the reduction in sample size, we find that the coefficient for *REPORT* is positive in all four regression specifications and significant at the 10% level or

[20] Inspection reports are released on average 571 days after the inspections are completed in our sample of inspections of non-U.S. auditors. Shroff (2015) explains that the long delay occurs because the inspection report is subject to at least one technical review and at least one legal review before it is made public. Further, the PCAOB, similar to most regulatory agencies, is resource-constrained and prioritizes issuing timelier inspection reports for U.S. auditors, which comes at the cost of further delaying the inspection reports of non-U.S. auditors.

better in three of the four regressions. The coefficient estimates for *REPORT* range from 0.003 to 0.010 in Panel B, which is very similar to that in Panel A. These estimates imply that PCAOB inspected auditors observe a 4 to 7% increase in market share following the disclosure of their inspection reports. We graphically present this result in Figure 3. Panel B also shows that the coefficient for *INSPECTION* is positive and significant at the 10% level in one of the four regressions, suggesting that PCAOB inspections might lead to market share increases even before the inspection reports become public. However, we are reluctant to place too much weight on this one coefficient given that is not very robust and is only marginally significant.[21] Overall, the results in Table 4 suggest that the disclosure of a PCAOB report leads to significant increases in the auditors' market share, supporting our hypothesis that regulatory oversight helps increase the value of an audit.

4.4. Effect of engagement level deficiencies on market share

Next, we examine the effect of PCAOB inspections on changes in auditor market share when the PCAOB inspected auditors have a large number of engagement-level deficiencies listed in their inspection report (via Part I Findings). As discussed earlier, PCAOB inspections involve two parts: (i) an analysis of at least one audit engagement of an SEC registered client, and (ii) an examination of the auditor's firm-level quality control systems. The engagement deficiencies identified during the inspection fieldwork are included in the inspection report as a "Part I Finding," although the names of clients whose engagements have Part I Findings are kept confidential. In addition, the PCAOB is prohibited from publicly disclosing the quality control

[21] The result that market share changes occur after the inspection report is disclosed rather than immediately following the inspection can be interpreted in at least one of three ways. One, it is plausible that auditors simply do not use their knowledge of the inspection and its preliminary results to pursue their competitors' clients and gain market share. Two, it is plausible that auditors try to gain market share immediately following their inspection but because auditor switching costs are high, companies are reluctant to change auditors before the inspection reports are publicly disclosed. And three, it is plausible that auditors are unsure about the content of the final inspection report, and so are unwilling to use preliminary inspection findings as a marketing tool. In any case, our evidence on the timing of market share changes is potentially useful from a policy perspective because regulators in many countries conduct auditor inspections but do not publicly disclose the inspection results. Our analyses suggest that the public disclosure of inspection reports is what leads to changes in market share for inspected auditors.

deficiencies identified during its inspection, unless the auditor fails to address the PCAOB's quality control concerns within a year of the inspection report release date. If quality control deficiencies are left unaddressed even after a year following the inspection report date, the PCAOB can make these deficiencies public via a Part II Finding in the inspection report. We initially focus on an auditor's engagement deficiencies because the quality control deficiencies are not publicly disclosed in the inspection reports.[22]

To examine the effect of engagement level deficiencies on the relation between PCAOB inspections and auditor market share changes, we calculate the percentage of audit engagements inspected by the PCAOB that receive a Part I Finding (*% ENGAGE DEF*). We predict that auditors that have a large number of engagement deficiencies observe smaller increases in their market share following the disclosure of their PCAOB inspection report because the inspection report reveals that the auditor performs low quality audits. To test our prediction, we include the interaction terms *INSPECTION* × *%ENGAGE DEF* and *REPORT* × *%ENGAGE DEF* as additional independent variables in equation 1. Note that the main effect of *%ENGAGE DEF* is not identified in our regressions because it is perfectly collinear with the interaction terms.

Table 5, Panel A (B) presents results for the full sample (staggered design sample). Consistent with our predictions, Panel A shows that the coefficient for *REPORT* is positive and statistically significant in all four regressions and the coefficient for *REPORT* × *%ENGAGE DEF* is negative and statistically significant in all four regressions. Further, an F-test shows that the sum of these coefficients evaluated at the mean value of *%ENGAGE DEF* is statistically significant in all four regressions. These coefficients suggest that PCAOB inspected auditors observe significant increases in their market share but the increase in market share is

[22] In subsequent analyses (discussed in section 5), we test and find that the *public* disclosure of quality control criticisms does not incrementally affect auditor market share once we control for the percentage of engagement deficiencies in an inspection report. Without access to proprietary PCAOB data, we are unable to test whether auditors that have quality control deficiencies that are never made public because they are remediated within one-year of the inspection report date observe a differential market share effect following their PCAOB inspections/reports.

significantly smaller for auditors that receive a large number of engagement level deficiencies. Panel B repeats the above analyses on the staggered design sample and leads to the same inference. Specifically, we find that the coefficient for *REPORT* is positive and significant in all four regressions and the coefficient for *REPORT* × *%ENGAGE DEF* is negative and significant in three of the four regressions. The economic magnitudes of the coefficients are very similar to that in Panel A. These results help strengthen our inferences by tying the changes in market share following PCAOB inspections to the content of the inspection report.

In the analyses that follow, we restrict our discussion to market share changes after the PCAOB inspection reports are released and do not further discuss the analyses of market share changes following PCAOB inspections for brevity.

4.5. Cross-sectional analysis: Effect of PCAOB oversight within and across industries

A large part of an auditor's PCAOB inspection (related to the in-depth examination of select audit engagements) is restricted to its pool of SEC registered clients. Thus, it is conceivable that the effect of PCAOB oversight on audit-process improvements is greater in industries in which an auditor has more SEC registered clients (whose audit engagements can be inspected by the PCAOB). In other words, if the PCAOB inspection of an audit engagement helps improve the audit processes of this specific engagement, such improvements are more likely to have spillover effects for the audit engagements of related clients in the industry. Thus, we predict that the effect of PCAOB inspections on auditor market share changes is greater in industries in which the inspected auditor has a larger number of SEC registered clients.

To test our prediction, we change our unit of analysis from the auditor-year level to the auditor-industry-year level, where industries are defined based on the Fama and French 49-industry classification. Specifically, we compute market share changes for each auditor-industry-year group and examine whether PCAOB inspection reports have a larger effect on market share changes in industries where the auditor has more SEC registered clients. In addition to

controlling for year × country and auditor fixed effects, we also control for industry fixed effects in these regressions. Table 6, Panel A (B) presents results for the full (staggered design) sample.

Consistent with our prediction, Panels A and B show that the coefficient for *REPORT* × *NO. SEC CLIENTS IN IND* is positive and statistically significant in all regressions presented. Further, an F-test shows that the sum of the coefficients for *REPORT* and *REPORT* × *NO. SEC CLIENTS IN IND* evaluated at 0.69 (which is equal to having one SEC registered client in the industry because *NO. SEC CLIENTS IN IND* is defined as the logarithm of one plus the number of SEC registered clients) is positive and statistically significant in all regressions as well.[23] Overall, these results suggest that PCAOB inspections have a significantly larger effect on auditor market share in the industries where the inspected auditor has more SEC registered clients. Our primary inference from this analysis is that PCAOB oversight has a larger effect on the assurance value of audits for non-U.S. clients operating in industries where the inspected auditor has a greater number of U.S. clients, subject to engagement-level inspections.

4.6. The effect of local audit regulators on the value of PCAOB oversight

In recent years, a number of countries have created auditor oversight bodies, many of whom have an inspection program. While the scope of the inspection program differs across countries, the primary purpose of such inspections is largely the same. In our main tests, we control for the effects of local auditor oversight using country × year fixed effects. In this section, we examine whether characteristics of the local audit regulator (e.g., existence of a local inspection program, disclosure of inspection reports, etc.) affect the value of PCAOB oversight in the country. On the one hand, it is plausible that local regulators share information and expertise with the PCAOB in a manner that enhances the effectiveness of PCAOB oversight. For example, in some countries, the PCAOB coordinates with the local regulator to conduct

[23] Note that our results are unlikely to be explained by auditors increasing their market share of other SEC registered companies because our results are robust to using the two market share proxies that exclude from the computation all SEC registered clients.

inspections, and in some other countries, auditor inspections are jointly conducted with local regulators. It is plausible that such coordination enhances the value of PCAOB oversight. On the other hand, it is also plausible that local regulatory oversight substitutes for PCAOB oversight, and diminishes the value of PCAOB oversight in the country.

We collect data on the auditor inspection programs in non-U.S. countries by reading regulators' websites and the International Forum of Independent Audit Regulators (IFIAR) website.[24] Table 7, Panel A presents information about (i) the presence of a local audit regulator, (ii) whether the regulator is a member of IFIAR, (iii) the existence of a local auditor inspection program, and (iv) whether auditor inspection reports are publicly disclosed. The table shows that 69% of the countries in our sample have a local regulator that oversees auditors. Conditional on having a local regulator, most of them are members of the IFIAR and have instituted an auditor inspection program (per IFIAR's guidelines). However, aside from the Netherlands, Norway and the U.K., none of the local regulators disclose auditor inspection reports.[25]

In Table 7, Panels B to E we examine the effect of local regulators on the value of PCAOB oversight; the four panels correspond to results using the four different market share proxies as the dependent variable. To test the effect of local regulator characteristics, our regressions include an additional independent variable based on the interaction between *REPORT* and four proxies (*Local Regulator Proxy*), capturing different features of local regulatory oversight.[26] We find that irrespective of the manner in which we measure auditor

[24] Lamoreaux (2016) follows a similar approach to collect data on auditor oversight across countries. Our descriptive information related to when the regulatory body is established and when inspection programs commence is similar to that reported in Lamoreaux (2016), but not identical. We are unsure of the source of this difference.

[25] Further, inspection report disclosures in the U.K. are restricted to those of the largest auditors. At a qualitative level, reading several of the inspection reports for U.K. auditors reveals that the tone of the reports is generally much more positive and the reports are generally less informative than reports written by PCAOB inspectors.

[26] Specifically, we construct the following four indicator variables to capture different attributes of the local auditor regulator across countries: (i) *NO LOCAL REGULATOR* is an indicator variable that equals one for country-years with no local regulator overseeing auditors, (ii) *NOT IFIAR MEMBER* is an indicator variable that equals one for country-years with either no local regulator or a local regulator that is not a member of the IFIAR, (iii) *NO LOCAL INSPECTION* is an indicator variable that equals one for country-years with no local auditor inspection program, and (iv) *NO INSP REPORT DISCLOSURE* is an indicator variable that equals one for country-years with no

market share changes and local regulator characteristics, there is largely insignificant evidence that a local regulator or local inspection program reduces the value of PCAOB oversight (see Table 7). However, we continue to find that PCAOB inspections affect auditor market share even in counties with local inspection programs (based on the coefficient for *REPORT* and the sum of the coefficients for *REPORT* and *REPORT* × *Local Regulator Proxy*). In untabulated analyses, we verify that our inferences are robust to (i) removing Year × Country fixed effects from the regressions, (ii) substituting country fixed effects for Year × Country fixed effects in all regressions, (iii) estimating all regressions without any control variables.

5. Additional analyses and robustness tests

We conduct a number of additional analyses to provide richer insights into the effects of PCAOB auditor oversight. First, we examine whether the effect of PCAOB oversight on auditor market share is affected by differences in local institutions across countries. In the absence of regulatory oversight, the primary forces that incentivize auditors to provide high quality audits are reputation and litigation concerns – i.e., low quality audits increase the risk of an audit failure, which adversely affects auditors' reputation and imposes litigation costs. However, auditors operating in corrupt countries and countries with weak rule of law are less likely to suffer negative reputation effects since their failures are less likely to be caught and publicized (e.g., Srinivasan et al., 2015). Similarly, the judicial systems in corrupt countries and countries with weak rule of law are typically corrupt or ineffective (Jackson and Roe, 2009) and thus litigation concerns are also less likely to motivate auditors to perform high quality audits. We predict and find evidence that the effect of PCAOB oversight on changes in auditor market share is greater in corrupt countries and countries with weak rule of law. However, the statistical significance of these results is modest (see Tables OA1 and OA2 in the online appendix). Our

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disclosure of the auditor inspection reports at the individual auditor level. The main effects of the *Local Regulator Proxies* are not identified in our regressions because they are subsumed by the Year × Country fixed effects.

results on the value of PCAOB oversight in countries with weak legal institutions are consistent with the analytical evidence in Ye and Simunic (2016) and the evidence in Lennox and Pittman (2010) who find that PCAOB inspections are not associated with market share changes in the U.S., which has strong legal protection.

