Does auditor regulatory oversight affect corporate financing and investment decisions?

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ABSTRACT

I examine whether auditor regulatory oversight reduces external financing frictions and leads to changes in companies' financing and investing policies. I use the Public Company Accounting Oversight Board's (PCAOBs) international inspection program as a setting to generate within-country variation in auditor oversight. Using a difference-in-differences design that exploits the staggered nature of PCAOB international inspections, I find that companies respond to the increase in auditor oversight by issuing additional external capital amounting to 0.5% of their assets and increasing capital expenditures by 0.3% of their assets. Further, these effects are significantly larger for financially constrained companies. Finally, the effect of auditor oversight on companies' financing and investing policies depends on the content of its auditor's PCAOB inspection report; companies whose auditors' are criticized for having deficient engagement practices respond to PCAOB oversight with significantly smaller changes in financing and investment. This paper shows that auditor regulatory oversight increases companies' external financing capacity, which in turn facilitates corporate investment.

1. Introduction

One of the primary purposes of external financial reporting is to facilitate the exchange of capital between investors and companies. For example, financial statements are used by companies to write contracts with their stakeholders (e.g., debt holders, managers, suppliers, etc.) and to provide information about company performance to outsiders. The degree to which investors use the information in financial reports for contracting and decision-making depends on the reliability of those reports; that is, the faith investors have in its accuracy. An independent audit is a primary mechanism through which companies assure investors of the reliability of their financial reports (Jensen and Meckling 1976; Watts and Zimmerman 1983).[1] However, there are significant agency issues between auditors, investors, and managers that can limit the extent to which independent audits assure company stakeholders about the reliability and accuracy of financial reports (e.g., Antle 1984; Acemoglu and Gietzmann 1997, Coffee 2006). In particular, since auditors are compensated by the companies whose financial statements they are supposed to verify, it is conceivable that auditors compromise their independence by allowing companies excessive financial reporting discretion (DeFond and Zhang 2014).

In this paper, I examine whether regulatory oversight of a company's auditor affects the company's financing and investing behavior. If auditor regulatory oversight helps mitigate the agency issues between auditors and the company investors, then such oversight can increase the degree to which investors rely on audited financial statements for decision-making. Specifically, if regulatory oversight provides investors with additional assurance that the audited financial statements are reliable, investors are likely to place more weight on the information in those audited reports for capital allocation and contracting (e.g., Ijiri 1975, Minnis 2011). Ceteris paribus, the increased reliance on audited financial statements by external stakeholders can lower monitoring costs, thereby increasing a company's access to finance (Jensen and Meckling 1976).

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[1] Following the naming convention of the PCAOB and the law literature, I refer to firms performing audits as "auditors" or "audit firms" and those receiving audits as "companies" throughout the paper.

In principal, auditor regulatory oversight can be beneficial because the audit process is largely unobservable to investors. Thus, it is difficult for investors to assess the quality of the work done by the auditors. In addition, it is difficult for auditors to differentiate themselves on the basis of audit quality precisely because the audit process is unobservable to investors (Doty 2012, 2014; PCAOB 2015). Under such conditions, theory suggests that a public regulator can increase the confidence investors have in an audit by inspecting the work performed by auditors and by ensuring that the audit process conforms to certain minimum standards of quality and independence (e.g., Landes and Posner 1975, Prichard 2006, Coates 2007).[2]

Ex ante, however, there are several reasons why auditor regulatory oversight might not increase the perceived reliability of audited financial statements. Specifically, regulators also have agency problems that can limit their effectiveness (Coarse 1960). For example, regulation is typically created by political processes that are influenced by the lobbying efforts of the regulated companies (Stigler 1971; Peltzman 1976). Not only can such lobbying efforts reduce the effectiveness of a public regulator but can also serve the special interests of the regulated agents rather than the public interest (see e.g., Mahoney 2001, Rajan and Zingales 2003). Thus, whether regulatory oversight of auditors increases investor confidence in the audit process and translates into greater access to external finance is an empirical question.

I use the Public Company Accounting Oversight Board (PCAOB) international inspection program as a setting to test whether auditor regulatory oversight affects companies' financing and investing behavior. The Sarbanes-Oxley Act of 2002 (SOX) requires the PCAOB to inspect the auditing procedures of all auditors that participate in the audit of companies registered with the U.S. Securities and Exchange Commission (SEC). Thus, a non-U.S.

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[2] For example, a regulator could inspect confidential work papers related to audit engagements, examine compensation contracts and employee incentive plans in audit firms, and evaluate the overall audit firm culture.

company's non-U.S. auditor could be subject to PCAOB oversight if the auditor has *another client* that is registered with the SEC (e.g., a client cross-listed on a U.S. stock exchange). In other words, a company outside the U.S. with no direct exposure to U.S. securities regulation could be indirectly affected by PCAOB oversight if its auditor has even one client that is registered with the SEC. As a result, the PCAOB international inspection program creates variation in auditor oversight within a country while holding constant all other country-level regulation. An important advantage of the PCAOB's *international* inspection program is that all non-U.S. auditors, except the big-four auditors in Canada, have thus far been subject to only triennial (instead of annual) inspections, thereby creating significant variation in the timing of auditor inspections.[3]

To identify the effect of auditor oversight on company behavior, I construct a sample of non-U.S. companies that are audited by PCAOB-inspected auditors but are not directly subject to any SEC or PCAOB regulation. Focusing exclusively on a sample of non-U.S. companies that employ PCAOB-inspected auditors mitigates any selection concerns that companies employing PCAOB-inspected auditors are systematically different than those without PCAOB-inspected auditors. The staggering in the timing of PCAOB inspections makes such a research design choice feasible. I proxy for changes in auditor oversight using indicator variables for the period following the completion of an auditor's inspection fieldwork and the public disclosure of its inspection report.[4] To ensure that the effect of PCAOB oversight on company behavior is identified only from the differences in inspection timing of its auditor, I estimate regressions that include indicator variables for each country-industry-year combination (i.e., country *times* industry *times* year fixed effects). These fixed effects control for all time-varying and time-

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[3] Auditors that issue an audit report for more than 100 SEC registered companies are subject to annual inspections. The Canadian big-four auditors are the only non-U.S. auditors to have thus far met this criterion.

[4] I discuss the PCAOB inspection process and the information contained in the inspection reports in Section 2.

invariant country- and industry-characteristics that affect companies' financing and investing decisions (e.g., country or industry-level shocks to growth opportunities, country or industry-level shocks to external financing conditions, local regulatory changes, etc.). To mitigate concerns that time invariant company characteristics or measurement error in my proxies affect my inferences, I include indicator variables for each company in all regressions. Thus, my research design benchmarks changes in the financing and investing behavior of companies whose auditors are PCAOB inspected in a given period to changes in the financing and investing behavior of companies whose auditors (i) have already been inspected by the PCAOB at an earlier period and (ii) will be subsequently inspected by the PCAOB at a future period (see Figure 1 for an illustration of my research design).

The PCAOB international inspection setting offers three main advantages to test the effect of auditor oversight on corporate finance decisions while mitigating the typical research design concerns affecting studies examining regulation (see Leuz and Wysocki 2016 for a discussion). First, my sample is comprised exclusively of non-U.S. companies that are free of U.S. securities regulation; thus any economic consequences of PCAOB oversight accruing to these companies are not confounded by the effects of the other provisions of SOX or other SEC regulation.[5] Second, my design identifies the treatment effects of PCAOB oversight by comparing companies that operate in the same country, industry, and year. As a result, my results are unlikely to be confounded by differential changes in the economic environment of the treated and benchmark observations. Finally, since all companies in my sample are audited by a PCAOB-inspected auditor, my results are unlikely to be explained by auditor selection effects.

Using data from 35 countries over the period 2002 to 2014, I find that companies audited by PCAOB-inspected auditors raise significantly more external capital following the disclosure

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[5] A drawback of focusing on non-U.S. companies is that they are not subject to U.S. securities regulation and are not the intended beneficiaries of PCAOB oversight. Section 2.2 discusses potential mechanisms for such spillovers.

of their auditors' PCAOB inspection report. I find evidence of companies issuing additional debt and equity capital following the disclosure of their auditor's PCAOB inspection report. Further, the extent to which companies change their capital raising behavior following the disclosure of their auditors' inspection report is contingent on the content of the report. I find that companies issue significantly lesser debt and equity capital when their auditor's inspection report reveals that the PCAOB found a larger number of engagement-level deficiencies in manner in which the auditor conducts audits.[6] The coefficient estimates imply that companies raise additional external capital amounting to 0.5% of their assets, on average. However, companies whose auditors have no engagement-level deficiencies in their inspection reports issue additional external capital equal to 0.9% of their assets, of which 0.5% (0.4%) is in the form of additional debt (equity) issuances. This economic magnitude represents a 9.7% increase in the external capital raised conditional on the company raising additional capital.

I then investigate whether companies increase their capital expenditures in response to the increased oversight of their auditors. To the extent auditor regulatory oversight mitigates the agency problems in external financing arrangements and relaxes financing constraints, the increased capital should lead to increases in corporate investment. Consistent with this prediction, I find that companies respond to the disclosure of their auditor's PCAOB inspection report by increasing capital expenditures. However, the changes in capital expenditure following PCAOB inspections are statistically significant only when the inspection reports disclose that the auditor has few engagement-level deficiencies. Specifically, the coefficient estimate implies that companies increase their capital expenditure by 0.3% of assets (or 6.1% of the average annual capital expenditure incurred by the sample companies) following the disclosure that their auditor

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[6] Christensen et al. (2016) provide survey evidence that investors view the number of engagement deficiencies in PCAOB inspection reports as an indicator of overall audit firm quality.

was inspected by the PCAOB *if* the inspection report reveals that the auditor did not any engagement-level deficiencies.

In cross-sectional analysis, I examine whether financially constrained companies increase external financing and capital expenditures by a larger magnitude in response to their auditors' PCAOB inspection report than financially unconstrained companies. Since financially constrained companies are the ones who have binding capital constraints, such companies are likely to be more responsive to an increase in external financing capacity than unconstrained companies. This is exactly what I find. Financially unconstrained (constrained) companies respond to the PCAOB inspection of their auditor by issuing additional external capital equal to 0.3% (0.9%) of their assets. Further, only the financially constrained companies increase capital expenditures (by 0.5% of assets) in response to their auditor's PCAOB inspection.[7]

My results are robust to using different fixed-effect structures, clustering standard error at different levels, the inclusion/exclusion of control variables, and dropping individual countries from my sample. Further, I find no evidence of a pre-treatment trend in the financing and investing behavior of companies before the PCAOB inspection of their auditors, providing support for the validity of the parallel trends assumption.

This paper contributes to literature examining the consequences of PCAOB oversight, which predominantly focuses on changes in the auditing industry and financial reporting practices of SEC registered companies. A number of prior studies examine the effect of PCAOB inspections, enforcement, and the content of inspection reports on auditor behavior and auditor market share (e.g., Lennox and Pittman 2010, DeFond and Lennox 2011, Nagy 2014, Boone et al. 2015, Aobdia 2016a, Aobdia and Shroff 2017). With the exception of Lennox and Pittman

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[7] I also examine whether companies audited by one of the big-four network auditors derive any differential benefits from PCAOB oversight of their auditors. I find that there is no statistically significant difference in the financing and investing responses to PCAOB inspections of companies audited by big-four versus non-big-four network auditors.

(2010), prior studies find that U.S. auditors lose market share when inspection reports raise concerns about audit quality and, in the international setting, non-U.S. auditors inspected by the PCAOB gain market share from competitors not inspected by the PCAOB. Prior research also documents that PCAOB inspections affect audit quality for the clients of inspected auditors (e.g., Gramling et al. 2011, Aobdia 2016a, b, Lamoreaux 2016, DeFond and Lennox 2017, Fung et al. 2017, Krishnan et al. 2017). Finally, Gipper et al. (2016) document increases equity investors' responses to earnings news following the introduction of the PCAOB inspection regime. My paper extends this literature by documenting the real effects of PCAOB oversight on corporate finance decisions. To the best of my knowledge, this is the first paper to show that PCAOB oversight has real effects and to document the economic magnitude of these effects.[8]

A more unique contribution of this paper is to examine the spillover effects of U.S. securities regulation on non-U.S. companies. With the exception of Aobdia and Shroff (2017) and Fung et al. (2017), prior research exclusively focuses on the effects of PCAOB oversight on SEC registered companies.[9] The PCAOB does not inspect the audit engagements of companies not registered with the SEC. Yet, I find that non-SEC registered companies derive economic benefits from PCAOB oversight and the magnitude of this benefit depends on the content of PCAOB inspection reports. Understanding the spillover effects of PCAOB oversight is important because it helps us better evaluate and quantify the total benefit of PCAOB oversight. Given the resources devoted to the PCAOB and skepticism about its value, additional evidence on the costs and benefits of PCAOB oversight is warranted.[10]

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[8] See Coates and Srinivasan (2014) and DeFond and Zhang (2014) for reviews of the literature.
[9] Fung et al. (2017) find that PCAOB inspections have spillover effects on the audit quality of non-SEC registered clients audited by the inspected auditors and Aobdia and Shroff (2017) find that non-U.S. auditors gain market share of non-SEC registered clients if they are subject to PCAOB oversight.
[10] The PCAOB 2017 budget totals $268.5 million (see: https://www.sec.gov/news/pressrelease/2016-263.html).

Finally, this paper contributes the large literature on the real effects of accounting. Prior studies such as Hope and Thomas (2008), McNichols and Stubben (2008), Biddle et al. (2009) and Balakrishnan et al. (2014, 2016) provide evidence that financial reporting quality helps alleviate financing frictions, which then leads to more efficient investment. Other studies examine the effect of accounting rules and financial reporting incentives on corporate investment behavior (e.g., Bushee 1998, Graham et al. 2011, Shroff 2017). Recently, Kausar et al. (2016) examine whether the choice to get an audit in a voluntary audit regime provides investors incremental information that alleviates financing frictions and facilitates corporate investment. My paper contributes to the literature by examining the real effects of auditor *regulatory oversight*, which hitherto has not been examined.

Before proceeding, I caveat that my inferences are based on a sample of non-U.S. companies that operate in countries with weaker regulatory and institutional environments than that of the U.S. Thus the results of this paper might not generalize to companies in the U.S.

2. Institutional setting and hypotheses

2.1. PCAOB's international inspection program

The PCAOB was established in 2002 via Section 101 of the Sarbanes-Oxley Act (SOX). Section 104 of SOX requires the PCAOB to inspect the auditing procedures of all auditors that issue audit reports opining on the financial statement of SEC registered companies, including the non-U.S. auditors of non-U.S. companies cross-listed on a U.S. stock exchange.[11] Under SOX and the PCAOB's rules, non-U.S. audit firms are subject to PCAOB inspections "in the same manner and to the same extent" as U.S. based audit firms (SOX Section 106). Thus, PCAOB's

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[11] The PCAOB might also inspect auditors that play a substantial role in preparing (but do not issue) audit reports of an SEC registered company or its foreign subsidiary (SOX Section 106(a), PCAOB Rule 2100 and 4000).

international inspection program creates variation in auditor oversight in countries beside the U.S., which allow the PCAOB to inspect their domestic auditors.

The PCAOB commenced its inspections of non-U.S. auditors in 2005. Auditors that issue audit reports for more than 100 SEC registered companies are subject to annual inspections; the rest are subject to (at least) triennial inspections. Before the start of an inspection, the PCAOB staff notifies the audit firm of when it plans to conduct the inspection. It also requests information such as the list of audits of SEC registered companies performed by the auditor, the personnel performing those audits, and the audit firm's quality control program. In most cases, the inspection fieldwork occurs at the offices of the inspected audit firms. PCAOB inspections involve two parts: (i) an in-depth analysis of select audit engagements performed by an auditor and, (ii) an examination of the auditor's *firm-level* quality control systems.

In the first part of the inspection, the PCAOB inspectors select a subsample of audit engagements (of SEC registered clients) for inspection based on a risk-weighted system. For each audit selected, the inspection team meets with the audit engagement team and examines the audit work papers. The inspectors' goal is to analyze how the audit was performed and to answer questions such as: (i) does the auditor follow the procedures required under the PCAOB's auditing standards, (ii) did the auditor identify any areas in which the financial statements did not conform to GAAP and how the auditor handled potential adjustments to the financial statements in such cases, and (iii) are there any indications that the auditor is not independent. Overall, the purpose of such an examination of the audit work papers is to "identify and address weaknesses and deficiencies related to how a firm conducts audits" (PCAOB Annual Report 2012).

The second part of the inspection concerns the auditor's firm-level quality control system. Examples of the types of issues addressed include: (i) review of the processes for partner evaluation, compensation, admission to partnership, and disciplinary actions (ii) review of management structure and processes, including the tone at the top and whether management

instills a culture of commitment to integrity and independence (iii) review of the firm's processes for monitoring audit performance (e.g., how the audit firm identifies, evaluates, and responds to possible indicators of deficiencies in its performance of audits) and (iv) review of engagement acceptance and retention such as policies and procedures for identifying and assessing the risks involved in accepting or continuing audit engagements (see PCAOB Annual Report 2012).

Upon completion of each inspection, the PCAOB prepares a written report on the inspection and subsequently makes portions of the reports available to the public, subject to statutory restrictions on public disclosure. Specifically, the public portion of the inspection reports describes audit deficiencies found within the sample of audit engagements examined by PCAOB inspectors (which are known as Part I Findings). These deficiencies typically concern instances where the auditor failed to gather sufficient audit evidence to support an audit opinion (see PCAOB Release No. 2012-003). However, the report does not divulge names of clients whose audit engagements were inspected by the PCAOB. The PCAOB does not disclose any deficiencies in the quality control systems of the inspected audit firm (known as Part II Findings), as long as the audit firm satisfactorily addresses concerns raised by the PCAOB within one year of the issuance of the inspection report (SOX Section 104).

2.2. Hypothesis development

Financial statements are valuable as a contracting tool and information source only to the extent investors perceive the information reported in those statements as being reliable (Watts 2003). One of the primary mechanisms to increase the reliability of financial statements is to have an independent outside party verify those disclosures. Theory suggests this assurance benefit of an audit reduces financing frictions, such as adverse selection and moral hazard between managers and capital providers, which improves resource allocation and contracting efficiency (Jensen and Meckling 1976; Watts and Zimmerman 1983). For example, Jensen and

Meckling (1976) argue that "independent auditors would be engaged by management to testify to the accuracy and correctness of [financial statements]" because such an action reduces investors' monitoring costs, which would lead to a lower cost of capital and greater access to capital for the company. In other words, to the extent an independent audit serves to provide investors assurance that financial statements represent what they purport to represent, investors are more likely to use financial statement information for contracting purposes and for making resource allocation decisions. Consistent with theory, prior research finds that an audit (and even the choice to subject oneself to an audit) lowers the cost of external financing (e.g., Blackwell et al. 1998, Minnis 2011, Kausar et al. 2016) and that lenders' pricing decisions are more sensitive to financial statement variables when financial statements have been audited (e.g., Minnis 2011).

The degree to which an audit assures investors of the reliability of financial statement critically depends on the independence of the auditor and the rigor with which the audit is performed (Watts and Zimmerman 1983). Yet, these attributes of audit engagements, independence and rigor, are mostly unobservable to external stakeholders (PCAOB 2015). Typically, outside stakeholders only observe whether a company receives a clean audit opinion or an opinion with some caveats. As a result, outside stakeholders are forced to rely on an auditor's private incentives to be independent and thorough in her audits, which stem from litigation costs and reputational damages in the event an audit failure becomes public. Although prior research finds that an auditor's private incentives help improve audit quality, the evidence is generally mixed (see DeFond and Zhang 2014 and Donovan et al. 2014). In addition, it is unclear whether auditors' private incentives to supply high quality audits are sufficient to completely resolve agency issues between auditors, managers and capital providers.

While auditors have private incentives to supply high quality audits, there are countervailing incentives for auditors to allow companies/managers excessive financial reporting discretion. Specifically, since managers often have significant influence in the auditor selection

process (e.g., Beasley et al. 2009, Cohen et al. 2010, Dhaliwal et al. 2015), it is plausible that auditor independence (or its perception) is compromised. The *perception* of independence is especially important in the audit setting because the audit process is unobservable to stakeholders outside the company. The unobservable nature of the audit process also affects auditors' incentives to be rigorous in their audits, potentially promoting the commoditization of audits (Advisory Committee on the Auditing Profession 2008; PCAOB 2015).[12] Specifically, if stakeholders are unable to differentiate the quality of work done by different auditors (or within a subset of auditors such as the big-four), then the primary basis for competition among auditors is the audit fees charged (Doty 2012, 2014). The focus on audit fees then reduces auditors' incentives to be rigorous, potentially reducing audit quality and the level of assurance from an audit (e.g., Christensen et al. 2014, Ettredge et al. 2014). Commenting on the concern that audits are viewed as commodities by some investors, James Doty, the Chairman of the PCAOB, said in his 2014 keynote address at Baruch College that "I believe the nub of this commoditization [of an audit] is that it is difficult [for investors] to observe the full benefit of a good audit. We can't tell which companies would or might have collapsed under management misreporting, but for the auditor's watchful eye."

Given these features of the auditing industry, a public regulator can serve to increase the assurance value of an audit by inspecting the work performed by auditors. For example, Pritchard (2006) and Aobdia and Shroff (2017) discuss that a public regulator can 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). Similarly, a public regulator can examine personnel policies,

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[12] The 2008 Final Report of the Advisory Committee on the Auditing Profession to the U.S. Department of the Treasury discusses that "Currently, there is minimal publicly available information regarding indicators of audit quality at individual accounting firms. Consequently, it is difficult to determine whether audit committees…have the tools that are useful in assessing audit quality that would contribute to making the initial auditor selection and subsequent auditor retention evaluation processes more informed and meaningful."

employee compensation arrangements, practices to attract new clients and retain existing clients, and the overall culture at the audit firm to evaluate whether the personnel performing the audit have incentives to stay independent of the client.

I hypothesize that PCAOB oversight increases the perceived reliability of the financial statements by providing investors additional comfort that the auditor is independent of management and by increasing investor confidence that the audit work is performed thoroughly. Specifically, the PCAOB's in-depth analysis of selected audit engagements is geared towards identifying deficiencies in the way in which an audit is conducted and, providing the auditors incentives to correct deficiencies identified during the inspection (see Aobdia 2016a). PCAOB inspectors also look for evidence on whether an auditor is independent from its clients as required under SEC and PCAOB rules. Specifically, the PCAOB inspection of auditors' *firm-wide* quality control systems reviews the audit firms' management structure, culture, partner evaluation criteria, compensation arrangements, policies to gain new clients and retain existing clients, etc. with the goal of ensuring that the audit firm has a commitment to integrity and independence. The PCAOB incentivizes auditors to remediate firm-wide quality control deficiencies by keeping such deficiencies confidential for at least a year after the inspection report is made public. If the auditor satisfactorily addresses the PCAOB's concerns, such quality control deficiencies remain confidential; otherwise, the PCAOB publicly discloses these criticisms as a "Part II Finding" in an updated inspection report (Aobdia 2016b).