Next, we examine whether the relation between PCAOB inspections and market share changes differ for the first versus subsequent inspections. On the one hand, it is plausible that once an auditor is inspected by the PCAOB and clients observe the auditor's inspection report, there is no incremental benefit observing subsequent inspection reports. If so, then we should observe that PCAOB inspected auditors experience increases in market share only after their first inspection report becomes public and no further increase in market share following the disclosure of subsequent inspection reports. On the other hand, it is plausible that clients and investors in non-U.S. countries take time to learn about the PCAOB, its effectiveness as a regulator, and the value of its inspections, leading to gradual increases in market share as additional inspection reports are made public. Given the widespread, and well publicized, skepticism about the effectiveness of PCAOB oversight (Hodowanitz and Solieri, 2005; Palmrose, 2006; Hilzenrath, 2010), it is plausible that even if non-U.S. clients and investors are aware of the PCAOB, they do not rely on the findings or content of the initial inspection reports. To test whether first versus subsequent PCAOB inspection reports have any differential effect on changes in auditor market share, we create an indicator variable for an auditor's first inspection report and include it as an additional independent variable interacted with *REPORT*. This variable captures the incremental effect of an auditor's first PCAOB inspection report. We find that both initial and subsequent PCAOB inspection reports lead to significant increases in auditor market share (based on the F-tests for the sum of the coefficient for first and subsequent reports). In one specification, we find that the market share changes are larger following subsequent

inspection reports (see Table OA3 in the online appendix). This evidence is consistent with clients/investors gradually learning about the PCAOB and its effectiveness as a public regulator.

Third, we examine whether PCAOB inspected auditors whose quality control criticisms are eventually publicly disclosed via a Part II Finding observe a differential market share change following (i) the disclosure of the PCAOB inspection report but before the public disclosure of the Part II Finding and (ii) the public disclosure of the Part II Finding. This prediction is nuanced because Part II Findings are not publicly disclosed for at least one year after the inspection report becomes public. If the auditors that ultimately receive a public Part II Finding refrain from informing current/potential clients that they are PCAOB inspected then we will not observe an increase in market share for such auditors at the time their inspection reports are disclosed (in contrast to inspected auditors with clean inspection reports) even though the Part II Findings are non-public at the time. We also test whether the public disclosure of a Part II Finding affects auditor market share. The PCAOB does not disseminate or provide any disclosure of when Part II Findings are made public. Nevertheless, we can infer the dates when Part II Findings are made public from the properties of the PDF files of inspection reports (Nagy, 2014).[27]

We find no evidence that auditors receiving a public Part II Finding observe a differential market share change when the inspection report is initially disclosed, but before the Part II Finding is made public (see Table OA4 in the online appendix).[28] In addition, we find no significant association between the public disclosure of a Part II Finding and changes in auditor market share (see Table OA5 in the online appendix). These results are consistent with three potential explanations: (i) our tests are not sufficiently powerful to detect market share changes related to Part II Findings, perhaps because of the few such incidences in our sample; (ii)

[27] Using the approach in Nagy (2014), we are able to identify the disclosure dates for 10 of the 21 inspection reports in our sample that have publicly disclosed Part II Findings. The PDF files for the remaining inspection reports with publicly disclosed Part II Findings either do not indicate the dates when the reports were updated to include Part II Findings or indicate that the public disclosure date was after the end of our sample period.

[28] Note that in Table OA4, we control for the percentage of inspected engagements that receive a Part I Finding, which can be directly inferred from the initial inspection report, to identify the incremental effect of the as yet undisclosed Part II Findings.

auditors that receive publicly disclosed Part II Findings also receive many engagement-level deficiencies (Part I Findings), and thus there is no incremental effect of the public release of Part II Findings; or (iii) since the disclosures of un-remediated Part II Findings are not disseminated by the PCAOB, they do not have a meaningful effect on auditor market share in a non-U.S. setting (which is in contrast to the evidence in the U.S. setting documented by Nagy, 2014). That is, it is plausible that there is lower awareness of PCAOB inspections outside the U.S. and unless inspected auditors actively advertise to current and potential clients about their inspection, the inspections do not have economic effects. If auditors are less likely to voluntarily inform clients that they are PCAOB inspected when they receive a quality control deficiency that they cannot (or are unwilling to) remediate, such deficiencies can have insignificant effects on market share.

Next, we devise two tests to examine which group of auditors lose market share when a competitor is inspected by the PCAOB. Our hypothesis is that PCAOB inspected auditors gain market share at the expense of auditors not subject to PCAOB oversight, and our empirical tests are consistent with this hypothesis. Nevertheless, to provide more clarity, we first test and find that the aggregate market share of all auditors not subject to PCAOB oversight declines in the years when at least one of their competitors' PCAOB inspection report is disclosed (see Table OA6 in the online appendix). We also conduct a test at the client-level to examine which auditors lose market share as a result of PCAOB oversight. Specifically, we estimate regressions where the dependent variable is an indicator for client-years in which there is an auditor change *and* the newly hired auditor is PCAOB inspected. The independent variables of interest are indicator variables that equal one for client-years in which the incumbent auditor (i) receives a PCAOB inspection, and (ii) the inspection report is made public. We find that clients whose incumbent auditors are PCAOB-inspected are less likely to switch to another PCAOB inspected auditor in the year after their incumbent auditors' PCAOB inspection report disclosure (see Table OA7 in

the online appendix).[29] These results suggest that PCAOB inspected auditors gain market share from those not PCAOB inspected rather than from one inspected auditor to another.

Finally, in untabulated robustness tests, we verify that our inferences are unchanged when we (i) exclude auditor fixed effects, (ii) use country and year fixed effects (rather than country times year fixed effects), (iii) separately examine the effect of PCAOB inspections and the public disclosure of their inspection reports on changes in market share, and (iv) control for the lagged dependent variable (since auditor market share changes are persistent [Lennox and Pittman, 2010]). In all cases, we find that our inferences are unchanged.

6. Conclusion

In this paper, we examine whether public oversight of an auditor helps increase the perceived value of an audit. We provide evidence on this question by analyzing the introduction of PCAOB inspections of non-U.S. auditors. The PCAOB international inspection program provides a research setting where a subset of auditors competing to provide audit services in a country are subject to greater regulatory oversight (due to PCAOB inspections) while another subset of auditors competing in the same country are not subject to such oversight. We exploit this setting by examining whether PCAOB inspected auditors observe an increase in their market share following their inspection. Our empirical design exploits the staggered nature of PCAOB inspections by including fixed effects for each country-year combination and each auditor. The staggered design alleviates the concern that unrelated economic shocks affect our inferences and that auditors subject to PCAOB inspections differ from those not subject to such inspection. In addition, our analyses focus on the effect of PCAOB oversight on *changes* in auditor market share, further alleviating concerns that audit firm characteristics affect our inferences.

Consistent with greater public oversight increasing the assurance value of an audit, we find that PCAOB inspected auditors increase their market share by 4 to 6% following the public

[29] Note that the regressions in Table OA7 include auditor fixed effects, and thus interpretation of the coefficient for *INCUMBENT REPORT YEAR* is based on a comparison of an auditor's PCAOB report year to the non-report years.

disclosure of their inspection report. We corroborate our inference by showing that auditors that have a large number PCAOB identified engagement deficiencies in their inspection reports observe significantly smaller changes in their market share following PCAOB inspections. Finally, we find that PCAOB oversight has a larger effect on the assurance value of audits for non-U.S. clients operating in industries where the inspected auditor has a greater number of U.S. clients (i.e., SEC registered companies) than in industries with few U.S. clients. Interestingly, we find that oversight by a local audit regulator does not dampen the value of PCAOB oversight.

Overall, our evidence suggests that public auditor oversight can help increase the assurance value of an audit. Since the audit process is largely unobservable to external stakeholders in a company, it is difficult for these stakeholders to assess the quality of an audit. Further, any concerns about audit quality are exacerbated by the fact that auditors are typically hired by the company (or its board of directors), whose financial statements auditors are supposed to verify. Under these circumstances, theory suggests that a public regulator can be valuable, but whether such a regulator is truly valuable is an empirical question. We provide empirical support of the value of public oversight of auditors, within the context of the PCAOB.

In conclusion, we highlight three limitations of our study. First, our analyses are based on PCAOB oversight and as such our inferences might not extend to all public regulators more generally. Second, our inferences are based on an examination of auditors operating in countries that are likely to have weaker governance institutions than those in the U.S. Thus, our findings might not generalize to the U.S. Finally, our analyses do not consider the costs of auditor oversight. Thus, we cannot draw any conclusions about the social welfare implications of auditor oversight. We need more research to assess the generalizability of PCAOB oversight to other public regulators as well as research estimating the costs of such oversight.

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Appendix A

Variable definitions

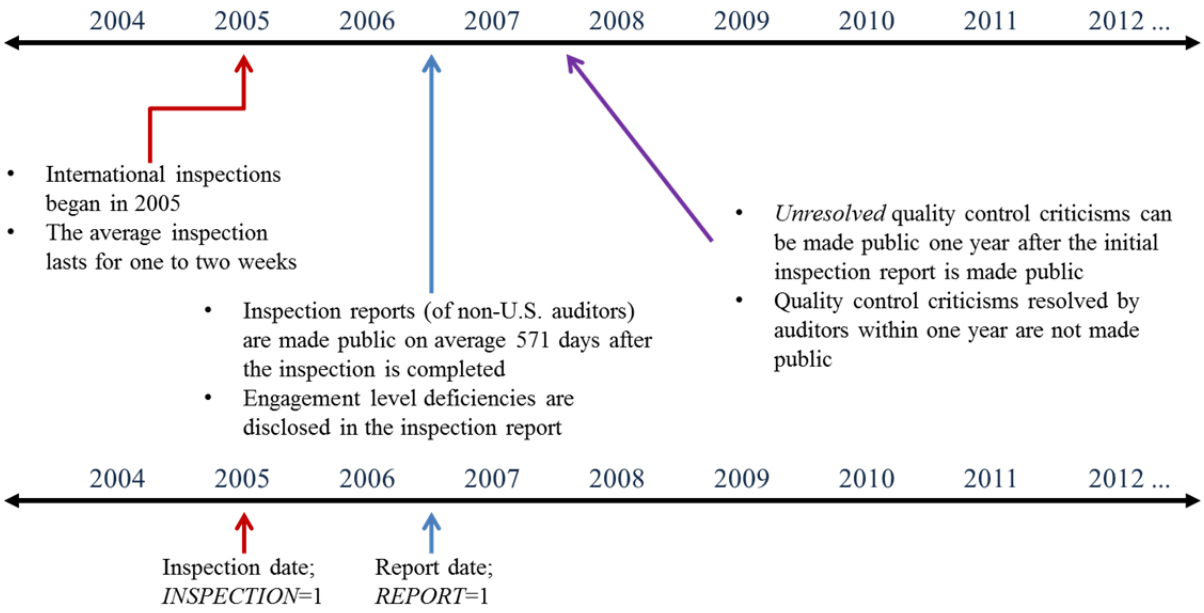
This table provides a detailed description of the procedure used to compute each variable used in our analyses. Our data are obtained either through Compustat Global (for non-Canadian companies), Compustat North America (for Canadian companies), Capital IQ, or the PCAOB and IFIAR websites. All continuous variables are winsorized at 1% and 99% of the distribution and all dollar amounts are in millions. Unless noted otherwise in the definition, all explanatory variables are measured during or at the end of a given Compustat fiscal year t, and all changes in market share variables are computed between fiscal year t and t+1. The variables are listed according to alphabetical order.