Consistent with the PCAOB inspection process providing auditors incentives to improve audit practices ex ante, Lamoreaux (2016) uses variation in whether non-U.S. governments allow the PCAOB to inspect domestic auditors and finds that PCAOB inspection access leads to improvements in audit quality of non-U.S. companies cross-listed in the U.S. Similarly, DeFond and Lennox (2017) and Krishnan et al. (2017) find that PCAOB inspections lead to improvements in audit quality following the inspection of a company's auditor (i.e., ex post).

Further, Gipper et al. (2016) find that PCAOB oversight increases the extent to which investors respond on earnings news, as measured by short-window earnings response coefficients. The evidence in Gipper et al. (2016) suggests that investors are more reliant on the information in earnings following the PCAOB oversight regime. Aobdia (2016a, b) uses confidential PCAOB inspection data and finds significant changes in audit practices in response to PCAOB inspections.

My analyses exclusively focus on non-U.S. companies that are not listed on a U.S. exchange and as such are free of SEC oversight. The auditors of these non-U.S. companies are inspected by the PCAOB because they participate in the audit of at least one SEC registered company. In other words, I examine whether PCAOB inspections of non-U.S. auditors affect the financing/investing behavior of their non-U.S. clients not subject to SEC oversight. Thus, my analyses require that PCAOB oversight has spillover effects on the non-U.S. clients of non-U.S. auditors. In principle, PCAOB inspections of non-U.S. auditors can have spillover effects on the non-U.S. clients of inspected auditors for the following reasons.

First, PCAOB inspections include an evaluation of the auditor's *firm-wide* quality control systems. This part of the inspection by definition extends beyond individual audit engagements and can lead to auditor-wide changes in audit policies. For example, PCAOB quality-control inspections evaluate whether partner evaluation, compensation, promotion, termination and staffing practices encourage technical competence and independence instead of marketing (Aobdia 2016b). If the PCAOB inspectors conclude that existing partner compensation policies do not promote independence, audit firms have strong incentives to change partner compensation practices in a manner that satisfies the PCAOB inspectors to avoid receiving a Part II Finding. Such changes in partner compensation policies usually occur at the audit firm-level, affecting the audit engagements of non-U.S. companies not registered with the SEC.

Second, PCAOB inspections of select 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 example 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 and led to subsequent changes in other audit engagements (see Appendix A in Gipper et al. (2016) for a more detailed discussion as well as 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. Aobdia (2016a) uses confidential PCAOB data to show that PCAOB inspections affect the audit engagements of clients whose audits are not chosen for inspection.

Third, and most directly related to my study, concurrent work by Fung et al. (2017) finds that PCAOB inspections of non-U.S. auditors lead to reporting quality improvements for the auditors' non-U.S. clients. Similarly, Aobdia and Shroff (2017) find that PCAOB inspected non-U.S. auditors observe a 4 to 6% increase in their market share of non-SEC registered clients following their PCAOB inspections, suggesting that PCAOB oversight has spillover effects on the non-U.S. clients of inspected auditors.[13] Overall, prior research, anecdotal evidence, 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.

Finally, my hypothesis only requires PCAOB oversight to affect the perceived reliability of non-U.S. companies' financial statements and does not require any actual changes in the audit quality of non-U.S. companies. Supporting this notion, Christensen et al. (2016) conduct a

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[13] Anecdotally, private conversations with the PCAOB international inspection staff revealed that during the inspection field work, colleagues from the auditors' national offices often visit the local inspection site to understand any issues raised by the inspectors. Further, the audit firms often send out technical bulletins to all employees at the audit firm after the completion of an inspection.

survey of investors and find that investors use information in auditors' PCAOB inspection reports to infer the overall audit firm quality. Notwithstanding the above arguments, my empirical tests are biased towards finding no result if PCAOB oversight does not have spillover effects on the perceived reliability of non-U.S. companies' financial statements.

H: Companies audited by PCAOB-inspected auditors increase their external financing and investment expenditures following the PCAOB inspection of their auditors.

Despite the above discussion, there are compelling arguments for why auditor regulatory oversight might not affect the perceived reliability of financial statements. A number of prior studies argue that regulatory solutions are often ineffective because regulators are subject to political pressure and capture, resource constraints, and inefficiencies (Stigler 1971, Peltzman 1976, Peltzman et al. 1989). Prior research and commentators raise a number of reasons why the PCAOB specifically, and its approach to auditor oversight, might be ineffective. For example, Glover et al. (2009) interview practicing auditors who indicate that the PCAOB inspectors often lack the competence to understand complex auditing and accounting issues. Glover et al. (2009) conclude that the inspection process is fundamentally flawed. Auditing professionals also assert that inspector-identified deficiencies typically capture differences in professional judgment rather than systematic audit failures; and argue that PCAOB inspectors lack the incentives to identify deficiencies that are likely to improve audit quality (Johnson et al. 2014, Dowling et al. 2015). Anecdotally, the former CEO of Deloitte and a member of several public company boards, J. Michael Cook, 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."[14] Thus, whether PCAOB oversight affects investor perceptions of the reliability of financial statements and helps reduce external financing frictions is ultimately an empirical question.

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[14] See: http://ww2.cfo.com/accounting-tax/2007/01/why-the-big-four-are-still-a-big-mystery/. Skepticism about the value of PCAOB inspections is also raised by Hodowanitz and Solieri (2005), Palmrose (2006), and Hilzenrath (2010) among others.

3. Data and sample

I obtain the complete list of non-U.S. auditors inspected by the PCAOB and the date when the inspection reports are made public from the PCAOB website as of November 10, 2014.[15] I then hand collect data on the inspection end date from the individual inspection reports downloaded from the PCAOB website. All my analyses are conducted on non-U.S. companies operating in countries with at least one PCAOB inspected auditor. I obtain the financial statement information of non-U.S. companies from the Compustat Global Vantage database and hand collect the auditor identities from the S&P Capital IQ database for all company-year observations in the intersection of Compustat Global and Capital IQ.[16] Although Compustat Global has a variable identifying the auditor for its sample company-years, I hand collect auditor data from Capital IQ for three reasons: (i) over 60% of the company-year observations in Compustat Global have auditors classified in the generic category "Other;" (ii) Of the identified auditors, the vast majority of company-years are those using a big-four auditor; (iii) The auditor variable in Compustat Global is often erroneous. As a final step to identify the auditor for each company-year in my sample, I manually clean the auditor identities for the observations in my sample as the auditor names are not uniformly coded in the Capital IQ database.

My sample period begins in 2002 (following the enactment of SOX and the creation of the PCAOB) and ends in 2014 (the most recent year on Compustat Global at the time I began collecting auditor identities). I require company-years to be in the intersection of the Compustat Global and Capital IQ databases and have non-missing values for total assets, capital expenditure, Tobin's Q, and cash flow. These restrictions yield an initial sample of 158,763 company-year observations. I exclude companies cross-listed on a U.S. exchange as they are

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

[16] I use the Global Vantage database (rather than Datastream) in part because the primary source of auditor data is Capital IQ, and Datastream does not share a reliable company identifier with Capital IQ. GVKEY serves as a common company identifier for observation in Global Vantage and Capital IQ.

subject to the other provisions of SOX, and the timing of PCAOB inspection effects are likely to be different for these companies, leaving me with 146,340 observations. Dropping companies without a PCAOB inspected auditor results in a sample of 86,077 observations. I also drop 1,205 observations with annually inspected auditors since the treatment effect for such companies are not staggered. In some instances, companies are audited by multiple auditors. Dropping such observations, as well as, companies that change auditors during my sample period leaves me with a sample of 52,755 observations. I drop companies with auditor changes because Aobdia and Shroff (2017) find that PCAOB inspected auditors gain market share from those not inspected by the PCAOB. Thus, companies that switch auditors during my sample period could induce a selection bias in my results. Finally, I drop companies operating in the financial industry because their financing and investing incentives are typically different than that of industrial companies. My final sample comprises of 52,329 company-year observations and 6,924 unique companies from 35 countries that allow the PCAOB to inspect their domestic auditors. Table 1 outlines the sample selection procedure.

4. Research design and descriptive statistics

4.1. Research design

I estimate the following difference-in-differences regression to test my predictions:

$$y_{i,t} = \beta_1 \, INSPECTION_{i,t-1} + \beta_2 \, REPORT_{i,t-1} + \alpha_i + \alpha_t \times \alpha_{ind} \times \alpha_c + \gamma'X + \varepsilon_{i,t} \qquad (1)$$

where i, t, ind, and c indexes companies, years, industries, and countries, respectively; $y_{i,t}$ is a proxy for the amount of external capital raised or investment expenditures. I proxy for the amount of external capital raised using the sum of debt and equity issuances (*DEBT ISSUANCE + EQUITY ISSUANCE*), where *DEBT ISSUANCE* is the net amount of long-term debt issued in a year (Compustat data item *dltis* minus *dlr*) or the change in total debt if *dltis* and *dlr* are missing. *EQUITY ISSUANCE* is the sum of the proceeds raised from the sale of common and preferred

stock (Compustat data item *sstk*). In cases where *sstk* is missing, I assume equity issuances are zero. However, I include an indicator variable that equals one for such cases to control for any systematic effects of treating missing equity issuances as a zero issuance. I scale the amount of capital raised by average assets in the current and immediately preceding year. I proxy for investment using capital expenditure scaled by average assets (*CAPEX*). α_i, α_t, α_{ind}, and α_c are company, year, industry (2-digit SIC), and country indicators. *X* is a vector of controls.

As it is difficult to know when precisely companies would change their corporate finance decisions in response to PCAOB oversight, I include indicator variables to capture the fiscal years following the (i) completion of the inspection fieldwork (*INSPECTION*) and (ii) public disclosure of the inspection report (*REPORT*). Specifically, *INSPECTION* is an indicator variable that equals one for the fiscal years *in between* the completion of a company's auditor's PCAOB inspection fieldwork and the disclosure of the company's auditor's inspection report. Thus, this variable captures changes in a company's financing and investing behavior in the period in between the completion of its auditor's inspection fieldwork and the public disclosure its auditor's inspection report. *REPORT* is an indicator variable that equals one for the fiscal years *after* the disclosure of a company's auditor's inspection report. In the international inspection setting, the time elapsed between the completion of an auditor's inspection fieldwork and the disclosure of its inspection report is 569 days on average (Table 3). Given the significant lag between the inspection end date and report disclosure date, I estimate separate treatment effects for these two events.[17]

When the dependent variable is *CAPEX*, the vector of control variables includes: Tobin's Q (*TOBIN'S Q*), sales growth (*SALES GROWTH*), cash flows from operations (*CFO*), company

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[17] In principle, external capital providers can ex ante identify which auditors are subject to PCAOB oversight because auditors with SEC registered companies as clients can be identified using publicly available data. Thus, it is plausible that companies audited by a PCAOB inspected auditor change their external financing behavior after their auditor's inspection fieldwork ends rather than waiting until the inspection report is publicly disclosed.

size (*LN(MVE)*), cash (*CASH*), leverage (*LEVERAGE*), and the ratio of tangible to total assets (*ASSET TANGIBILITY*). When the dependent variable is *EXTERNAL FINANCING, DEBT ISSUANCE*, or *EQUITY ISSUANCE*, the vector of control variables includes: Tobin's Q (*TOBIN'S Q*), sales growth (*SALES GROWTH*), cash flows from operations (*CFO*), profitability (*ROA*), an indicator variable for dividend payments (*DIVIDEND INDICATOR*), company size (*LN(MVE)*), cash (*CASH*), leverage (*LEVERAGE*), and the ratio of tangible to total assets (*ASSET TANGIBILITY*). The list of control variables included in my regressions follows prior research (e.g., Kaplan and Zingales 1997; Whited 2006; Hadlock and Pierce 2010; Badertscher et al. 2013; Kausar et al. 2016). All continuous variables are winsorized at the 1st and 99th percentile of their empirical distribution. I cluster standard errors at the country-auditor level.[18]

The identifying assumption essential to the interpretation of my difference-in-differences coefficient is that the treated and control company-year observations would have had parallel trends in external financing and investment had it not been for the treatment effect. My empirical design takes several steps to mitigate concerns about violation of the parallel trends assumption. First, I include country-industry-year fixed effects in all the regressions. This fixed effects structure benchmarks the behavior of a treated company-year to the behavior of a company-year not receiving treatment but operating in the same country-industry-year. As a result, all observable and unobservable factors that affect a company's external financing and investing behavior at the country-industry-year level are differenced away.

Second, by restricting the analyses to a sample of companies whose auditors are all inspected by the PCAOB on a triennial basis, my research design identifies treatment effects only from the staggering of PCAOB inspections (see Figure 1 for a diagrammatic illustration of the staggered design; Table 2, Panel C show the extent of staggering in PCAOB inspection

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[18] My results are robust to clustering standard errors at the company level, which is the approach in Gipper et al. (2016) and DeFond and Lennox (2017), as well as clustering at the country-industry level.

disclosures in each country). This approach mitigates any concern that the companies audited by PCAOB inspected auditors have systematically different financing/investing behavior than companies audited by non-PCAOB inspected auditors.

Third, I restrict my sample to companies that do not change auditors during my sample period (2002 to 2014), further mitigating concerns that auditor selection during my sample period affects my inferences. Given that the PCAOB was established in 2002 as part of SOX and the auditor choices of my sample companies pre-date the creation of the PCAOB, auditor selection is especially unlikely to confound my inferences. A potential concern related to auditor selection remains if companies audited by different PCAOB-inspected auditors have different financing/investing incentives. However, such selection concerns are again unlikely to affect my inferences because each company serves as its own control in my difference-in-differences design, thereby differencing selection effects related to a company's auditor choice.

Fourth, I include company-fixed effects in all regressions, which differences away all time invariant company-specific determinants of external financing and investment; I also include time-varying controls for a number of company-level characteristics (such as size, growth, and profitability) that could cause a company's financing or investing trends to diverge post-treatment for reasons unrelated to the PCAOB inspection induced effects. Notwithstanding the above, I empirically test and find no evidence of a differential pre-treatment trend in the corporate finance policies of treatment and control observations (see Section 5.3).

4.2. Descriptive statistics

Table 2 presents the distribution of the company-year observations in my sample, the number of PCAOB inspections, and inspection deficiencies by country (Panel A) and year (Panel B). Panel A shows that Japan, Taiwan, and the U.K. make up a large fraction of the total number of observations. Although Canada has the largest numbers of auditor inspections in my sample,

Canadian companies make up less than 1% of the sample. This is because Canadian companies are often cross-listed on a U.S. stock exchange. Panel A also reveals that the number of PCAOB inspections in my sample exceed the number of PCAOB inspection reports, which occurs because some of the inspection reports are disclosed in 2014 towards the end of my sample period. Finally, Panel A shows that the frequency of Part I Findings (related to engagement-level deficiencies) far exceed the number of publicly disclosed Part II Findings (related to auditor-level quality control criticisms). Such a pattern suggests that auditors strive to address PCAOB's concerns related to quality control deficiencies to avoid the public disclosure of Part II Findings, consistent with Aobdia (2016b) and Gipper et al. (2016).

Table 2, Panel B shows that the number of observations in my sample are similarly distributed across the periods covered in my sample. Further, PCAOB inspections begin in 2005 and significantly vary thorough the years in my sample. Similarly, the first PCAOB inspection report is disclosed in 2006 (for the set of auditors included in my sample) and there is reasonable variation in the number of reports disclosed each year. Since my identification comes from variation in the timing of auditor inspections *within each country*, I also tabulate the distribution of the number of unique auditors that receive their first PCAOB inspection report by each country-year (see Table 2, Panel C).[19] The table shows that there is considerable variation in the timing of auditor inspections within each country. Each of 146 initial inspection reports in Panel C serves as a unique treatment source for different companies in my sample.

Table 3 presents the descriptive statistics for the variables used in my analyses. The average company spends 4.9% of its average assets on investment and raises external capital amounting to 2.6% of its average assets in a year. The average net debt (equity) issuance is 0.7% (1.9%) of average assets. In terms of PCAOB inspection characteristics, the table shows that the

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[19] I focus on an auditor's first inspection report in this table because the indicator variable *REPORT* is equal to one for all fiscal years following the disclosure of a company's auditor's PCAOB inspection report.

average lag between when the PCAOB completes its inspection fieldwork and discloses the inspection report is 569 days. The table also shows that 35.9% of the inspected audit engagements have at least one deficiency identified by the PCAOB. However, only 2.5% of the PCAOB inspections result in a publicly disclosed quality control criticism. Table 3 shows that the average company's auditor is inspected two times by the PCAOB during my sample period. Further, the average company's sales grows by 9% per year, it generates cash flows equal to 6.4% of its average assets, and has a return on assets of 2% per year. Note that the majority of sample is audited by a big-four network auditor, which is partly because the big-four affiliates have the largest aggregate market share of publicly traded companies across the world and because they are more likely to have SEC registered companies as their clients.

5. Results

5.1. Does PCAOB oversight affect external financing decisions?

I begin my analyses by examining whether companies audited by PCAOB-inspected auditors raise additional external capital following their auditor's PCAOB inspection and whether the content of the inspection report affects companies' capital raising behavior. Table 4 presents the results. The first column presents the results from a regression without conditioning on the content of the inspection report. Column 1 in Table 4 shows that the coefficient for *INSPECTION* is statistically insignificant (coef.=0.001; t-stat.=0.41) and the coefficient for *REPORT* is statistically significant at the two-tailed 10% level (coef.=0.005; t-stat.=1.66). The coefficient estimate for *REPORT* suggests that companies raise additional external capital equal to 0.5% of their assets, which is approximately 5.4% of the average external capital raised conditional on raising capital. These coefficients provide initial evidence that companies audited by PCAOB-inspected auditors raise additional external capital following the disclosure that their auditor is inspected by the PCAOB.

Column 2 in Table 4 presents the results from a regression that includes two additional covariates, *INSPECTION × %PART I FINDINGS* and *REPORT × %PART I FINDINGS*, that capture the incremental effect of having engagement-level deficiencies in an auditor's inspection report.[20] Specifically, *%PART I FINDINGS* is the proportion of inspected audit engagements that are identified as having at least one deficiency by the PCAOB inspectors during the inspection fieldwork. To the extent investors perceive auditors with a larger number of engagement deficiencies as conducting poor quality audits, the companies whose auditors have a high engagement-deficiency rate are less likely to gain access to additional external capital as a result of PCAOB oversight. Christensen et al. (2016) survey 102 investors and find that "…investors overwhelmingly associate fewer PCAOB deficiencies with higher overall audit firm quality." (p.1651) Thus, I predict that the coefficient for *INSPECTION × %PART I FINDINGS* and/or *REPORT × %PART I FINDINGS* will be negative.

Column 2 in Table 4 shows that the coefficients for *INSPECTION* and *INSPECTION × %PART I FINDINGS* are statistically insignificant (similar to the evidence in column 1). But consistent with my predictions, the coefficient for *REPORT* is positive and statistically significant (coef.=0.009; t-stat.=2.89) while the coefficient for *REPORT × %PART I FINDINGS* is negative and statistically significant (coef.=-0.010; t-stat.=-3.45). These coefficients suggest that companies audited by PCAOB inspected auditors respond to their auditors' PCAOB inspection reports by raising significantly more external capital when their auditor's inspection report does not have an engagement deficiency; the increase in external financing in response to a PCAOB inspection report is significantly smaller when the company's auditor's inspection report reveals that the PCAOB found deficiencies in the manner in which the auditor performed an audit. These results support my hypothesis and indicate that PCAOB inspection reports

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[20] The main effect of *%PART I FINDINGS* is not included in the regressions because it is perfectly collinear with the interaction terms (since only company-years with PCAOB inspections can have non-zero Part I Findings).

enhance the reliability of financial statements primarily when the inspection report indicates that the auditor is thorough in the manner in which it performs audits.

The coefficient estimate for *REPORT* implies that companies issue additional external capital amounting to 0.9% of their assets if their auditor does not have any engagement deficiency in its inspection report. However, companies whose auditors have the average percentage of engagement deficiencies found in my sample of inspection reports raise additional external capital equal to 0.5% of their assets following the disclosure of their auditors' inspection report. These economic magnitudes represent 9.7% and 5.4% of the average external capital raised conditional on companies raising external capital, respectively. The evidence connecting the content of PCAOB inspection reports to changes in company behavior is especially helpful in ruling out alternative explanations for the results.

The observation that the effect of PCAOB oversight occurs only following the disclosure of an inspection report perhaps raises the question of why capital providers do not anticipate the benefits of PCAOB oversight and extend additional capital to companies in advance of the report. Since the PCAOB has a well-defined and publicly observable criterion to inspect auditors – i.e., auditors participating in the audits of SEC registered companies – it is possible for capital providers to precisely identify the auditors subject to PCAOB oversight in advance of the actual inspection report date. Thus, it is not immediately clear why capital providers and companies do not change behavior sooner. One plausible reason why the economic effects of PCAOB oversight manifest only after the disclosure of inspection reports is that capital providers wait to observe the content of the inspection reports before supplying additional capital.

Next, I examine whether companies respond to PCAOB auditor oversight by issuing additional debt or equity or both. Specifically, I change the dependent variable from *EXTERNAL FINANCING* to *DEBT ISSUANCE* and *EQUITY ISSUANCE* and re-estimate the regressions,

which are presented in Table 5, Panels A and B, respectively. Column 1 in Table 5, Panel A shows that coefficient for *INSPECTION* and *REPORT* are statistically insignificant when the dependent variable is *DEBT ISSUANCE*. However, results presented in column 2 of the table show that the coefficient for *REPORT* is positive and statistically significant (coef.=0.005; t-stat.=2.08) and the coefficient for *REPORT × %PART I FINDINGS* is negative and statistically significant (coef.=-0.007; t-stat.=-2.97). These coefficients suggest that companies audited by PCAOB inspected auditors respond to their auditors' PCAOB inspection reports by issuing addition debt only when their auditor's inspection report has a below average engagement-level deficiency rate. Specifically, companies whose auditors have a zero percent engagement-level deficiency rate, issue additional debt equal to 0.5% of their assets or 7.1% of the average debt issuance conditional on issuing debt. However, companies whose auditors have the average engagement-level deficiency rate issue additional debt equal to 0.3%, which is not statistically different than zero (two-tailed p-value from F-test=0.23).