Variable	Definition
% CLIENT GC OPINION	Proportion of clients in the auditor portfolio receiving a going concern opinion (based on the audit opinion provided in Capital IQ)
% CLIENT LOSS	Proportion of clients in the auditor portfolio reporting negative income before extraordinary items (Compustat IB<0)
% CLIENT UQ OPINION	Proportion of clients in the auditor portfolio receiving an unqualified audit opinion with additional language (based on the audit opinion on Capital IQ)
ΔIND MKT SHARE	Change in industry-level market share from year t to t+1 for a given auditor. Market share in an industry is measured as the total number of clients audited by a particular auditor in an industry, divided by the total number of companies in the industry-country. Only companies that have valid auditor information in Capital IQ are used to compute the market share. We use the Fama and French 49-industry classification to group firms into industries.
ΔIND MKT SHARE AW	Change in industry-level market share from year t to t+1 for a given auditor. Market share in an industry is measured as the sum of all client assets (Compustat AT) audited by a particular auditor in an industry, divided by the sum of the assets of all companies in the industry-country. Only companies that have valid auditor information in Capital IQ are used to compute the market share. We use the Fama and French 49-industry classification to group firms into industries.
ΔIND MKT SHARE OF NON SEC REGISTERED CLIENTS	Change in industry-level market share of non SEC registered clients from year t to t+1 for a given auditor. Market share in an industry is measured as the total number of non SEC registered clients audited by a particular auditor in an industry, divided by the total number of non SEC registered companies in the industry-country. Only companies that have valid auditor information in Capital IQ are used to compute the market share. Market share is equal to zero for auditors with an SEC registered client but without non SEC registered clients. We use the Fama and French 49-industry classification to group firms into industries.
ΔIND MKT SHARE AW OF NON SEC REGISTERED CLIENTS	Change in industry-level market share of non SEC registered clients from year t to t+1 for a given auditor. Market share in an industry is measured as the sum of non SEC registered client assets (Compustat AT) audited by a particular auditor in an industry, divided by the sum of the assets of all non SEC registered companies in the industry-country. Only companies that have valid auditor information in Capital IQ are used to compute the market share. Market share is equal to zero for auditors with an SEC registered client but without non SEC registered clients. We use the Fama and French 49-industry classification to group firms into industries.
ΔMKT SHARE	Change in market share from year t to t+1 for a given auditor. Market share is measured as the total number of clients audited by a particular auditor, divided by the total number of companies in the country. Only companies that have valid auditor information in Capital IQ are used to compute the market share.
ΔMKT SHARE AW	Change in market share from year t to t+1 for a given auditor. Market share is measured as the sum of all client assets (Compustat AT) audited by a particular auditor, divided by the sum of the assets of all companies in the country. Only companies that have valid auditor information in Capital IQ are used to compute the

Variable	Definition
	market share.
ΔMKT SHARE OF NON SEC REGISTERED CLIENTS	Change in market share of non SEC registered clients from year t to t+1 for a given auditor. Market share is measured as the total number of non SEC registered clients audited by a particular auditor, divided by the total number of non SEC registered companies in the country. Only companies that have valid auditor information in Capital IQ are used to compute the market share. Market share is equal to zero for auditors with an SEC registered client but without non SEC registered clients.
ΔMKT SHARE AW OF NON SEC REGISTERED CLIENTS	Change in market share of non SEC registered clients from year t to t+1 for a given auditor. Market share is measured as the sum of non SEC registered client assets (Compustat AT) audited by a particular auditor, divided by the sum of the assets of all non SEC registered companies in the country. Only companies that have valid auditor information in Capital IQ are used to compute the market share. Market share is equal to zero for auditors with an SEC registered client but without non SEC registered clients.
AVG CLIENT ACC	Mean of the auditor portfolio clients' accruals, defined as income before extraordinary item less cash flow from operations excluding extraordinary item deflated by beginning of year asset (Compustat [IB-(OANCF-XIDOC)]/Beginning of year AT)
AVG CLIENT CASH	Mean of the auditor portfolio clients' cash and cash equivalent divided by assets (Compustat CHE/AT)
AVG CLIENT GR	Mean of the auditor portfolio clients' growth in asset size between the prior and current year (Compustat AT/Beginning of year AT - 1)
AVG CLIENT INV&REC	Mean of the auditor portfolio clients' inventories plus receivables, scaled by current assets (Compustat [INVT+RECT]/AT)
AVG CLIENT LEVERAGE	Mean of the auditor portfolio clients' leverage, defined as short term plus long term debt divided by assets (Compustat [DLC+DLTT]/AT)
AVG CLIENT ROA	Mean of the auditor portfolio clients' return on asset, defined as income before extraordinary items deflated by average assets during the fiscal year (Compustat IB/average AT)
AVG CLIENT SIZE	Mean of the auditor portfolio clients' size. Client size is defined as the logarithm of their Compustat assets. For cross-country comparability, all assets use the Compustat AT variable, converted in US$ at the end of the fiscal year, using the exchange rate provided in Compustat (note: The direct conversion rate from a given currency to US$ is unavailable in Compustat, and consequently the exchange rate is converted first in British pounds, universally available for all currencies, then in US$ from the British pound).
INSPECTION	An indicator variable equal to one if the PCAOB inspects the auditor during the corresponding Compustat fiscal year. The list of PCAOB inspections and the corresponding dates of inspection are obtained from inspection reports on the PCAOB website.
INSPECTION × % ENGAGE DEF	An indicator variable equal to one for the year where an inspection report is released by the PCAOB (*INSPECTION* is equal to one), multiplied by the proportion of inspected engagements that receive audit deficiencies (Part I Finding).
NOT IFIAR MEMBER	An indicator variable equal to one for country-years where there is a no local auditor regulator or the local regulator is not an IFIAR member.
NO INSP REPORT DISCLOSURE	An indicator variable equal to one for country-years where there is a no local auditor inspection program or there is no disclosure of the individual auditor inspection reports by the local regulator.
NO LOCAL INSPECTION	An indicator variable equal to one for country-years where there is a no local auditor

Variable	Definition
	inspection program.
NO LOCAL REGULATOR	An indicator variable equal to one for country-years where there is a no local auditor regulator.
NO. SEC CLIENTS IN IND	The natural logarithm of one plus the number of SEC registered clients audited in an industry in a year. We use the Fama and French 49-industry classification to group firms into industries.
Q CONTROL DEF	An indicator variable equal to one for the year where an inspection report is released by the PCAOB (*INSPECTION* is equal to one), and this inspection report will subsequently be updated with public quality control criticisms. The list of reports with subsequent updates on public quality control criticisms is obtained from the PCAOB website.
REPORT	An indicator variable equal to one if an inspection report is released by the PCAOB during the corresponding Compustat fiscal year. The list of PCAOB reports and their corresponding release dates are obtained from the PCAOB website.
REPORT × % ENGAGE DEF	An indicator variable equal to one for the year where an inspection report is released by the PCAOB (*REPORT* is equal to one), multiplied by the proportion of inspected engagements that receive audit deficiencies (Part I Finding).

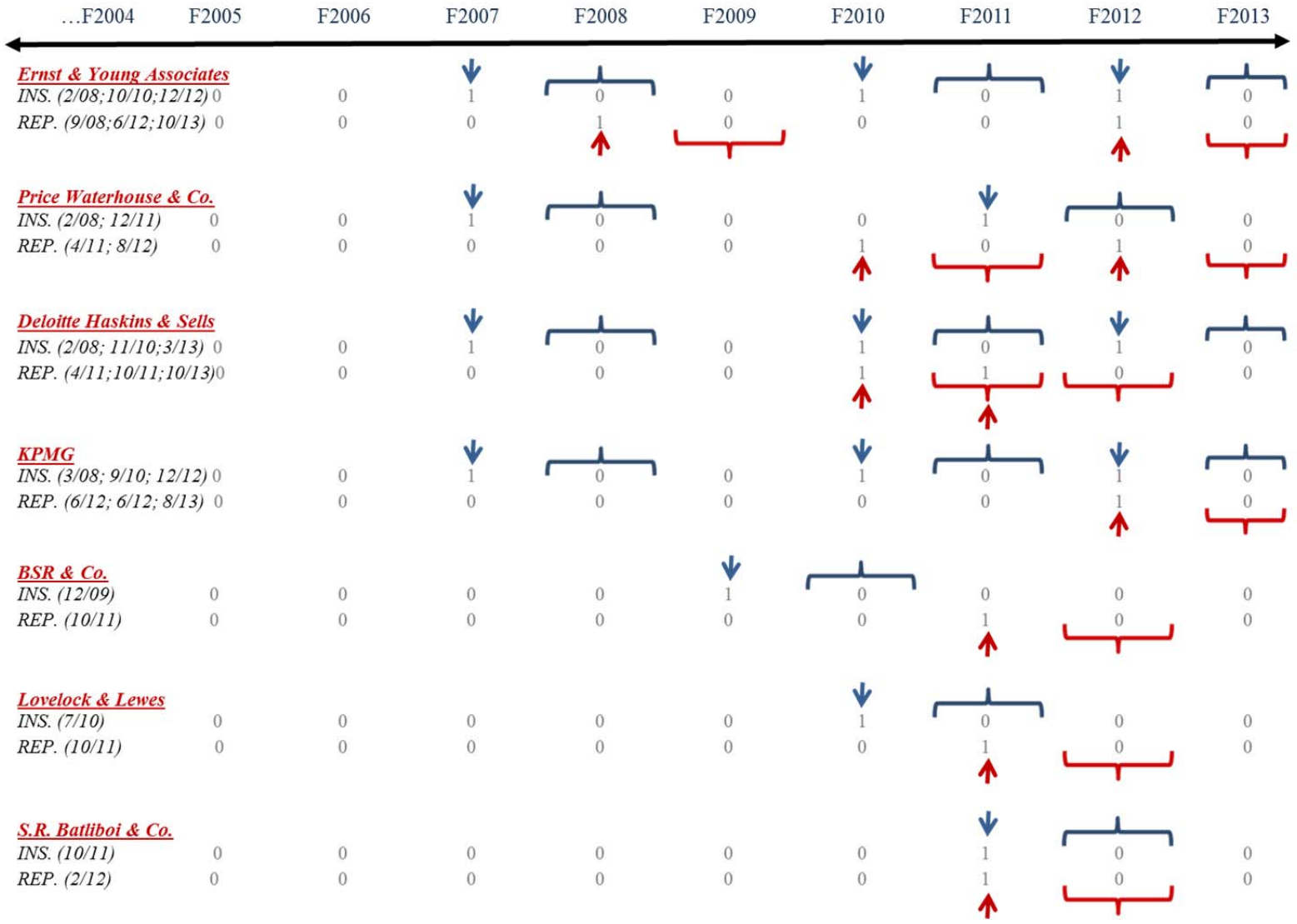
FIGURE 1
Timeline of events and setting



- We test whether the change in auditor market share in the year after its inspection/report date is any different than the change in market share in other years.
- Only engagement deficiencies (but not quality control criticisms) are publicly known in the period over which we examine changes in market share

FIGURE 2

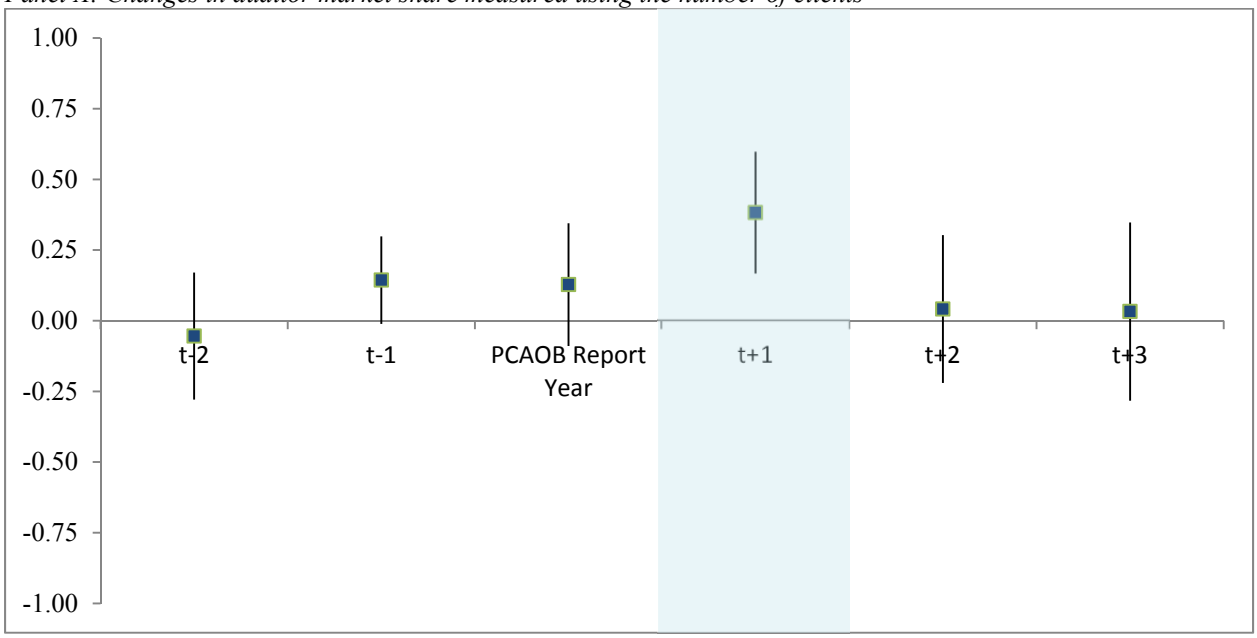
Illustration of research design with PCAOB inspections of Indian auditors