Table 5, Panel B presents similar results with *EQUITY ISSUANCE* as the dependent variable. The first column in Panel B shows that the coefficients for *INSPECTION* and *REPORT* are insignificant. The second column shows that the main and interactive effect for *INSPECTION* remains insignificant but the coefficient for *REPORT* is positive and statistically significant (coef.=0.004; t-stat.=1.95); the coefficient for *REPORT × %PART I FINDINGS* is negative but statistically insignificant at the 10% two-tailed level (coef.=-0.003; t-stat.=-1.41). These results suggest that companies raise additional equity equal to 0.4% of their assets following the public disclosure of their auditor's PCAOB inspection report when the auditor has a zero percent engagement-level deficiency rate. Companies whose auditors have the sample average rate of engagement deficiencies respond to PCAOB oversight by issuing additional equity amounting to 0.3% of their assets (which marginally insignificant; two-tailed p-

value=0.126). The economic magnitude relative to the average equity issuance conditional on issuing equity is 3% for the average company with a PCAOB-inspected auditor (column 1) and 6% for the average company whose PCAOB-inspected auditor has a zero percent deficiency rate (column 2). Overall, these results support my hypothesis that PCAOB auditor oversight helps reduce external financing frictions, leading to an increase in external financing capacity and a consequent increase in external capital issuances.

5.2. Does PCAOB oversight affect corporate investment decisions?

Next, I examine whether companies audited by PCAOB-inspected auditors increase investment expenditures following the PCAOB inspections of their auditor. If companies audited by PCAOB inspected auditors have greater access to capital as a result of the increased auditor oversight, it is plausible that companies also increase investment in response to PCAOB oversight. Table 6 presents the results.

The first column in Table 6 shows that the coefficient for *INSPECTION* and *REPORT* are statistically insignificant. These results suggest that companies, on average, do not respond to PCAOB oversight by increasing capital expenditures. The second column in the table presents the results from a regression that conditions on the content of the PCAOB inspection report. The table shows that the coefficients for *INSPECTION* and *INSPECTION × %PART I FINDINGS* are statistically insignificant, consistent with the evidence in prior tables. However, the coefficient *REPORT* is positive and statistically significant (coef.=0.003; t-stat.=2.60) and the coefficient for *REPORT × %PART I FINDINGS* is negative and statistically significant (coef.=-0.005; t-stat.=-2.80). These coefficients suggest that companies audited by PCAOB-inspected auditors increase investment only if their auditors' inspection reports have zero/few engagement-level deficiencies. In terms of economic magnitude, the coefficient estimate for *REPORT* (in column 2) suggests that companies respond to the PCAOB inspection of their auditor by increasing

investment by 0.3% of assets or 6.1% of their average annual capital expenditures when the auditor has a zero-percent deficiency rate. Overall, I interpret the evidence thus far as suggesting that PCAOB auditor oversight increases in the reliability of the company's audited financial statements, which increases the company's access to external capital (as observed in Tables 4 and 5) and leads to a subsequent increase in investment (Table 6).

5.3. Dynamic analyses of the effect of PCAOB oversight on external financing and investment

To further mitigate endogeneity concerns, I investigate the dynamic effects of PCAOB inspections on company behavior. If my results are picking up a firm-specific trend related to changing economic conditions (e.g., because the timing of PCAOB inspection disclosures are coincidentally correlated with changes in economic conditions localized to the companies whose auditors it inspects), then one might expect the economic changes to affect corporate financing and investing behavior even before the PCAOB inspection report is disclosed. However, if companies systematically change their financing and investing behavior only after their auditors' inspection reports are disclosed, which is staggered in time and varies in its content, then it is quite unlikely that a correlated omitted variable can explain the results.

In Table 7, I repeat the analyses from tables 4 and 6 after replacing the *REPORT* indicator variable with nine indicator variables: *REPORT [-4]*, *REPORT [-3]*, *REPORT [-2]*, *REPORT [-1]*, *REPORT [0]*, *REPORT [1]*, *REPORT [2]*, *REPORT [3]* and *REPORT [4+]*. Each of these are indicator variables that equal one for the individual years before or after a company's auditor's PCAOB inspection report is publicly disclosed. For example, the variable *REPORT [-4]* equals one for a company four years prior to the date its auditor's PCAOB inspection report is publicly disclosed. Similarly, *REPORT [3]* equals one for a company three years after the date its auditor's PCAOB inspection report is made public. Finally, *REPORT [4+]* equals one for a company for the forth and later years after the date its auditor's PCAOB inspection report is

made public. I estimate regressions replacing *REPORT* with the nine indicator variables without conditioning for the content of the inspection report as well as regressions that interact each of the nine indicator variables with *%PART I FINDINGS*.

Table 7, Panel A (B) presents the results when *EXTERNAL FINANCING* (*CAPEX*) is the dependent variable. Panel A shows that all nine indicator variables are statistically insignificant at conventional significance levels when I do not condition on the content of inspection reports (column 1). However, the coefficient estimate for the indicator variables capturing the pre-treatment periods (*REPORT [-4]*, *REPORT [-3]*, *REPORT [-2]* and *REPORT [-1]*) range between -0.002 and -0.001, while the coefficient estimates for the post-treatment periods (*REPORT [0]*, *REPORT [1]*, *REPORT [2]*, *REPORT [3]* and *REPORT [4+]*) are larger, ranging from 0.001 to 0.007. Importantly, once I include interaction terms that capture the content of the inspection reports, I find that all five post-treatment indicator variables become statistically significant. Specifically, the coefficients for *REPORT [0]*, *REPORT [1]*, *REPORT [2]*, *REPORT [3]* and *REPORT [4+]* are all positive and statistically significant at the 10% two-tailed level or better. Further, the coefficients for the interaction of these post-treatment indicator variables and *%PART I FINDINGS* are negative in all cases and statistically significant at the 10% two-tailed level in three of the five cases. None of the pre-treatment indicator variables are statistically significant. Figure 2 presents a graphical representation of the coefficients for the nine indicator variables and their 90% confidence intervals. Panel A (B) in the figure corresponds to the regressions results in the first (second) column in the table.

Table 7, Panel B presents the results when *CAPEX* is the dependent variable. The first column presents the regression results without conditioning on the content of inspection reports. The table shows that the coefficient estimates for the pre-treatment indicator variables (*REPORT [-4]*, *REPORT [-3]*, *REPORT [-2]* and *REPORT [-1]*) range between 0.000 and 0.001 and none

of them are statistically different than zero. In contrast, the coefficient estimates for the post-treatment periods (*REPORT [0]*, *REPORT [1]*, *REPORT [2]*, *REPORT [3]* and *REPORT [4+]*) are larger, ranging from -0.001 to 0.008, and statistically significant in four of the five cases. Column 2 in the table presents the results from a regression that includes interaction terms between the nine indicator variables and *%PART I FINDINGS*. The table shows that none of the pre-treatment indicator variables or its interaction with *%PART I FINDINGS* is statistically significant. However, the four of the five post-treatment indicator variables (*REPORT [1]*, *REPORT [2]*, *REPORT [3]* and *REPORT [4+]*) are positive and statistically significant and four of the five interaction terms with *%PART I FINDINGS* are negative and statistically significant. Figure 3 presents a graphical representation of the coefficients for the nine indicator variables and their 90% confidence intervals. Panel A (B) in the figure corresponds to the regressions results in the first (second) column in the table. The figures and tables show that there is no evidence of a pre-treatment effect on external financing and investing activity, supporting my inference that the change in companies' corporate finance decisions are a response to the PCAOB inspection reports of their auditors.

5.4. Cross-sectional analyses

Finally, I conduct cross-sectional tests to further substantiate my inference that PCAOB oversight eases financing frictions, which allow companies to raise additional external capital and increase investment. First, I examine whether financially constrained companies are more responsive to the increase in external financing capacity following the PCAOB inspections of their auditors. If PCAOB oversight increases access to external finance, then the economic effects of PCAOB oversight should be larger for financially constrained companies since external financing capacity is more likely to be a binding constraint for such companies. To test this prediction, I augment equation 1 by including additional interaction terms with a proxy for

financing constraints. I proxy for financing constraints using an indicator variable that equals one for company-years that do not pay dividends and are below median in size (*FIN CONSTRAINED*). The coefficient for *INSPECTION* and *REPORT* capture the effect of PCAOB oversight on financially *un*constrained companies, and the coefficients for the interaction terms (*INSPECTION × FIN CONSTRAINED* and *REPORT × FIN CONSTRAINED*) capture the incremental effect of PCAOB oversight for financially constrained companies.

Table 8 presents the results. Consistent with my prediction, I find that the coefficient for *REPORT × FIN CONSTRAINED* is positive and statistically significant when the dependent variable is *EXTERNAL FINANCING* and *CAPEX*. The table also shows that the coefficient for *REPORT* is statistically insignificant in both regressions. These coefficients suggest that only the financially constrained companies raise additional capital and increase investment in response to the PCAOB inspection reports of their auditors. The coefficient estimates imply that financially constrained companies increase external financing by 0.9% of their assets and increase capital expenditures by 0.5% of their assets (per the F-tests) following their auditors' inspection reports. These results support my inference that PCAOB oversight relaxes financing frictions and allows companies to invest more by raising additional capital.

I also examine whether the PCAOB oversight has differential effects for companies audited by big-four versus non-big-four network auditors. The idea is that the big-four network auditors are relatively more reputed than auditors not belonging to the big-four network, and thus the companies audited by a big-four network auditor are likely to derive smaller benefits from PCAOB oversight. That is, to the extent the big-four network auditors have a reputation for producing high quality audits, the incremental reliability benefit of PCAOB auditor oversight is likely to be smaller for the clients of these auditors.

To test this prediction, I augment equation 1 by including additional interaction terms with an indicator variable that equals one for companies audited by a non-big-four auditor (*NOT BIG4*). Table 9 presents the results. The table shows that the coefficients for the interaction terms (*INSPECTION* × *NOT BIG4* and *REPORT* × *NOT BIG4*) are statistically insignificant irrespective of the dependent variable. These results suggest that companies audited by big-four and non-big-four network auditors respond similarly to PCAOB auditor oversight. However, note that approximately 91% of the companies in my sample are audited by a big-four auditor (see Table 3). Thus, it is plausible that my data lack sufficient variation to detect the differential effect of PCAOB oversight for companies audited by big-four and non-big-four auditors.

5.5. Untabulated robustness tests

I conduct a number of robustness tests to mitigate concerns that my results are spurious. First, I test and find that my results are robust to dropping individual countries from my sample. Thus, the documented effects are not idiosyncratic to any one country. Second, I verify that my results are robust to dropping individual control variables and using different fixed effect structures (e.g., country-year fixed effects, country-industry-year fixed effects with industry classifications based on the NAICS rather than SIC). Finally, I test and find that my inferences are unchanged if I use a matched sample design where the control sample is composed of companies whose auditors are not subject to PCAOB oversight.

6. Conclusion

In this paper, I use the PCAOB international inspection program as a setting to examine the effects of auditor regulatory oversight on corporate financing and investing decisions. Even though non-U.S. companies are not subject to any SEC/PCAOB regulation, their auditors can be subject to PCAOB inspections if the auditor has at least one client that is cross-listed in the U.S.

As a result, PCAOB's international inspection program generates within-country variation in auditor oversight in countries besides the U.S (which allow the PCAOB access to inspect domestic auditors). In addition, the PCAOB inspections of the vast majority of non-U.S. auditors occur on a triennial basis, thereby affecting the auditors of different companies at different points in time. My research design exploits the staggering of PCAOB international inspections within a country to identify the treatment effect of auditor oversight.

My results based on a generalized difference-in-differences design show that companies audited by a PCAOB-inspected auditor raise significantly more external capital and increase capital expenditure following their auditors' PCAOB inspections. The economic magnitude of the change in external financing and investment in response to PCAOB auditor inspections is larger when the inspection reports reveal that the auditor has fewer engagement-level deficiencies and when companies are financially constrained. I interpret the overall evidence as suggesting that PCAOB auditor oversight increases the reliability of audited financial statements, which increases a company's access to capital and facilitates its investment expenditures.