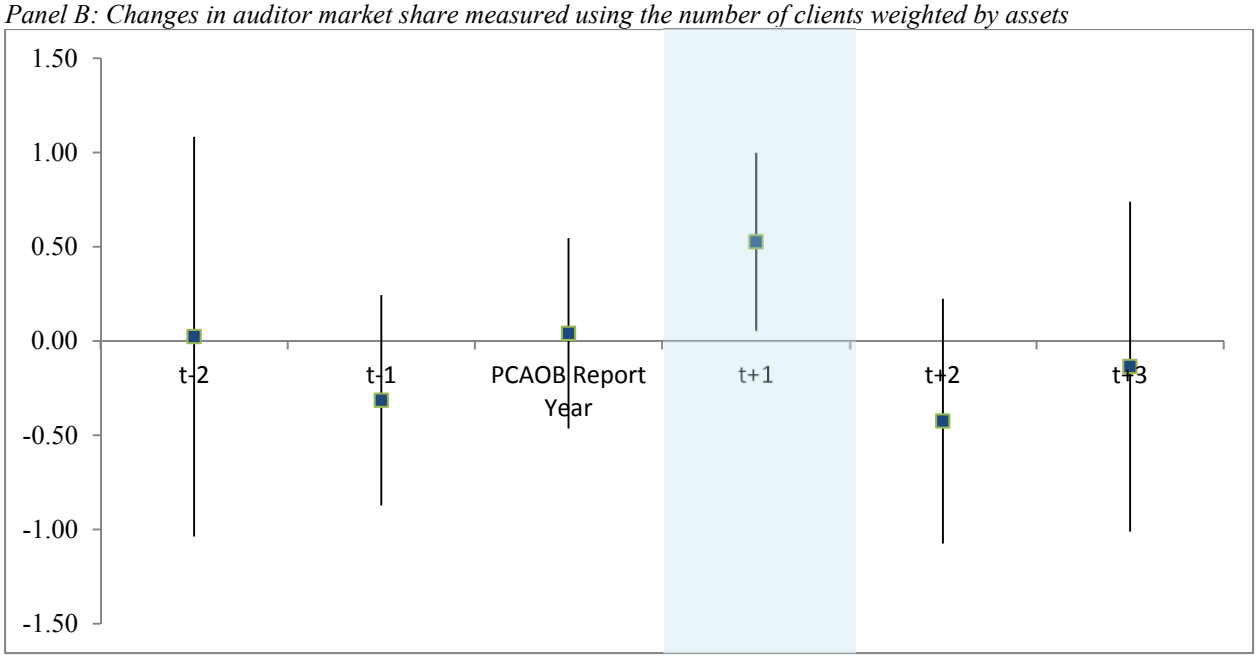
Notes: This figure presents the list of Indian auditors in our sample that are PCAOB inspected, the timing of their inspections and public disclosures of the inspection reports, and the period over which we expect to observe market share changes in response to the PCAOB inspection (note that the timing corresponds to fiscal rather than calendar years). The figure shows that PCAOB inspections/reports are staggered within a country, and that our design compares the change in market share in the year after an inspection occurs (or report is made public) to the change in market share in the years both *before and after* this period.

FIGURE 3
Plot of changes in market share around PCAOB inspections

Panel A: Changes in auditor market share measured using the number of clients



Panel B: Changes in auditor market share measured using the number of clients weighted by assets



Notes: This figure presents a plot of average change in market share around the dates PCAOB inspection reports are publicly disclosed. We also plot the two-tailed 95% confidence interval around the average change in market share to assess statistical significance. The average change in market share is the residual from a regression of the raw change in market share on auditor fixed effects, year × country fixed effects, and controls for client characteristics included in our regressions.

TABLE 1
Sample selection

No.	Sample Selection (2003 - 2013)	Number of Observations	
		Company-Year	Auditor-Year
(1)	Entire Compustat Global Sample	355,862	
(2)	Observations with Auditor Identities in Capital IQ	301,542	45,798
(3)	Observations in Countries with PCAOB Inspections	224,614	30,917
(4)	Observations with Non-Missing Values for the Dependent Variable	210,580	29,603
(5)	Observations with Non-Missing Values for the Independent Variables	203,566	23,829
	Final sample of *inspected* and *non-inspected* company/auditor-years available for analyses	203,566	23,829
	Final sample of *PCAOB inspected* company/auditor-years available for analyses	114,248	1,685

TABLE 2

Number of PCAOB inspections and number of observations by country and year

Panel A: Distribution of observations by country

Country	No. of PCAOB Inspections	No. of PCAOB Reports	No. of QC Criticisms	% of Engage Def.	Company-Yr Obs	Auditor-Yr Obs	Company-Yr Obs	Auditor-Yr Obs
					Full Sample of Auditors		*Sample of PCAOB Inspected Auditors (Staggered Design)*	
Argentina	11	9	0	6%	741	215	558	38
Australia	17	14	1	44%	16,024	801	10,417	93
Brazil	15	10	0	58%	3,459	445	2,701	64
Canada	96	66	11	46%	14,907	871	14,035	341
Chile	11	8	0	44%	1,820	144	1,561	40
Colombia	4	4	0	21%	334	94	227	29
Germany	3	0	0	.	7,293	1,204	3,620	30
Greece	2	2	0	0%	2,160	197	257	20
Hong Kong	6	6	1	82%	10,747	463	149	33
India	14	10	0	31%	26,726	11,558	3,693	70
Indonesia	5	3	0	0%	3,471	505	1,030	20
Ireland	2	2	0	0%	702	100	402	20
Israel	20	19	1	52%	3,629	229	3,406	90
Japan	12	10	1	57%	30,863	1,623	23,429	65
Kazakhstan	3	2	0	0%	207	50	93	18
Malaysia	4	4	1	25%	9,445	797	2,096	37
Mexico	18	13	2	59%	1,181	113	1,120	60
Netherlands	3	0	0	.	1,626	84	1,202	30
New Zealand	4	4	0	13%	1,242	129	680	20
Norway	5	3	0	44%	2,023	109	1,871	40
Panama	3	2	0	0%	14	14	7	7
Papua New Guinea	2	1	0	0%	56	20	46	10
Peru	4	2	0	0%	971	158	552	20
Philippines	7	5	0	20%	2,245	175	1,786	50
Russia	9	8	1	31%	1,789	371	1,234	59
Singapore	7	7	0	0%	5,860	212	3,716	48
South Africa	12	9	0	15%	3,012	264	2,400	70
South Korea	8	7	1	19%	9,536	669	5,643	50
Spain	1	0	0	.	1,425	100	645	10
Switzerland	2	0	0	.	2,766	151	1,235	20
Taiwan	8	8	0	10%	12,566	424	10,620	40
Thailand	2	2	0	0%	5,303	290	378	10
Turkey	1	0	0	.	1,893	259	173	10
Ukraine	1	1	0	50%	131	58	8	6
U.A.E	4	4	1	50%	935	106	372	30
United Kingdom	14	5	0	17%	16,464	827	12,886	87
Total	**340**	**250**	**21**	**26%**	**203,566**	**23,829**	**114,248**	**1,685**

TABLE 2 - *continued*

Panel B: Distribution of observations by fiscal year

Fiscal Year (June 1 to May 31)	No. of PCAOB Inspections	No. of PCAOB Reports	No. of QC Criticisms	% of Engage Def.	Company-Yr Obs	Auditor-Yr Obs	Company-Yr Obs	Auditor-Yr Obs
					Full Sample of Auditors		*Sample of PCAOB Inspected Auditors (Staggered Design)*	
2003	0	0	0	.	14,592	2,061	7,854	159
2004	2	0	0	.	15,960	2,189	8,566	161
2005	13	0	0	.	20,922	2,491	11,567	162
2006	22	7	0	29%	22,101	2,552	12,028	164
2007	36	5	1	52%	22,396	2,500	12,776	172
2008	44	19	0	16%	22,673	2,512	12,898	173
2009	70	21	3	58%	22,692	2,530	12,891	178
2010	46	94	12	37%	21,046	2,402	12,014	179
2011	43	67	5	38%	20,850	2,324	11,949	170
2012	64	37	0	32%	20,334	2,268	11,705	167
Total	**340**	**250**	**21**	**37%**	**203,566**	**23,829**	**114,248**	**1,685**

Notes: This table presents the distribution of the number of PCAOB inspections, publicly available PCAOB inspection reports, the number of quality control criticisms (Part II Findings), percentage of engagement deficiencies (Part I Findings), company-year observations and auditor-year observations by country and by fiscal year. Panel A (B) presents the distribution of the number of observations by country (year). The tables present these distributions for the full sample of observations that include both PCAOB inspected auditors as well as auditors never inspected by the PCAOB; and separately the distribution of the number of observations for just those auditors inspected by the PCAOB at least once during our sample period.

TABLE 3
Descriptive statistics

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Variables	Mean	SD	P25	P50	P75	N
Proxies for Changes in Market Share						
ΔMKT SHARE	-0.035%	0.720%	-0.032%	-0.001%	0.002%	23,829
ΔMKT SHARE AW	-0.008%	1.558%	-0.001%	0.000%	0.000%	23,829
ΔMKT SHARE OF NON SEC REGISTERED CLIENTS	-0.034%	0.725%	-0.032%	-0.001%	0.001%	23,829
ΔMKT SHARE AW OF NON SEC REGISTERED CLIENTS	-0.007%	1.811%	-0.001%	0.000%	0.000%	23,829
Proxies for PCAOB Oversight						
INSPECTION	0.014	0.119	0.000	0.000	0.000	23,829
REPORT	0.010	0.102	0.000	0.000	0.000	23,829
INSPECTION × %ENGAGE DEF	0.006	0.068	0.000	0.000	0.000	23,829
REPORT × %ENGAGE DEF	0.004	0.055	0.000	0.000	0.000	23,829
Inspection Report Characteristics						
%ENGAGE DEF	0.368	0.399	0.000	0.313	0.667	250
Q CONTROL DEF	0.084	0.278	0.000	0.000	0.000	250
Proxies for Client Characteristics						
AVG CLIENT GR	0.324	0.986	-0.004	0.099	0.274	23,829
AVG CLIENT ACC	0.113	0.117	0.039	0.077	0.137	23,829
AVG CLIENT INV&REC	0.336	0.196	0.199	0.327	0.457	23,829
AVG CLIENT ROA	-0.015	0.194	-0.018	0.023	0.060	23,829
AVG CLIENT LEVERAGE	0.292	0.387	0.000	0.000	0.500	23,829
AVG CLIENT CASH	0.270	0.226	0.109	0.239	0.376	23,829
AVG CLIENT SIZE	0.122	0.139	0.024	0.074	0.170	23,829
% CLIENT GC OPINION	3.602	1.942	2.275	3.597	4.859	23,829
% CLIENT UQ OPINION	0.044	0.173	0.000	0.000	0.000	23,829
% CLIENT LOSS	0.298	0.389	0.000	0.000	0.500	23,829

TABLE 3 - *continued*

Panel B: Sample restricted to PCAOB inspected auditors

Variables	Mean	SD	P25	P50	P75	N
Proxies for Changes in Market Share						
ΔMKT SHARE	0.015%	1.816%	-0.427%	0.001%	0.445%	1,685
ΔMKT SHARE AW	0.007%	4.870%	-0.217%	0.000%	0.402%	1,685
ΔMKT SHARE OF NON SEC REGISTERED CLIENTS	0.032%	1.878%	-0.467%	0.000%	0.534%	1,685
ΔMKT SHARE AW OF NON SEC REGISTERED CLIENTS	0.028%	5.783%	-0.252%	0.000%	0.433%	1,685
Proxies for PCAOB Oversight						
INSPECTION	0.202	0.401	0.000	0.000	0.000	1,685
REPORT	0.148	0.356	0.000	0.000	0.000	1,685
INSPECTION × %ENGAGE DEF	0.081	0.243	0.000	0.000	0.000	1,685
REPORT × %ENGAGE DEF	0.055	0.202	0.000	0.000	0.000	1,685
Inspection Report Characteristics						
%ENGAGE DEF	0.368	0.399	0.000	0.313	0.667	250
Q CONTROL DEF	0.084	0.278	0.000	0.000	0.000	250
Proxies for Client Characteristics						
AVG CLIENT GR	0.676	1.528	0.064	0.170	0.438	1,685
AVG CLIENT ACC	0.133	0.104	0.074	0.098	0.148	1,685
AVG CLIENT INV&REC	0.255	0.118	0.187	0.265	0.326	1,685
AVG CLIENT ROA	-0.098	0.294	-0.102	0.018	0.053	1,685
AVG CLIENT LEVERAGE	0.367	0.303	0.140	0.267	0.528	1,685
AVG CLIENT CASH	0.285	0.245	0.185	0.230	0.293	1,685
AVG CLIENT SIZE	0.182	0.119	0.107	0.164	0.224	1,685
% CLIENT GC OPINION	4.826	2.071	3.390	5.173	6.440	1,685
% CLIENT UQ OPINION	0.071	0.161	0.000	0.004	0.059	1,685
% CLIENT LOSS	0.263	0.264	0.026	0.166	0.480	1,685

Notes: This table presents the descriptive statistics for all the variables that are used in our regressions. Detailed variable definitions are provided in Appendix A. Panel A include both PCAOB inspected auditors as well as auditors never inspected by the PCAOB; and Panel B includes only the auditors inspected by the PCAOB at least once during our sample period.

TABLE 4

Effect of PCAOB oversight on changes in auditor market share

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.000	0.004	0.000	0.002
	[0.497]	*[1.101]*	*[0.228]*	*[0.509]*
REPORT	0.004***	0.006**	0.004**	0.009**
	[3.330]	*[2.339]*	*[2.508]*	*[2.521]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.099]	*[1.532]*	*[0.173]*	*[1.088]*
AVG CLIENT ACC	-0.000	-0.001	-0.000	-0.001
	[-0.978]	*[-1.254]*	*[-0.780]*	*[-0.857]*
AVG CLIENT INV&REC	0.001*	0.001	0.001*	0.001
	[1.682]	*[0.992]*	*[1.696]*	*[0.883]*
AVG CLIENT ROA	0.000	0.001	0.000	0.001
	[0.079]	*[1.131]*	*[0.144]*	*[1.417]*
AVG CLIENT LEVERAGE	0.000	0.000	0.000	0.000
	[0.127]	*[0.881]*	*[0.173]*	*[1.160]*
AVG CLIENT CASH	-0.000	0.000	-0.000	-0.000
	[-0.616]	*[0.545]*	*[-1.071]*	*[-0.148]*
AVG CLIENT SIZE	-0.000	-0.000	-0.000	-0.001
	[-1.063]	*[-0.126]*	*[-0.978]*	*[-0.686]*
% CLIENT GC OPINION	-0.000	-0.001***	-0.000	-0.001***
	[-1.063]	*[-6.531]*	*[-0.157]*	*[-6.215]*
% CLIENT UQ OPINION	-0.000	-0.001	-0.000	-0.001
	[-1.179]	*[-1.009]*	*[-0.720]*	*[-0.807]*
% CLIENT LOSS	-0.000	-0.000**	-0.000	-0.000*
	[-0.290]	*[-2.104]*	*[-0.052]*	*[-1.667]*
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.5%	9.5%	20.3%	9.1%
No. of Observations	23,829	23,829	23,829	23,829

TABLE 4 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.000	0.007*	0.000	0.007
	[0.226]	*[1.692]*	*[0.009]*	*[1.325]*
REPORT	0.004**	0.006*	0.003	0.010*
	[2.236]	*[1.734]*	*[1.436]*	*[1.882]*
AVG CLIENT GR	0.000	0.001	0.000	0.001
	[0.759]	*[1.097]*	*[0.854]*	*[0.700]*
AVG CLIENT ACC	-0.006	-0.006	-0.004	-0.003
	[-1.254]	*[-0.526]*	*[-0.777]*	*[-0.209]*
AVG CLIENT INV&REC	0.016**	0.009	0.016**	0.008
	[2.427]	*[0.808]*	*[2.347]*	*[0.632]*
AVG CLIENT ROA	0.000	0.002	0.001	0.004
	[0.252]	*[0.478]*	*[0.306]*	*[0.895]*
AVG CLIENT LEVERAGE	0.003	0.009	0.003	0.015
	[0.698]	*[0.860]*	*[0.636]*	*[1.195]*
AVG CLIENT CASH	-0.001	-0.001	-0.002	-0.004
	[-0.855]	*[-0.125]*	*[-0.965]*	*[-0.822]*
AVG CLIENT SIZE	0.001	0.002	0.001	-0.000
	[0.211]	*[0.138]*	*[0.218]*	*[-0.004]*
% CLIENT GC OPINION	-0.000	-0.007**	0.000	-0.007**
	[-0.275]	*[-2.493]*	*[0.339]*	*[-2.355]*
% CLIENT UQ OPINION	-0.003	-0.011	-0.000	-0.011
	[-1.016]	*[-1.101]*	*[-0.046]*	*[-0.977]*
% CLIENT LOSS	0.000	-0.007	0.001	-0.009
	[0.113]	*[-0.975]*	*[0.191]*	*[-0.995]*
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	25.1%	20.2%	24.3%	18.6%
No. of Observations	1,685	1,685	1,685	1,685

Notes: Panel A (B) in this table presents the results from regressing changes in auditor market share on indicator variables for the years in which an auditor is inspected by the PCAOB and the years in which the auditor's PCAOB inspection report is publicly disclosed for the full sample of auditors (subsample of PCAOB inspected auditors). See Appendix A for variable definitions. The standard errors are clustered at the auditor level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

TABLE 5

Cross-section test: Effect of PCAOB oversight on changes in auditor market share conditional on the percentage of PCAOB identified engagement-level deficiencies in the inspection report

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.001	0.004	0.001	0.003
	[0.995]	*[0.934]*	*[0.814]*	*[0.540]*
INSPECTION × %ENGAGE DEF	-0.003	-0.003	-0.003	-0.003
	[-1.146]	*[-0.406]*	*[-1.108]*	*[-0.325]*
REPORT	0.006***	0.011**	0.006***	0.014**
	[3.099]	*[2.450]*	*[2.580]*	*[2.412]*
REPORT × %ENGAGE DEF	-0.005*	-0.013**	-0.006*	-0.013*
	[-1.882]	*[-2.295]*	*[-1.918]*	*[-1.821]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.079]	*[1.523]*	*[0.153]*	*[1.078]*
AVG CLIENT ACC	-0.000	-0.001	-0.000	-0.001
	[-1.011]	*[-1.291]*	*[-0.813]*	*[-0.883]*
AVG CLIENT INV&REC	0.001	0.001	0.001*	0.001
	[1.640]	*[0.956]*	*[1.656]*	*[0.846]*
AVG CLIENT ROA	0.000	0.001	0.000	0.001
	[0.236]	*[1.282]*	*[0.295]*	*[1.518]*
AVG CLIENT LEVERAGE	-0.000	0.000	-0.000	-0.000
	[-0.490]	*[0.643]*	*[-0.940]*	*[-0.054]*
AVG CLIENT CASH	-0.000	-0.000	-0.000	-0.001
	[-1.049]	*[-0.105]*	*[-0.961]*	*[-0.665]*
AVG CLIENT SIZE	-0.000	-0.001***	-0.000	-0.001***
	[-1.059]	*[-6.521]*	*[-0.151]*	*[-6.207]*
% CLIENT GC OPINION	-0.000	-0.001	-0.000	-0.001
	[-1.234]	*[-1.053]*	*[-0.771]*	*[-0.843]*
% CLIENT UQ OPINION	-0.000	-0.000**	-0.000	-0.000*
	[-0.276]	*[-2.095]*	*[-0.038]*	*[-1.658]*
% CLIENT LOSS	0.000	0.000	0.000	0.000
	[0.186]	*[0.941]*	*[0.234]*	*[1.208]*
INSPECTION + (*INSPECTION × %ENGAGE DEF × Average %ENGAGE DEF*)	0.000	0.003	0.000	0.002
p Value	0.632	0.293	0.836	0.633
REPORT + (*REPORT × %ENGAGE DEF × Average %ENGAGE DEF*)	0.004	0.006	0.004	0.009
p Value	0.001	0.023	0.016	0.012
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.6%	9.6%	20.4%	9.2%
No. of Observations	23,829	23,829	23,829	23,829

TABLE 5 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.001	0.009	0.001	0.008
	[0.674]	*[1.540]*	*[0.515]*	*[1.190]*
INSPECTION × %ENGAGE DEF	-0.003	-0.005	-0.003	-0.004
	[-1.044]	*[-0.684]*	*[-0.994]*	*[-0.431]*
REPORT	0.006***	0.011*	0.005**	0.014*
	[2.674]	*[1.956]*	*[2.089]*	*[1.809]*
REPORT × %ENGAGE DEF	-0.007**	-0.012*	-0.008**	-0.012
	[-2.271]	*[-1.773]*	*[-2.221]*	*[-1.247]*
AVG CLIENT GR	0.000	0.001	0.000	0.001
	[0.714]	*[1.077]*	*[0.810]*	*[0.683]*
AVG CLIENT ACC	-0.006	-0.007	-0.004	-0.004
	[-1.325]	*[-0.582]*	*[-0.843]*	*[-0.252]*
AVG CLIENT INV&REC	0.016**	0.008	0.016**	0.007
	[2.424]	*[0.737]*	*[2.327]*	*[0.568]*
AVG CLIENT ROA	0.001	0.003	0.001	0.005
	[0.507]	*[0.630]*	*[0.524]*	*[1.015]*
AVG CLIENT LEVERAGE	-0.001	-0.000	-0.001	-0.004
	[-0.725]	*[-0.059]*	*[-0.831]*	*[-0.754]*
AVG CLIENT CASH	0.001	0.002	0.001	-0.000
	[0.207]	*[0.135]*	*[0.218]*	*[-0.001]*
AVG CLIENT SIZE	-0.000	-0.007**	0.000	-0.007**
	[-0.284]	*[-2.494]*	*[0.330]*	*[-2.357]*
% CLIENT GC OPINION	-0.003	-0.012	-0.001	-0.012
	[-1.266]	*[-1.203]*	*[-0.264]*	*[-1.057]*
% CLIENT UQ OPINION	0.001	-0.007	0.001	-0.008
	[0.214]	*[-0.916]*	*[0.290]*	*[-0.950]*
% CLIENT LOSS	0.003	0.010	0.003	0.016
	[0.785]	*[0.912]*	*[0.729]*	*[1.238]*
INSPECTION + (*INSPECTION × %ENGAGE DEF × Average %ENGAGE DEF*)	0.000	0.007	0.000	0.007
p Value	0.887	0.102	0.940	0.201
REPORT + (*REPORT × %ENGAGE DEF × Average %ENGAGE DEF*)	0.003	0.007	0.002	0.010
p Value	0.030	0.087	0.155	0.062
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	25.4%	20.3%	24.6%	18.7%
No. of Observations	1,685	1,685	1,685	1,685

Notes: Panel A (B) in this table presents results from regressing changes in auditor market share on an indicator variable for the years in which an auditor is inspected by the PCAOB and the years in which the auditor's PCAOB inspection report is publicly disclosed, as well as interaction terms with the proportion of inspected engagements that receive audit deficiencies, Part I Findings, for the full sample of auditors (subsample of PCAOB inspected auditors). See Appendix A for variable definitions. The standard errors are clustered at the auditor-level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

TABLE 6

Industry-level analyses of effect of PCAOB oversight on changes in auditor market share

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔIND MKT SHARE*	*ΔIND MKT SHARE AW*	*ΔIND MKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔIND MKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.003**	0.001	0.003**	0.002
	[2.245]	*[0.698]*	*[2.148]*	*[0.827]*
REPORT × NO. SEC CLIENTS IN IND	0.014***	0.020***	0.019***	0.025***
	[3.421]	*[3.363]*	*[2.834]*	*[2.720]*
NO. SEC CLIENTS IN IND	-0.015***	-0.029***	-0.002	-0.002
	[-5.161]	*[-5.982]*	*[-0.504]*	*[-0.452]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.582]	*[0.585]*	*[0.256]*	*[0.546]*
AVG CLIENT ACC	-0.000	0.000	-0.000	0.000
	[-0.255]	*[0.415]*	*[-0.263]*	*[0.102]*
AVG CLIENT INV&REC	-0.000	0.000	-0.000	0.000
	[-0.372]	*[0.113]*	*[-0.428]*	*[0.002]*
AVG CLIENT ROA	0.000	0.000	0.000	0.001
	[0.817]	*[1.347]*	*[0.811]*	*[1.456]*
AVG CLIENT LEVERAGE	-0.000	0.000	0.000	0.000
	[-0.305]	*[0.131]*	*[0.148]*	*[0.474]*
AVG CLIENT CASH	-0.000	-0.000	-0.000	-0.000
	[-1.185]	*[-1.017]*	*[-0.927]*	*[-0.563]*
AVG CLIENT SIZE	-0.000***	-0.000***	-0.000**	-0.000***
	[-2.585]	*[-6.026]*	*[-2.285]*	*[-5.626]*
% CLIENT GC OPINION	-0.000	-0.000	-0.000	-0.000
	[-0.695]	*[-0.144]*	*[-0.653]*	*[-0.257]*
% CLIENT UQ OPINION	0.000	-0.000	0.000	-0.000
	[0.749]	*[-0.981]*	*[0.663]*	*[-0.968]*
% CLIENT LOSS	-0.000	0.000	-0.000	0.000
	[-0.331]	*[0.287]*	*[-0.565]*	*[0.109]*
REPORT + 0.69 × (*REPORT × NO. SEC CLIENTS IN IND*)	0.013	0.015	0.016	0.019
p Value	0.000	0.001	0.000	0.004
Client Industry Indicators	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	0.9%	0.8%	1.0%	0.8%
No. of Observations	1,017,383	1,017,383	1,017,383	1,017,383