The evidence in this paper is important because it highlights the role of auditor oversight in the capital allocation process. Most studies examining the effect of regulation face identification challenges because of the endogenous timing of regulatory changes and the lack of appropriate control samples (Coates and Srinivasan 2014; Leuz and Wysocki 2016). The PCAOB international inspection setting provides a unique opportunity to compare companies that are located in the same country and operate in the same industry-year, and yet are subject to different levels of regulatory oversight.

Before concluding, I highlight that my inferences are based on a sample of non-U.S. companies that operate in countries with weaker regulatory and institutional environments than that in the U.S. Thus the results of this paper, particularly the economic magnitudes, might not generalize to U.S. companies. In addition, the evidence on benefits of PCAOB auditor oversight

might not generalize to other public regulators in other settings. Finally, my study does not speak

to *net* benefits of auditor oversight because I do not examine 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 Audit Analytics, Compustat Global, Capital IQ, or the PCAOB website. All continuous variables are winsorized at 1% and 99% of the distribution and all dollar amounts are in millions. The variables are listed in alphabetical order.

Variable	Definition
%PART I FINDINGS	The proportion of inspected engagements that receive audit deficiencies (Part I Finding) in an auditor's PCAOB inspection report. For auditors with more than one publicly disclosed inspection report, this variable equals the most recent deficiency rate following the company's fiscal year end date.
ASSET TANGIBILITY	The ratio of total tangible assets measured as net property, plant and equipment (data PPENT) scaled by total assets (data AT) as of the fiscal year preceding the dependent variable measurement date.
BIG4	An indicator that equals one for companies audited by one of the big-four affiliated auditor. The big-four auditors include Deloitte, E&Y, KPMG, and PwC.
CAPEX	Capital expenditure (data CAPX) scaled by average total assets (data AT).
CASH	Total cash and cash equivalent balance (data CHE) scaled by average total assets (data AT) as of the fiscal year preceding the dependent variable measurement date.
CFO	Operating cash flows (data OANCF) scaled by average total assets (data AT) as of the fiscal year preceding (concurrent to) the dependent variable measurement date in the external financing (investment) regression.
DAYS BTW INSPECTION & REPORT	The number of days since the completion of an auditor's PCAOB inspection fieldwork and the public disclosure of its inspection report.
DEBT ISSUANCE	Net debt issuance (data DLTIS minus DLTR) scaled by average total assets (data AT). When DLTIS and DLTR are missing, this variable equals the change in total debt for the company (change in data DLTT plus change in data DLC) scaled by average total assets.
DIVIDEND INDICATOR	An indicator that equals one for company-years with positive dividend payments (data DVC > 0). This variable is measured as of the fiscal year preceding the dependent variable measurement date.
EQUITY ISSUANCE	Equity issuance (data SSTK) scaled by average total assets (data AT). This variable is set to zero if the variable SSTK is missing in Compustat.
EXTERNAL FINANCING	The sum of *DEBT ISSUANCE* and *EQUITY ISSUANCE* as defined above.
FIN CONSTRAINED	An indicator variable that equals one for companies satisfying two criteria: (i) the company is smaller than the median company in my sample as measured by its market value of equity and (ii) the company does not pay a dividend in the year. This variable is measured as of the fiscal year preceding the dependent variable measurement date.
INSPECTION	An indicator variable that equals one for the fiscal years in between the completion of the auditor's PCAOB inspection fieldwork and the public disclosure of the inspection report.
LEVERAGE	The ratio of the sum of short- and long-term debt (data DLC plus data DLTT) to total assets (data AT) as of the fiscal year preceding the dependent variable measurement date.
LN(MVE)	The natural log of a company's market value of equity (data PRCC_F × CSHO) as of the fiscal year preceding the dependent variable measurement date for Canadian companies.

	Compustat Global does not include price and share price data in their main dataset. These data are for non-U.S. companies are obtained from the Compustat Global Securities Daily file.
MISSING DUMMY	An indicator variable that equals one for company-years in which the variable *EQUITY ISSUANCE* is set equal to zero because the Compustat data item SSTK is missing.
NO. OF INSPECTION	The total number of times an auditor is inspected by the PCAOB during my sample period.
NO. PART II FINDINGS	An indicator variable that equals one for auditor inspection reports that *later receive* a public Part II Finding. Note that this variable is defined only at the inspection report level (and not company-year level).
ROA	Return on assets is measured as income before extraordinary items (data IB) divided by average total assets (data AT) as of the fiscal year preceding the dependent variable measurement date.
REPORT	An indicator variable that equals one for the fiscal years after public disclosure of the company's auditor's PCAOB inspection report.
REPORT[-4]	An event time indicator that equals one for the fiscal year of a company four years prior to its auditor's PCAOB inspection report disclosure date.
REPORT[-3]	An event time indicator that equals one for the fiscal year of a company three years prior to its auditor's PCAOB inspection report disclosure date.
REPORT[-2]	An event time indicator that equals one for the fiscal year of a company two years prior to its auditor's PCAOB inspection report disclosure date.
REPORT[-1]	An event time indicator that equals one for the fiscal year of a company immediately preceding its auditor's PCAOB inspection report disclosure date.
REPORT[0]	An event time indicator that equals one for the fiscal year in which a company's auditor's PCAOB inspection report is publicly disclosed.
REPORT[1]	An event time indicator that equals one for the fiscal year of a company immediately following its auditor's PCAOB inspection report disclosure date.
REPORT[2]	An event time indicator that equals one for the fiscal year of a company two years after its auditor's PCAOB inspection report disclosure date.
REPORT[3]	An event time indicator that equals one for the fiscal year of a company three years after its auditor's PCAOB inspection report disclosure date.
REPORT[4+]	An event time indicator that equals one for the fiscal years of a company four or more years after its auditor's PCAOB inspection report disclosure date.
SALES GROWTH	Percentage change in sales (data SALE) as of the fiscal year preceding the dependent variable measurement date.
TOBIN'S Q	Market value of equity (data PRCC_F × CSHO) plus the book value of short- and long-term debt (data DLC + DLTT) scaled by total assets (data AT) measured at the fiscal year preceding the dependent variable measurement date.

FIGURE 1

*Diagrammatic Representation of the Research Design*

Country	Auditor	Insp. dates	Rep. dates	Clients	Fis. Month	Variable	F02	F03	F04	F05	F06	F07	F08	F09	F10	F11	F12	F13	F14
India	S.R. Batliboi & Co	10/7/2011	2/2/2012	Exide Industries	31-Mar	*INSPECTION*	0	0	0	0	0	0	0	0	0	0	0	0	0
						REPORT	0	0	0	0	0	0	0	0	0	0	1	1	1
				Oudh Sugar Mills	30-Jun	*INSPECTION*	0	0	0	0	0	0	0	0	0	0	0	0	0
						REPORT	0	0	0	0	0	0	0	0	0	0	0	1	1
				Bata India	31-Dec	*INSPECTION*	0	0	0	0	0	0	0	0	0	0	1	0	0
						REPORT	0	0	0	0	0	0	0	0	0	0	0	1	1
	Deloitte Haskins & Sells	2/29/2008 11/22/2010 3/8/2013	4/29/2011 10/27/2011 10/24/2013	Mahindra & Mahindra	31-Mar	*INSPECTION*	0	0	0	0	0	0	1	1	1	0	0	0	0
						REPORT	0	0	0	0	0	0	0	0	0	1	1	1	1
				Automotive Axles	30-Sep	*INSPECTION*	0	0	0	0	0	0	0	1	1	1	0	0	0
						REPORT	0	0	0	0	0	0	0	0	0	0	1	1	1
				KSB Pumps	31-Dec	*INSPECTION*	0	0	0	0	0	0	0	1	1	0	0	0	0
						REPORT	0	0	0	0	0	0	0	0	0	0	1	1	1
	T.R. Chadha & Co.	9/13/2013	3/25/2014	Narmada Gelatines	31-Mar	*INSPECTION*	0	0	0	0	0	0	0	0	0	0	0	0	0
						REPORT	0	0	0	0	0	0	0	0	0	0	0	0	1
United Kingdom	BDO	12/16/2005 11/2/2012	12/20/2006 12/19/2013	Blacks Leisure	28-Feb	*INSPECTION*	0	0	0	1	0	0	0	0	0	1	0	0	0
						REPORT	0	0	0	0	1	1	1	1	1	1	1	1	1
				Prezzo	31-Dec	*INSPECTION*	0	0	0	0	1	0	0	0	0	0	1	0	0
						REPORT	0	0	0	0	0	1	1	1	1	1	1	1	1
	Grant Thornton	7/17/2008 6/29/2012	4/29/2011 7/1/2013	Caffyns	31-Mar	*INSPECTION*	0	0	0	0	0	0	0	1	1	0	0	1	0
						REPORT	0	0	0	0	0	0	0	0	0	1	1	1	1
				ADVFN	30-Jun	*INSPECTION*	0	0	0	0	0	0	0	1	1	0	0	1	0
						REPORT	0	0	0	0	0	0	0	0	0	0	1	1	1
				Nichols	31-Dec	*INSPECTION*	0	0	0	0	0	0	0	1	1	0	0	0	0
						REPORT	0	0	0	0	0	0	0	0	0	0	1	1	1
	PWC	2/29/2008 8/19/2011	9/30/2008 10/1/2013	Harvey Nash Group	31-Jan	*INSPECTION*	0	0	0	0	0	0	0	0	0	1	1	0	0
						REPORT	0	0	0	0	0	0	1	1	1	1	1	1	1
				Sportech	31-Dec	*INSPECTION*	0	0	0	0	0	0	0	0	0	0	1	0	0
						REPORT	0	0	0	0	0	0	0	1	1	1	1	1	1

Notes: This figure presents an example of my difference-in-differences design where the non-U.S. clients of non-U.S. auditors are affected by PCAOB oversight at different points in time. The inspection/report dates are staggered in time, which is the primary source of variation for my identification. The figure also shows that my design exploits variation in the fiscal year ends of companies with the same auditor. Overall, the figure shows that my design compares the change in the behavior of companies located in the same country in the same period but whose auditors observe changes in regulatory oversight at different points in time.