TABLE 6 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔIND MKT SHARE*	*ΔIND MKT SHARE AW*	*ΔIND MKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔIND MKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.004**	0.005**	0.004**	0.005*
	[2.176]	*[2.110]*	*[1.975]*	*[1.946]*
REPORT × NO. SEC CLIENTS IN IND	0.015***	0.019***	0.018***	0.024***
	[3.392]	*[2.995]*	*[2.702]*	*[2.640]*
NO. SEC CLIENTS IN IND	-0.017***	-0.031***	-0.002	-0.003
	[-5.318]	*[-5.824]*	*[-0.803]*	*[-0.852]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.709]	*[0.567]*	*[0.442]*	*[0.828]*
AVG CLIENT ACC	-0.001	-0.003	-0.003	-0.008
	[-0.195]	*[-0.367]*	*[-0.348]*	*[-0.850]*
AVG CLIENT INV&REC	0.011	0.005	0.011	0.008
	[1.341]	*[0.567]*	*[1.210]*	*[0.823]*
AVG CLIENT ROA	0.000	0.004	0.003	0.007**
	[0.115]	*[1.081]*	*[0.940]*	*[2.065]*
AVG CLIENT LEVERAGE	-0.001	-0.000	-0.000	0.001
	[-0.513]	*[-0.006]*	*[-0.072]*	*[0.337]*
AVG CLIENT CASH	-0.012	-0.012	-0.009	-0.006
	[-1.602]	*[-1.417]*	*[-1.161]*	*[-0.683]*
AVG CLIENT SIZE	-0.001	-0.003**	-0.001	-0.004**
	[-0.852]	*[-2.175]*	*[-0.613]*	*[-2.164]*
% CLIENT GC OPINION	-0.011*	-0.007	-0.012**	-0.011*
	[-1.780]	*[-0.987]*	*[-2.022]*	*[-1.700]*
% CLIENT UQ OPINION	-0.002	-0.007	-0.001	-0.006
	[-0.436]	*[-1.649]*	*[-0.347]*	*[-1.370]*
% CLIENT LOSS	0.002	0.007	0.001	0.005
	[0.418]	*[1.527]*	*[0.191]*	*[1.134]*
REPORT + 0.69 × (*REPORT × NO. SEC CLIENTS IN IND*)	0.014	0.018	0.016	0.022
p Value	0.000	0.000	0.000	0.001
Client Industry Indicators	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	1.3%	1.2%	1.3%	1.1%
No. of Observations	52,323	52,323	52,323	52,323

Notes: Panel A (B) in this table presents results from regressing changes in auditor market share at the industry-level on an indicator variable for the years in which an auditor's PCAOB inspection report is publicly disclosed, and an interaction term with the number of SEC registered clients of that auditor in the industry for the full sample of auditors (subsample of PCAOB inspected auditors). See Appendix A for variable definitions. The standard errors are clustered at the auditor-level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

TABLE 7
Effect of local auditor regulators on the value of PCAOB oversight

Panel A: Descriptive information related to auditor oversight programs across countries

Country	Local Regulator	Local Regulator Member of IFIAR	Local Regulator Conducts Inspections	Local Regulator Discloses Insp. Reports
Argentina	None	Not Applicable	Not Applicable	Not Applicable
Australia	Since 2004	Since 2006	Since 2004	No
Brazil	Since 2006	Since 2006	Since 2011	No
Canada	Since 2003	Since 2006	Since 2003	No
Chile	None	Not Applicable	Not Applicable	Not Applicable
Colombia	None	Not Applicable	Not Applicable	Not Applicable
Germany	Since 2005	Since 2006	Since 2007	No
Greece	Since 2003	Since 2009	Since 2009	No
Hong Kong	None	Not Applicable	Not Applicable	Not Applicable
India	None	Not Applicable	Not Applicable	Not Applicable
Indonesia	Since 2012	Since 2012	Since 2012	No
Ireland	Since 2005	Since 2007	Since 2006	No
Israel	Since 2005	No	No	Not Applicable
Japan	Since 2004	Since 2006	Since 2004	No
Kazakhstan	None	Not Applicable	Not Applicable	Not Applicable
Malaysia	Since 2010	Since 2010	Since 2011	No
Mexico	None	Not Applicable	Not Applicable	Not Applicable
Netherlands	Since 2006	Since 2006	Since 2008	Since Sept. 2014
New Zealand	Since 2011	Since 2014	Since 2012	No
Norway	Since 2005	Since 2006	Since 2005	Since May 2005
Panama	None identified	Not Applicable	Not Applicable	Not Applicable
Papua New Guinea	None identified	Not Applicable	Not Applicable	Not Applicable
Peru	None identified	Not Applicable	Not Applicable	Not Applicable
Philippines	None identified	Not Applicable	Not Applicable	Not Applicable
Russia	Since 2009	Since 2016	No	Not Applicable
Singapore	Since 2004	Since 2006	Since 2005	No
South Africa	Since 2006	Since 2006	Since 2006	No
South Korea	Since 2005	Since 2007	Since 2006	No
Spain	Since 2006	Since 2006	Since 2007	No
Switzerland	Since 2005	Since 2007	Since 2007	No
Taiwan	Since 2004	Since 2008	Since 2009	No
Thailand	Since 2010	Since 2010	Since 2010	No
Turkey	Since 2009	Since 2009	Since 2012	No
Ukraine	Since 1993	No	Since 2010	No
U.A.E	Since 2004	Since 2009	Since 2008	No
United Kingdom	Since 2003	Since 2006	Since 2004	Since Dec. 2008

TABLE 7 - *continued*

Panel B: Measuring changes in auditor market share equally weighting all clients

Dependent Variable:	*ΔMKT SHARE*			
REPORT	0.004***	0.004***	0.004***	0.005
	[3.162]	*[3.010]*	*[3.439]*	*[1.310]*
REPORT × NO LOCAL REGULATOR	0.002			
	[0.548]			
REPORT × NOT IFIAR MEMBER		0.001		
		[0.255]		
REPORT × NO LOCAL INSPECTION			0.000	
			[0.151]	
REPORT × NO INSP REPORT DISCLOSURE				-0.001
				[-0.141]
REPORT + REPORT × Local Regulator Proxy	0.006	0.005	0.004	0.004
p Value	0.129	0.068	0.092	0.001
Control Variables	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.5%	22.5%	22.5%	22.5%
No. of Observations	23,829	23,829	23,829	23,829

Panel C: Measuring changes in auditor market share weighting all clients by total assets

Dependent Variable:	*ΔMKT SHARE AW*			
REPORT	0.005*	0.006*	0.005	0.017
	[1.797]	*[1.768]*	*[1.447]*	*[1.294]*
REPORT × NO LOCAL REGULATOR	0.008			
	[0.892]			
REPORT × NOT IFIAR MEMBER		0.002		
		[0.404]		
REPORT × NO LOCAL INSPECTION			0.005	
			[0.715]	
REPORT × NO INSP REPORT DISCLOSURE				-0.011
				[-0.813]
REPORT + REPORT × Local Regulator Proxy	0.013	0.008	0.010	0.006
p Value	0.135	0.119	0.086	0.029
Control Variables	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	9.5%	9.5%	9.5%	9.5%
No. of Observations	23,829	23,829	23,829	23,829

TABLE 7 - *continued*

Panel D: Measuring changes in auditor market share equally weighting all non-SEC registered clients

Dependent Variable:	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*			
REPORT	0.003**	0.003**	0.004***	0.005
	[2.535]	*[2.401]*	*[2.709]*	*[1.293]*
REPORT × NO LOCAL REGULATOR	0.002			
	[0.320]			
REPORT × NOT IFIAR MEMBER		0.000		
		[0.097]		
REPORT × NO LOCAL INSPECTION			0.000	
			[0.025]	
REPORT × NO INSP REPORT DISCLOSURE				-0.001
				[-0.335]
REPORT + REPORT × Local Regulator Proxy	0.005	0.003	0.004	0.004
p Value	0.302	0.199	0.231	0.016
Control Variables	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	20.3%	20.3%	20.3%	20.3%
No. of Observations	23,829	23,829	23,829	23,829

Panel E: Measuring changes in auditor market share weighting all non-SEC registered clients by total assets

Dependent Variable:	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*			
REPORT	0.007**	0.008**	0.007*	0.029
	[1.984]	*[1.961]*	*[1.702]*	*[1.057]*
REPORT × NO LOCAL REGULATOR	0.011			
	[0.942]			
REPORT × NOT IFIAR MEMBER		0.003		
		[0.350]		
REPORT × NO LOCAL INSPECTION			0.006	
			[0.744]	
REPORT × NO INSP REPORT DISCLOSURE				-0.021
				[-0.742]
REPORT + REPORT × Local Regulator Proxy	0.018	0.011	0.013	0.008
p Value	0.115	0.111	0.055	0.020
Control Variables	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	9.2%	9.1%	9.1%	9.1%
No. of Observations	23,829	23,829	23,829	23,829

Notes: This table presents results from regressing changes in auditor market share on indicator variables capturing different characteristics of local auditor regulators. See Appendix A for variable definitions. The standard errors are clustered at the auditor level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

Online Appendix

(NOT INTENDED FOR PUBLICATION)

TABLE OA1

Cross-section test: Effect of PCAOB oversight on changes in auditor market share conditional on Rule of Law

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.005***	0.008**	0.004**	0.011**
	[3.065]	*[2.446]*	*[2.298]*	*[2.446]*
REPORT × RULE OF LAW	-0.004*	-0.007	-0.003	-0.007
	[-1.922]	*[-1.387]*	*[-1.359]*	*[-0.983]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.147]	*[1.554]*	*[0.211]*	*[1.103]*
AVG CLIENT ACC	-0.000	-0.001	-0.000	-0.001
	[-0.974]	*[-1.258]*	*[-0.776]*	*[-0.856]*
AVG CLIENT INV&REC	0.001*	0.001	0.001*	0.001
	[1.703]	*[0.994]*	*[1.715]*	*[0.896]*
AVG CLIENT ROA	0.000	0.001	0.000	0.001
	[0.076]	*[1.131]*	*[0.142]*	*[1.416]*
AVG CLIENT LEVERAGE	0.000	0.000	0.000	0.000
	[0.148]	*[0.892]*	*[0.190]*	*[1.170]*
AVG CLIENT CASH	-0.000	0.000	-0.000	-0.000
	[-0.646]	*[0.596]*	*[-1.101]*	*[-0.141]*
AVG CLIENT SIZE	-0.000	-0.000	-0.000	-0.001
	[-1.102]	*[-0.173]*	*[-1.006]*	*[-0.714]*
% CLIENT GC OPINION	-0.000	-0.001***	-0.000	-0.001***
	[-1.032]	*[-6.530]*	*[-0.133]*	*[-6.197]*
% CLIENT UQ OPINION	-0.000	-0.001	-0.000	-0.001
	[-1.248]	*[-1.171]*	*[-0.762]*	*[-0.908]*
% CLIENT LOSS	-0.000	-0.000**	-0.000	-0.000*
	[-0.305]	*[-2.133]*	*[-0.063]*	*[-1.688]*
REPORT +				
REPORT × RULE OF LAW	0.001	0.001	0.001	0.004
p Value	0.063	0.687	0.179	0.432
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.6%	9.5%	20.3%	9.1%
No. of Observations	23,829	23,829	23,829	23,829

TABLE OA1 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.006**	0.009*	0.004	0.014*
	[2.435]	*[1.844]*	*[1.637]*	*[1.942]*
REPORT × RULE OF LAW	-0.006**	-0.010	-0.004	-0.013
	[-2.301]	*[-1.539]*	*[-1.518]*	*[-1.316]*
AVG CLIENT GR	0.000	0.001	0.000	0.001
	[0.887]	*[1.142]*	*[0.952]*	*[0.748]*
AVG CLIENT ACC	-0.005	-0.005	-0.003	-0.002
	[-1.111]	*[-0.408]*	*[-0.675]*	*[-0.100]*
AVG CLIENT INV&REC	0.017**	0.009	0.017**	0.008
	[2.510]	*[0.813]*	*[2.403]*	*[0.650]*
AVG CLIENT ROA	0.000	0.002	0.001	0.004
	[0.252]	*[0.517]*	*[0.304]*	*[0.941]*
AVG CLIENT LEVERAGE	0.003	0.009	0.003	0.015
	[0.734]	*[0.869]*	*[0.665]*	*[1.210]*
AVG CLIENT CASH	-0.001	-0.000	-0.002	-0.004
	[-1.046]	*[-0.102]*	*[-1.098]*	*[-0.817]*
AVG CLIENT SIZE	0.000	0.001	0.001	-0.002
	[0.081]	*[0.037]*	*[0.122]*	*[-0.115]*
% CLIENT GC OPINION	-0.000	-0.006**	0.000	-0.007**
	[-0.194]	*[-2.457]*	*[0.403]*	*[-2.296]*
% CLIENT UQ OPINION	-0.003	-0.013	-0.000	-0.014
	[-1.206]	*[-1.315]*	*[-0.147]*	*[-1.159]*
% CLIENT LOSS	0.000	-0.007	0.001	-0.008
	[0.139]	*[-0.892]*	*[0.205]*	*[-0.915]*
REPORT + *REPORT × RULE OF LAW*	0.000	-0.001	0.000	0.001
p Value	0.831	0.829	0.805	0.952
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	25.3%	20.1%	24.4%	18.6%
No. of Observations	1,685	1,685	1,685	1,685