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FIGURE 2
Effect of PCAOB Auditor Oversight on External Capital Issuances by Companies

Panel A: Effect of PCAOB oversight on external capital issuances
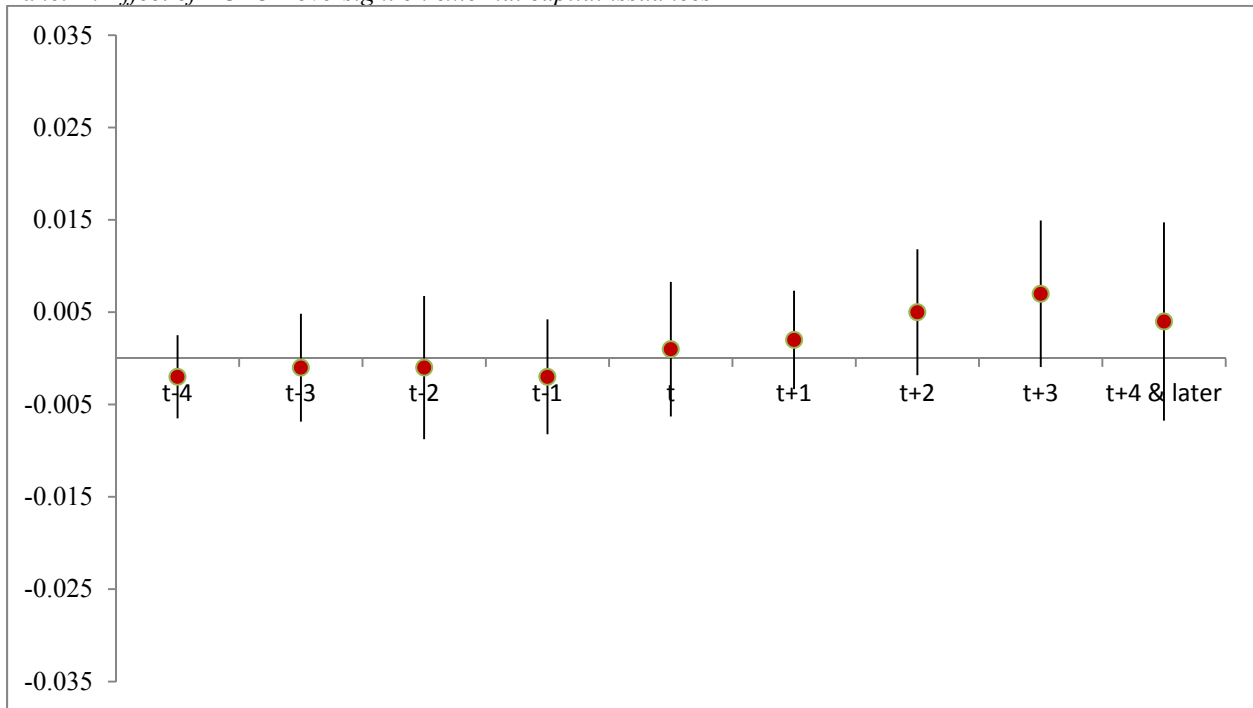
Panel B: Effect of PCAOB oversight on external capital issuances conditional on having zero deficiencies in the inspection report
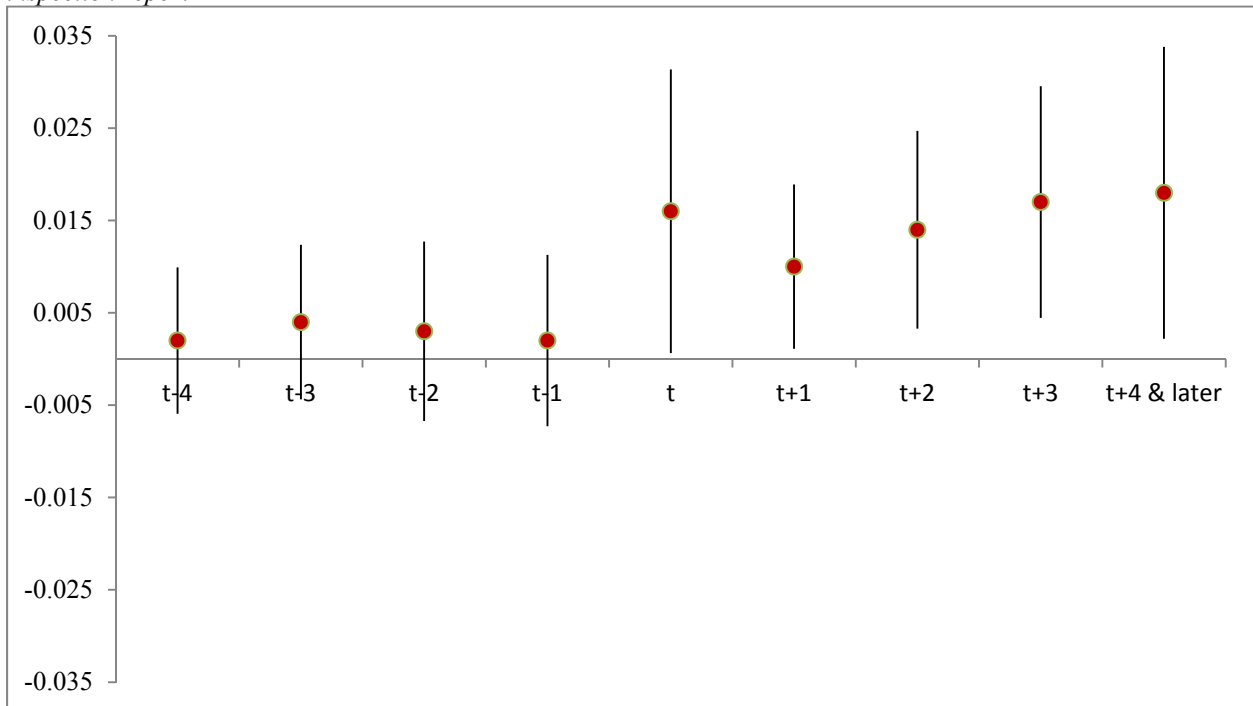
Notes: In the figure above, the x-axis represents time relative a company's auditor's PCAOB report date and the y-axis represents the amount of external capital (debt plus equity) issued scaled by assets. The figure plots the two-tailed 90% confidence interval around each point estimate of the relation between PCAOB oversight and external financing. Panel A presents the average effect for all companies and Panel B presents the average effect conditional on the auditor receiving a clean PCAOB inspection report (i.e., one without a Part I Finding).

FIGURE 3
Effect of PCAOB Auditor Oversight on Capital Expenditures by Companies

Panel A: Effect of PCAOB oversight on capital expenditures
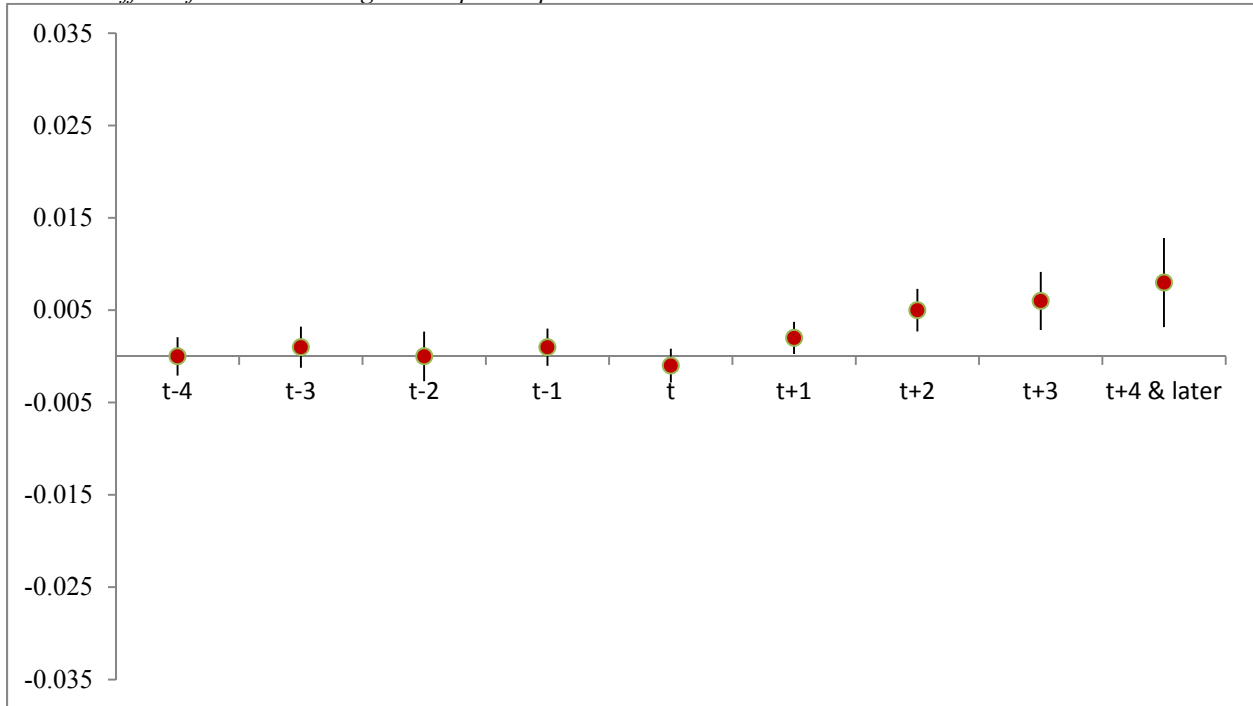
Panel B: Effect of PCAOB oversight on capital expenditures conditional on having zero deficiencies in the inspection report
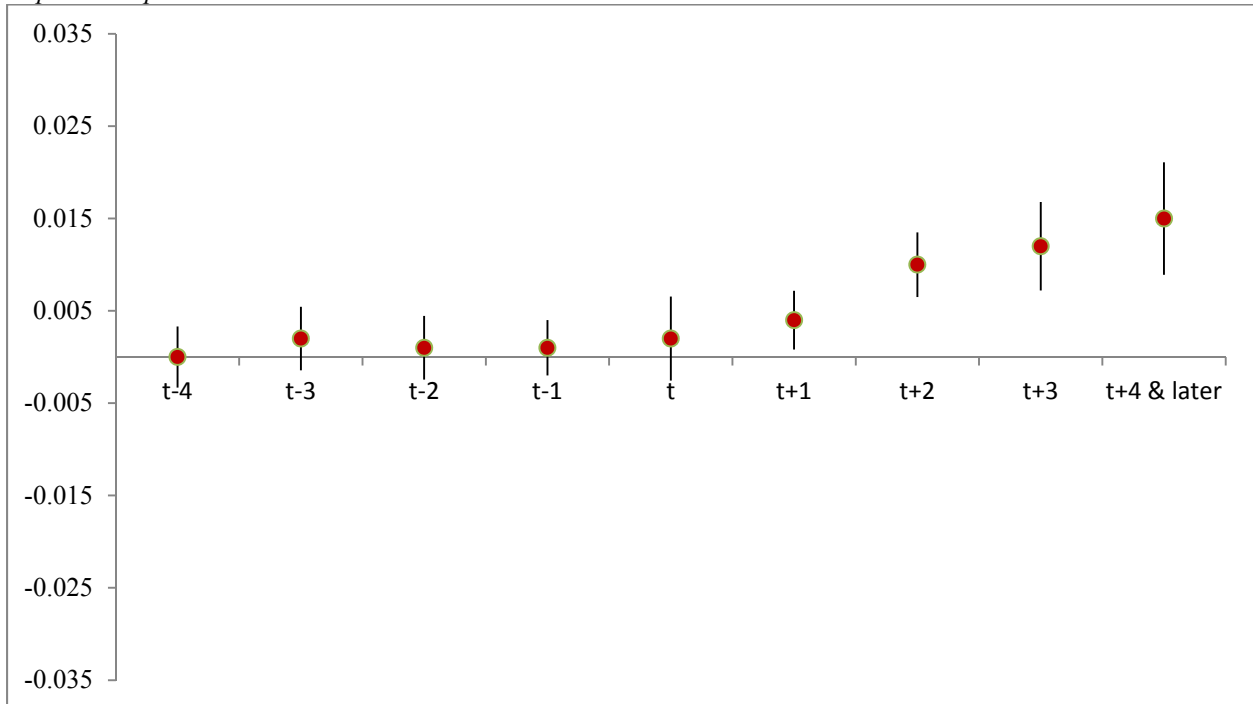
Notes: In the figure above, the x-axis represents time relative a company's auditor's PCAOB report date and the y-axis represents the capital expenditures scaled by assets. The figure plots the two-tailed 90% confidence interval around each point estimate of the relation between PCAOB oversight and capital expenditures. Panel A presents the average effect for all companies and Panel B presents the average effect conditional on the auditor receiving a clean PCAOB inspection report (i.e., one without a Part I Finding).