Notes: Panel A (B) in this table presents results from regressing changes in auditor market share on indicator variables for the years in which the auditor's PCAOB inspection report is publicly disclosed, as well as an interaction term with an indicator variable for when the country has a high rule of law for the full sample of auditors (subsample of PCAOB inspected auditors). *RULE OF LAW* is an indicator variable based on the "rule of law" score provided in the Worldwide Governance Indicators dataset for a given country and the corresponding year. The variable is equal to one for rule of law scores in the top 25th percentile of the distribution restricted to the 250 observations with PCAOB reports (score above 1.74302). See Appendix A in the paper for all other variable definitions. The standard errors are clustered at the auditor level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

TABLE OA2

Cross-section test: Effect of PCAOB oversight on changes in auditor market share conditional on country corruption level

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.005***	0.010***	0.004**	0.014***
	[2.759]	*[2.918]*	*[2.186]*	*[3.005]*
REPORT × LOW CORRUPTION	-0.001	-0.014***	-0.001	-0.018***
	[-0.551]	*[-2.949]*	*[-0.677]*	*[-2.917]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.103]	*[1.549]*	*[0.180]*	*[1.105]*
AVG CLIENT ACC	-0.000	-0.001	-0.000	-0.001
	[-0.988]	*[-1.313]*	*[-0.792]*	*[-0.905]*
AVG CLIENT INV&REC	0.001*	0.001	0.001*	0.001
	[1.682]	*[1.011]*	*[1.703]*	*[0.925]*
AVG CLIENT ROA	0.000	0.001	0.000	0.001
	[0.088]	*[1.207]*	*[0.157]*	*[1.484]*
AVG CLIENT LEVERAGE	0.000	0.000	0.000	0.000
	[0.141]	*[0.980]*	*[0.195]*	*[1.269]*
AVG CLIENT CASH	-0.000	0.000	-0.000	-0.000
	[-0.589]	*[0.648]*	*[-1.056]*	*[-0.103]*
AVG CLIENT SIZE	-0.000	-0.000	-0.000	-0.001
	[-1.066]	*[-0.129]*	*[-0.975]*	*[-0.670]*
% CLIENT GC OPINION	-0.000	-0.001***	-0.000	-0.001***
	[-1.050]	*[-6.493]*	*[-0.138]*	*[-6.154]*
% CLIENT UQ OPINION	-0.000	-0.000	-0.000	-0.000
	[-1.181]	*[-0.974]*	*[-0.704]*	*[-0.713]*
% CLIENT LOSS	-0.000	-0.000**	-0.000	-0.000
	[-0.287]	*[-2.075]*	*[-0.046]*	*[-1.629]*
REPORT + *REPORT × LOW CORRUPTION*	0.004	-0.004	0.003	-0.004
p Value	0.001	0.254	0.075	0.334
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.5%	9.6%	20.3%	9.2%
No. of Observations	23,829	23,829	23,829	23,829

TABLE OA2 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.004*	0.009**	0.003	0.014**
	[1.970]	*[2.056]*	*[1.445]*	*[2.260]*
REPORT × LOW CORRUPTION	-0.002	-0.014**	-0.002	-0.021**
	[-0.691]	*[-2.172]*	*[-0.925]*	*[-2.424]*
AVG CLIENT GR	0.000	0.001	0.000	0.001
	[0.758]	*[1.069]*	*[0.856]*	*[0.685]*
AVG CLIENT ACC	-0.006	-0.007	-0.004	-0.004
	[-1.271]	*[-0.572]*	*[-0.808]*	*[-0.267]*
AVG CLIENT INV&REC	0.016**	0.009	0.016**	0.008
	[2.443]	*[0.794]*	*[2.368]*	*[0.642]*
AVG CLIENT ROA	0.000	0.003	0.001	0.005
	[0.280]	*[0.589]*	*[0.336]*	*[1.034]*
AVG CLIENT LEVERAGE	0.003	0.010	0.003	0.017
	[0.734]	*[0.965]*	*[0.691]*	*[1.328]*
AVG CLIENT CASH	-0.001	-0.001	-0.002	-0.004
	[-0.893]	*[-0.122]*	*[-1.027]*	*[-0.863]*
AVG CLIENT SIZE	0.001	0.001	0.001	-0.002
	[0.190]	*[0.061]*	*[0.193]*	*[-0.092]*
% CLIENT GC OPINION	-0.000	-0.006**	0.000	-0.007**
	[-0.264]	*[-2.472]*	*[0.357]*	*[-2.316]*
% CLIENT UQ OPINION	-0.003	-0.012	-0.000	-0.012
	[-1.024]	*[-1.235]*	*[-0.030]*	*[-1.077]*
% CLIENT LOSS	0.000	-0.006	0.001	-0.007
	[0.158]	*[-0.773]*	*[0.246]*	*[-0.775]*
REPORT + *REPORT × LOW CORRUPTION*	0.002	-0.005	0.001	-0.007
p Value	0.119	0.253	0.719	0.236
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	25.1%	20.1%	24.3%	18.7%
No. of Observations	1,685	1,685	1,685	1,685

Notes: Panel A (B) in this table presents results from regressing changes in auditor market share on indicator variables for the years in which the auditor's PCAOB inspection report is publicly disclosed, as well as an interaction term with an indicator variable for when the country has low corruption for the full sample of auditors (subsample of PCAOB inspected auditors). *LOW CORRUPTION* is an indicator variable based on the "control of corruption" score provided in the Worldwide Governance Indicators dataset for a given country-year. The variable is equal to one for control of corruption scores in the top 25th percentile of the distribution restricted to the 250 observations with PCAOB reports (score above 1.999403). See Appendix A in the paper for all other variable definitions. The standard errors are clustered at the auditor level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

TABLE OA3

Effect of first versus subsequent PCAOB inspections on changes in auditor market share

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.007***	0.006	0.006**	0.010
	[3.100]	*[1.053]*	*[2.280]*	*[1.269]*
REPORT × FIRST REPORT	-0.004*	0.001	-0.003	-0.002
	[-1.660]	*[0.083]*	*[-1.156]*	*[-0.178]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.086]	*[1.527]*	*[0.164]*	*[1.085]*
AVG CLIENT ACC	-0.000	-0.001	-0.000	-0.001
	[-0.977]	*[-1.261]*	*[-0.778]*	*[-0.859]*
AVG CLIENT INV&REC	0.001*	0.001	0.001*	0.001
	[1.704]	*[0.961]*	*[1.715]*	*[0.875]*
AVG CLIENT ROA	-0.000	0.001	0.000	0.001
	[-0.006]	*[1.128]*	*[0.088]*	*[1.387]*
AVG CLIENT LEVERAGE	-0.000	0.000	-0.000	-0.000
	[-0.602]	*[0.632]*	*[-1.074]*	*[-0.108]*
AVG CLIENT CASH	-0.000	-0.000	-0.000	-0.001
	[-1.066]	*[-0.154]*	*[-0.980]*	*[-0.697]*
AVG CLIENT SIZE	-0.000	-0.001***	-0.000	-0.001***
	[-1.073]	*[-6.539]*	*[-0.163]*	*[-6.229]*
% CLIENT GC OPINION	-0.000	-0.001	-0.000	-0.001
	[-1.228]	*[-1.103]*	*[-0.744]*	*[-0.864]*
% CLIENT UQ OPINION	-0.000	-0.000**	-0.000	-0.000*
	[-0.298]	*[-2.118]*	*[-0.057]*	*[-1.677]*
% CLIENT LOSS	0.000	0.000	0.000	0.000
	[0.071]	*[0.878]*	*[0.134]*	*[1.149]*
REPORT + *REPORT × FIRST REPORT*	0.003	0.007	0.003	0.008
p Value	0.042	0.050	0.102	0.034
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.6%	9.5%	20.3%	9.1%
No. of Observations	23,829	23,829	23,829	23,829

TABLE OA3 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
REPORT	0.006**	0.010	0.004	0.015*
	[1.980]	*[1.544]*	*[1.225]*	*[1.668]*
REPORT × FIRST REPORT	-0.004	-0.006	-0.003	-0.010
	[-1.368]	*[-0.966]*	*[-0.784]*	*[-1.098]*
AVG CLIENT GR	0.000	0.001	0.000	0.001
	[0.758]	*[1.069]*	*[0.856]*	*[0.688]*
AVG CLIENT ACC	-0.006	-0.006	-0.004	-0.003
	[-1.253]	*[-0.507]*	*[-0.777]*	*[-0.197]*
AVG CLIENT INV&REC	0.016**	0.008	0.016**	0.007
	[2.416]	*[0.742]*	*[2.345]*	*[0.567]*
AVG CLIENT ROA	0.000	0.002	0.000	0.004
	[0.147]	*[0.456]*	*[0.251]*	*[0.822]*
AVG CLIENT LEVERAGE	-0.001	-0.000	-0.002	-0.004
	[-0.865]	*[-0.008]*	*[-0.986]*	*[-0.737]*
AVG CLIENT CASH	0.001	0.002	0.001	-0.001
	[0.185]	*[0.099]*	*[0.205]*	*[-0.042]*
AVG CLIENT SIZE	-0.000	-0.007**	0.000	-0.007**
	[-0.267]	*[-2.504]*	*[0.345]*	*[-2.370]*
% CLIENT GC OPINION	-0.003	-0.012	-0.000	-0.013
	[-1.004]	*[-1.239]*	*[-0.032]*	*[-1.080]*
% CLIENT UQ OPINION	0.000	-0.007	0.001	-0.009
	[0.085]	*[-0.925]*	*[0.172]*	*[-0.960]*
% CLIENT LOSS	0.003	0.009	0.003	0.014
	[0.657]	*[0.825]*	*[0.612]*	*[1.157]*
REPORT + *REPORT × FIRST REPORT*	0.002	0.004	0.001	0.005
p Value	0.104	0.263	0.247	0.179
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	25.2%	20.0%	24.3%	18.6%
No. of Observations	1,685	1,685	1,685	1,685

Notes: Panel A (B) in this table presents results from regressing changes in auditor market share on indicator variables for the years in which the auditor's PCAOB inspection report is publicly disclosed, as well as an interaction term with an indicator variable for the an auditor's first inspection report for the full sample of auditors (subsample of PCAOB inspected auditors). *FIRST REPORT* is an indicator variable equal to one for the year in which a PCAOB inspected auditor's first inspection report is publicly disclosed. See Appendix A in the paper for all other variable definitions. The standard errors are clustered at the auditor level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

TABLE OA4

Effect of PCAOB oversight on changes in auditor market share conditional on the presence of PCAOB identified quality control deficiency in the inspection report

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.001	0.004	0.001	0.003
	[0.971]	*[0.943]*	*[0.787]*	*[0.540]*
INSPECTION × %ENGAGE DEF	-0.003	-0.002	-0.003	-0.002
	[-1.164]	*[-0.325]*	*[-1.139]*	*[-0.273]*
INSPECTION × Q CONTROL DEF	0.001	-0.005	0.001	-0.004
	[0.557]	*[-0.962]*	*[0.671]*	*[-0.505]*
REPORT	0.006***	0.011**	0.006***	0.014**
	[3.110]	*[2.452]*	*[2.589]*	*[2.419]*
REPORT × %ENGAGE DEF	-0.005*	-0.012**	-0.006*	-0.012*
	[-1.720]	*[-2.280]*	*[-1.776]*	*[-1.738]*
REPORT × Q CONTROL DEF	-0.002	-0.003	-0.002	-0.006
	[-1.298]	*[-1.104]*	*[-1.037]*	*[-1.549]*
INSPECTION + (*INSPECTION × %ENGAGE DEF × Average %ENGAGE DEF*)	0.000	0.003	0.000	0.002
p Value	0.694	0.286	0.910	0.630
INSPECTION + *INSPECTION × Q CONTROL DEF*	0.002	-0.001	0.002	-0.001
p Value	0.256	0.936	0.285	0.903
REPORT + (*REPORT × %ENGAGE DEF × Average %ENGAGE DEF*)	0.004	0.007	0.004	0.010
p Value	0.002	0.024	0.017	0.013
REPORT + *REPORT × Q CONTROL DEF*	0.004	0.008	0.004	0.008
p Value	0.097	0.040	0.161	0.134
Control Variables	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.6%	9.6%	20.4%	9.2%
No. of Observations	23,829	23,829	23,829	23,829

TABLE OA4 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.001	0.009	0.001	0.008
	[0.655]	*[1.552]*	*[0.493]*	*[1.193]*
INSPECTION × %ENGAGE DEF	-0.003	-0.004	-0.003	-0.003
	[-1.076]	*[-0.533]*	*[-1.042]*	*[-0.320]*
INSPECTION × Q CONTROL DEF	0.001	-0.010	0.002	-0.009
	[0.699]	*[-1.264]*	*[0.826]*	*[-0.808]*
REPORT	0.007***	0.011*	0.006**	0.014*
	[2.692]	*[1.943]*	*[2.103]*	*[1.808]*
REPORT × %ENGAGE DEF	-0.007**	-0.012*	-0.007**	-0.011
	[-2.156]	*[-1.830]*	*[-2.114]*	*[-1.231]*
REPORT × Q CONTROL DEF	-0.003	0.001	-0.002	-0.004
	[-1.035]	*[0.131]*	*[-0.869]*	*[-0.629]*
INSPECTION + (*INSPECTION × %ENGAGE DEF × Average %ENGAGE DEF*)	0.000	0.008	0.000	0.007
p Value	0.943	0.098	0.870	0.206
INSPECTION + *INSPECTION × Q CONTROL DEF*	0.002	-0.001	0.003	-0.001
p Value	0.337	0.916	0.345	0.909
REPORT + (*REPORT × %ENGAGE DEF × Average %ENGAGE DEF*)	0.004	0.007	0.003	0.010
p Value	0.025	0.099	0.140	0.065
REPORT + *REPORT × Q CONTROL DEF*	0.004	0.012	0.004	0.010
p Value	0.210	0.045	0.336	0.164
Control Variables	Included	Included	Included	Included
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	25.4%	20.4%	24.6%	18.7%
No. of Observations	1,685	1,685	1,685	1,685

Notes: Panel A (B) in this table presents results from regressing changes in auditor market share on an indicator variable for the years in which an auditor is inspected by the PCAOB and the years in which the auditor's PCAOB inspection report is publicly disclosed, as well as interaction terms with the proportion of inspected engagements that receive audit deficiencies, Part I Findings, and inspection reports that later have publicly disclosed quality control deficiencies, Part II Findings, for the full sample of auditors (subsample of PCAOB inspected auditors). *INSPECTION × Q CONTROL DEF* is an indicator variable equal to one for the year where an inspection report is released by the PCAOB (*INSPECTION* is equal to one), and this inspection report will subsequently be updated with public quality control criticisms. *REPORT × Q CONTROL DEF* is an indicator variable equal to one for the year where an inspection report is released by the PCAOB (*REPORT* is equal to one), and this inspection report will subsequently be updated with public quality control criticisms. See Appendix A in the paper for all other variable definitions. The standard errors are clustered at the auditor level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.

TABLE OA5

Market share changes following the public disclosure of Part II Findings

Panel A: Sample comprising of PCAOB inspected auditors and auditors free of PCAOB oversight

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.000	0.004	0.000	0.002
	[0.496]	*[1.101]*	*[0.227]*	*[0.509]*
REPORT	0.004***	0.006**	0.004**	0.009**
	[3.334]	*[2.334]*	*[2.506]*	*[2.519]*
Q CONTROL DEF DISCLOSE	0.001	-0.001	0.001	-0.002
	[0.687]	*[-0.288]*	*[0.259]*	*[-0.384]*
AVG CLIENT GR	0.000	0.000	0.000	0.000
	[0.100]	*[1.532]*	*[0.174]*	*[1.088]*
AVG CLIENT ACC	-0.000	-0.001	-0.000	-0.001
	[-0.980]	*[-1.254]*	*[-0.781]*	*[-0.856]*
AVG CLIENT INV&REC	0.001*	0.001	0.001*	0.001
	[1.681]	*[0.992]*	*[1.696]*	*[0.883]*
AVG CLIENT ROA	0.000	0.001	0.000	0.001
	[0.077]	*[1.132]*	*[0.143]*	*[1.417]*
AVG CLIENT LEVERAGE	-0.000	0.000	-0.000	-0.000
	[-0.645]	*[0.554]*	*[-1.087]*	*[-0.132]*
AVG CLIENT CASH	-0.000	-0.000	-0.000	-0.001
	[-1.071]	*[-0.123]*	*[-0.982]*	*[-0.681]*
AVG CLIENT SIZE	-0.000	-0.001***	-0.000	-0.001***
	[-1.068]	*[-6.526]*	*[-0.159]*	*[-6.204]*
% CLIENT GC OPINION	-0.000	-0.001	-0.000	-0.001
	[-1.188]	*[-1.005]*	*[-0.725]*	*[-0.801]*
% CLIENT UQ OPINION	-0.000	-0.000**	-0.000	-0.000*
	[-0.290]	*[-2.104]*	*[-0.052]*	*[-1.667]*
% CLIENT LOSS	0.000	0.000	0.000	0.000
	[0.126]	*[0.881]*	*[0.172]*	*[1.160]*
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	22.5%	9.5%	20.3%	9.1%
No. of Observations	23,829	23,829	23,829	23,829

TABLE OA5 - *continued*

Panel B: Staggered design with sample restricted to PCAOB inspected auditors

Dependent Variable:	*ΔMKT SHARE*	*ΔMKT SHARE AW*	*ΔMKT SHARE OF NON SEC REGISTERED FIRMS*	*ΔMKT SHARE AW OF NON SEC REGISTERED FIRMS*
INSPECTION	0.000	0.007*	0.000	0.007
	[0.233]	*[1.691]*	*[0.014]*	*[1.324]*
REPORT	0.004**	0.006*	0.003	0.010*
	[2.306]	*[1.724]*	*[1.482]*	*[1.887]*
Q CONTROL DEF DISCLOSE	0.005	0.000	0.004	0.001
	[1.244]	*[0.029]*	*[0.904]*	*[0.125]*
AVG CLIENT GR	0.000	0.001	0.000	0.001
	[0.764]	*[1.097]*	*[0.859]*	*[0.700]*
AVG CLIENT ACC	-0.006	-0.006	-0.004	-0.003
	[-1.269]	*[-0.525]*	*[-0.787]*	*[-0.209]*
AVG CLIENT INV&REC	0.016**	0.009	0.016**	0.008
	[2.404]	*[0.807]*	*[2.325]*	*[0.631]*
AVG CLIENT ROA	0.000	0.002	0.001	0.004
	[0.230]	*[0.478]*	*[0.290]*	*[0.891]*
AVG CLIENT LEVERAGE	-0.001	-0.001	-0.002	-0.004
	[-0.987]	*[-0.125]*	*[-1.062]*	*[-0.834]*
AVG CLIENT CASH	0.001	0.002	0.001	-0.000
	[0.164]	*[0.137]*	*[0.180]*	*[-0.007]*
AVG CLIENT SIZE	-0.000	-0.007**	0.000	-0.007**
	[-0.299]	*[-2.489]*	*[0.319]*	*[-2.351]*
% CLIENT GC OPINION	-0.003	-0.011	-0.000	-0.011
	[-1.078]	*[-1.101]*	*[-0.104]*	*[-0.983]*
% CLIENT UQ OPINION	0.000	-0.007	0.001	-0.009
	[0.120]	*[-0.975]*	*[0.197]*	*[-0.994]*
% CLIENT LOSS	0.003	0.009	0.003	0.015
	[0.676]	*[0.858]*	*[0.617]*	*[1.191]*
Year × Country Indicators	Included	Included	Included	Included
Auditor Indicators	Included	Included	Included	Included
R-Squared	25.1%	20.2%	24.3%	18.6%
No. of Observations	1,685	1,685	1,685	1,685

Notes: Panel A (B) in this table presents results from regressing changes in auditor market share on indicator variables for the years in which an auditor is inspected by the PCAOB, the years in which the auditor's PCAOB inspection report is publicly disclosed for the full sample of auditors, and the years in which the auditor's un-remediated quality control deficiencies are disclosed as a Part II Findings for the full sample of auditors (subsample of PCAOB inspected auditors). *Q CONTROL DEF DISCLOSE* is an indicator variable that equals one for the years in which an auditor's Part II Findings are publicly disclosed in its inspection report. We obtain these dates for 10 of the 21 publicly disclosed Part II Findings in our sample by examining the document properties of PCAOB inspection reports. All other variables are defined in the Appendix A in the paper. The standard errors are clustered at the auditor level. ***, **, * signifies statistical significance at the two-tailed 1%, 5%, and 10% levels.

TABLE OA6

Aggregate market share changes of auditors not subject to PCAOB oversight

Dependent Variable:	*Δ AGGREGATE MKT SHARE*	*Δ AGGREGATE MKT SHARE AW*	*Δ AGGREGATE MKT SHARE OF NON SEC REGISTERED FIRMS*	*Δ AGGREGATE MKT SHARE AW OF NON SEC REGISTERED FIRMS*
COUNTRY INSPECTION	-0.005	-0.001	-0.005	0.001
	[-1.302]	*[-0.233]*	*[-1.526]*	*[0.061]*
COUNTRY REPORT	-0.008**	-0.014**	-0.007**	-0.014**
	[-2.407]	*[-2.525]*	*[-2.128]*	*[-2.098]*
AVG CLIENT GR	-0.001	-0.001	-0.001	-0.002
	[-0.890]	*[-0.932]*	*[-0.918]*	*[-0.971]*
AVG CLIENT ACC	0.010	0.046	0.021	0.030
	[0.290]	*[0.592]*	*[0.639]*	*[0.456]*
AVG CLIENT INV&REC	-0.030	-0.063	-0.007	0.009
	[-1.245]	*[-1.328]*	*[-0.397]*	*[0.310]*
AVG CLIENT ROA	0.011	0.025**	0.009	0.004
	[1.681]	*[2.125]*	*[1.398]*	*[0.421]*
AVG CLIENT LEVERAGE	-0.000	0.002	-0.001	-0.001
	[-0.310]	*[1.211]*	*[-0.362]*	*[-0.461]*
AVG CLIENT CASH	0.025	0.123***	0.024	0.052
	[0.914]	*[3.007]*	*[0.867]*	*[1.280]*
AVG CLIENT SIZE	-0.000	0.001	0.000	0.001
	[-0.085]	*[0.441]*	*[0.313]*	*[0.530]*
% CLIENT GC OPINION	0.026	-0.015	0.042	0.049
	[0.811]	*[-0.239]*	*[1.355]*	*[1.004]*
% CLIENT UQ OPINION	0.004	0.030	0.005	-0.002
	[0.625]	*[1.015]*	*[0.684]*	*[-0.163]*
% CLIENT LOSS	-0.005	0.028*	-0.001	0.019
	[-0.564]	*[1.782]*	*[-0.192]*	*[1.112]*
R-Squared	6.6%	6.4%	6.0%	3.8%
No. of Observations	360	360	358	357

Notes: This table presents the results from a country level analysis where we regress changes in the aggregate market share of all auditors not subject to PCAOB oversight on indicator variables for the years in which at least one competing auditor is PCAOB inspected and an indicator variable for the years in which at least one competing auditor's PCAOB inspection report is publicly disclosed. The unit of observation is a country-year. *COUNTRY INSPECTION* is an indicator variable that equals one for the years in which at least one auditor in the country is inspected by the PCAOB. *COUNTRY REPORT* is an indicator variable that equals one for the years in which at least one inspection report is publicly released by the PCAOB. All control variables are defined in Appendix A in the paper, aggregated at the country-year level. The standard errors are clustered at the auditor level. ***, **, * signifies statistical significance at the two-tailed 1%, 5%, and 10% levels.

TABLE OA7
Client-level analyses of auditor changes

Dependent Variable:	*SWITCH TO INSPECTED AUDITOR*	
Sample Used:	*Full Sample of Clients*	*Non-SEC Registered Clients*
INCUMBENT INSPECTION YEAR	0.002	0.003
	[0.819]	*[1.066]*
INCUMBENT REPORT YEAR	-0.020***	-0.021***
	[-4.390]	*[-3.959]*
DISCRETIONARY ACCRUALS	0.004	0.004
	[1.213]	*[1.292]*
CASH	0.003	0.003
	[1.207]	*[0.989]*
GOING CONCERN	0.001	0.000
	[0.589]	*[0.167]*
UNQUALIFIED OPINION	0.000	0.000
	[0.417]	*[0.355]*
GROWTH	0.000	-0.000
	[0.310]	*[-0.213]*
LEVERAGE	0.004	0.003
	[1.556]	*[1.367]*
INV&REC	0.005*	0.005*
	[1.673]	*[1.661]*
LOSS	0.002**	0.002**
	[2.307]	*[2.088]*
SIZE	0.000	0.001
	[0.544]	*[1.311]*
ROA	0.004	0.004
	[1.351]	*[1.087]*
Year × Country Indicators	Included	Included
Auditor Indicators	Included	Included
R-Squared	6.8%	7.5%
No. of Observations	141,513	129,991

Notes: This table presents results from regressing an indicator variable for client-years in which there is (i) an auditor switch and (ii) the new auditor is a PCAOB inspected auditor (*SWITCH TO INSPECTED AUDITOR*) on indicator variables for the client-years in which the incumbent auditor receives a PCAOB inspection (*INCUMBENT INSPECTION YEAR*) or inspection report becomes public (*INCUMBENT REPORT YEAR*). All other variables are defined in the Appendix A in the paper. The standard errors are clustered at the auditor level. ***, **, and * denote statistical significance at the two-tailed 1%, 5% and 10%, respectively.