TABLE 1

Sample Selection

No.	Sample Selection (2002 - 20014)	Number of Observations
(1)	Company-year observations in the intersection of Capital IQ & Compustat Global with fiscal years ending after 2002 and non-missing data on key variables	158,763
(2)	Company-year observations excluding SEC registered companies	146,340
(3)	Company-year observations with a PCAOB inspected auditor	86,077
(4)	Company-year observations with triennially inspected auditors (i.e., companies not audited by one of the Canadian big-four)	84,872
(5)	Company-year observations without multiple auditors and without auditor changes in the sample period	52,755
(6)	Company-year observations in non-financial industries	52,329
	Final sample of company-years available for analyses	52,329

TABLE 2
Sample Distribution by Country and Year

Panel A: Sample Distribution by Country

Country	No. of Observations	No. of Inspections	No. of Reports	% of Engagement Deficiencies	No. of Public QC Criticisms
Argentina	232	11	11	15.9%	0
Australia	3,894	21	21	35.7%	1
Bermuda	34	6	6	27.8%	0
Brazil	52	12	12	40.3%	0
Canada	328	28	27	42.7%	1
Cayman Islands	11	4	4	25.0%	0
Chile	317	9	9	53.7%	0
Colombia	29	4	4	33.3%	0
Germany	1,386	4	4	56.3%	0
Greece	55	2	2	0.0%	0
Hong Kong	30	2	2	87.5%	0
India	1,566	16	15	29.4%	0
Indonesia	482	5	5	20.0%	0
Ireland	221	2	2	0.0%	0
Israel	921	23	23	43.5%	0
Japan	17,994	15	14	56.5%	1
Malaysia	988	4	4	25.0%	1
Mexico	442	18	17	61.8%	2
Netherlands	680	4	4	50.0%	0
New Zealand	462	4	4	12.5%	0
Norway	857	5	5	55.0%	0
Papua New Guinea	7	2	2	25.0%	0
Peru	108	4	3	0.0%	0
Philippines	777	7	7	21.4%	0
Russia	311	8	8	52.1%	0
Singapore	2,168	7	7	0.0%	0
South Africa	1,314	13	13	12.8%	0
South Korea	1,346	9	9	29.6%	1
Spain	185	1	1	66.7%	0
Switzerland	642	2	2	100.0%	0
Taiwan	8,447	10	10	15.0%	0
Thailand	161	2	2	0.0%	0
Turkey	13	1	1	100.0%	0
United Arab Emirates	37	2	2	0.0%	0
United Kingdom	5,832	15	14	35.6%	0
Total	**52,329**	**282**	**276**	**35.1%**	**7**

TABLE 2 – *continued*

Panel B: Sample Distribution by Year

Year	No. of Observations	No. of Inspections	No. of Reports	% of Engagement Deficiencies	No. of Public QC Criticisms
2002	2,917	0	0	0.0%	0
2003	3,139	0	0	0.0%	0
2004	3,587	0	0	0.0%	0
2005	3,741	4	0	0.0%	0
2006	3,880	11	1	0.0%	0
2007	4,087	27	3	50.0%	0
2008	4,118	37	17	12.3%	0
2009	4,162	50	6	52.8%	1
2010	4,291	36	31	59.4%	3
2011	4,421	26	92	27.4%	3
2012	4,530	57	37	27.7%	0
2013	4,697	30	48	39.5%	0
2014	4,759	4	41	47.8%	0
Total	**52,329**	**282**	**276**	**24.4%**	**7**

TABLE 2 – *continued*

Panel C: Distribution of the number of auditors receiving their first inspection report in each country-year pair

Country \ Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Argentina	0	0	3	0	0	1	0	0	0
Australia	0	0	0	0	3	5	1	0	1
Bermuda	0	0	2	0	0	0	0	0	0
Brazil	0	0	0	0	4	0	0	0	0
Canada	0	3	3	0	3	2	0	0	0
Cayman Islands	0	0	0	0	1	1	1	0	1
Chile	0	0	2	1	0	0	0	0	0
Colombia	0	0	0	1	0	1	0	0	0
Germany	0	0	0	0	0	0	0	2	2
Greece	0	0	0	0	0	2	0	0	0
Hong Kong	0	0	0	0	1	0	0	0	0
India	0	0	1	0	0	4	2	0	2
Indonesia	0	0	0	0	0	2	0	0	0
Ireland	0	0	0	0	0	2	0	0	0
Israel	0	0	1	1	4	3	0	0	0
Japan	0	0	0	0	1	4	1	1	0
Malaysia	0	0	0	0	0	4	0	0	0
Mexico	0	0	1	2	2	1	0	0	0
Netherlands	0	0	0	0	0	0	0	2	2
New Zealand	0	0	1	0	0	0	1	0	0
Norway	0	0	0	0	0	1	1	1	1
Papua New Guinea	0	0	0	0	0	1	0	0	0
Peru	0	0	0	0	0	1	1	0	0
Philippines	0	0	0	0	0	3	1	0	1
Russia	0	0	0	0	3	1	1	0	0
Singapore	0	0	0	0	0	4	1	0	0
South Africa	0	0	0	0	3	1	2	1	0
South Korea	0	0	0	0	1	4	0	0	0
Spain	0	0	0	0	0	0	0	0	1
Switzerland	0	0	0	0	0	0	0	0	2
Taiwan	0	0	2	0	1	1	0	0	0
Thailand	0	0	0	0	0	1	0	0	0
Turkey	0	0	0	0	0	0	0	0	1
United Arab Emirates	0	0	0	0	0	2	0	0	0
United Kingdom	1	0	1	1	1	1	0	2	2
Total	**1**	**3**	**17**	**6**	**28**	**53**	**13**	**9**	**16**

Notes: Panel A (B) in this table presents the distribution of the number of company-year observations, the number of inspection fieldwork end dates, the number of inspection report disclosures, the average percentage of engagement-level deficiencies, and the number of inspection reports with publicly disclosed quality control criticisms by country (year). Panel C presents the distribution of the number of *initial* auditor inspection reports disclosed by country and year.

TABLE 3
Descriptive Statistics

Variables	Mean	SD	P25	P50	P75	N
External financing & investment proxies						
CAPEX	0.049	0.057	0.013	0.031	0.062	52,329
EXTERNAL FINANCING	0.026	0.118	-0.021	0.000	0.045	52,329
DEBT ISSUANCE	0.007	0.086	-0.025	0.000	0.029	52,329
EQUITY ISSUANCE	0.019	0.079	0.000	0.000	0.000	52,329
Inspection report characteristics						
DAYS BTW INSPECTION & REPORT	568.8	363.2	307.8	450.0	819.8	276
%PART I FINDINGS	0.359	0.385	0.000	0.333	0.667	276
NO. PART II FINDINGS	0.025	0.158	0.000	0.000	0.000	276
Company characteristics						
NO. OF INSPECTION	2.158	0.676	2.000	2.000	3.000	52,329
TOBIN'S Q	1.160	1.198	0.571	0.812	1.254	52,329
SALES GROWTH	0.090	0.338	-0.044	0.045	0.155	52,329
CFO	0.064	0.108	0.023	0.067	0.116	52,329
ROA	0.020	0.122	0.004	0.031	0.069	52,329
DIVIDEND INDICATOR	0.566	0.496	0.000	1.000	1.000	52,329
LN(MVE)	7.822	2.936	5.767	8.073	9.796	52,329
CASH	0.172	0.157	0.059	0.125	0.235	52,329
LEVERAGE	0.208	0.184	0.039	0.178	0.329	52,329
ASSET TANGIBILITY	0.306	0.211	0.137	0.277	0.437	52,329
BIG4	0.911	0.284	1.000	1.000	1.000	52,329

Notes: This table presents a number of descriptive statistics for my sample companies. The variable definitions are available in Appendix A.

TABLE 4
Effect of PCAOB Oversight on External Financing

Dependent Variable:			EXTERNAL FINANCING	
	(1)		(2)	
	Coef.	*t*-Stat.	Coef.	*t*-Stat.
INSPECTION	0.001	0.41	0.004	0.93
REPORT	0.005*	1.66	0.009***	2.89
INSPECTION × %PART I FINDINGS			-0.005	-1.07
REPORT × %PART I FINDINGS			-0.010***	-3.45
TOBIN'S Q	0.028***	16.76	0.028***	16.75
SALES GROWTH	0.004*	1.89	0.004*	1.88
CFO	-0.071***	-5.87	-0.071***	-5.89
ROA	0.010	0.71	0.010	0.74
DIVIDEND INDICATOR	0.009***	3.87	0.009***	3.86
LN(MVE)	-0.015***	-7.66	-0.015***	-7.66
CASH	-0.076***	-7.42	-0.077***	-7.43
LEVERAGE	-0.353***	-27.89	-0.353***	-27.91
ASSET TANGIBILITY	0.041***	3.51	0.041***	3.52
MISSING DUMMY	-0.044***	-13.33	-0.044***	-13.34
			Sum	*p*-Value
INSPECTION + (INSPECTION × %PART I FINDINGS) × Avg. %PART I FINDINGS			0.002	0.480
REPORT + (REPORT × %PART I FINDINGS) × Avg. %PART I FINDINGS			0.005*	0.058
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Adjusted R-Squared	41.9%		41.9%	
No. of Observations	52,329		52,329	

Notes: This table presents the results from regressions of the amount of external capital raised on indicator variables capturing changes in auditor oversight, and control variables. See Appendix A for variable definitions. The *t*-statistics are clustered at the country-auditor level. ***, **, and * denote statistical significance at the two-tailed 1, 5, and 10 percent levels, respectively.

TABLE 5

Effect of PCAOB Oversight on Debt and Equity Issuances

Panel A: Debt issuances

Dependent Variable:	DEBT ISSUANCE			
	(1)		(2)	
	Coef.	*t*-Stat.	Coef.	*t*-Stat.
INSPECTION	0.000	0.20	0.002	0.52
REPORT	0.002	0.89	0.005**	2.08
INSPECTION × %PART I FINDINGS			-0.002	-0.63
REPORT × %PART I FINDINGS			-0.007***	-2.97
TOBIN'S Q	0.006***	5.78	0.006***	5.75
SALES GROWTH	0.007***	5.12	0.007***	5.11
CFO	-0.050***	-5.72	-0.050***	-5.73
ROA	0.059***	5.97	0.059***	5.99
DIVIDEND INDICATOR	0.006***	3.20	0.006***	3.19
LN(MVE)	0.002*	1.70	0.002*	1.70
CASH	-0.019***	-2.85	-0.020***	-2.85
LEVERAGE	-0.357***	-31.65	-0.356***	-31.67
ASSET TANGIBILITY	0.045***	4.95	0.045***	4.96
			Sum	*p*-Value
INSPECTION + (INSPECTION × %PART I FINDINGS) × Avg. %PART I FINDINGS			0.001	0.703
REPORT + (REPORT × %PART I FINDINGS) × Avg. %PART I FINDINGS			0.003	0.229
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Adjusted R-Squared	27.4%		27.4%	
No. of Observations	52,329		52,329	

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TABLE 5 – *continued*

Panel B: Equity issuances

Dependent Variable:	EQUITY ISSUANCE			
	(1)		(2)	
	Coef.	*t*-Stat.	Coef.	*t*-Stat.
INSPECTION	0.001	0.40	0.002	0.75
REPORT	0.002	1.44	0.004*	1.95
INSPECTION × %PART I FINDINGS			-0.002	-0.84
REPORT × %PART I FINDINGS			-0.003	-1.41
TOBIN'S Q	0.022***	14.56	0.022***	14.56
SALES GROWTH	-0.003	-1.41	-0.003	-1.41
CFO	-0.021***	-2.59	-0.021***	-2.59
ROA	-0.049***	-4.98	-0.049***	-4.97
DIVIDEND INDICATOR	0.003**	2.26	0.003**	2.26
LN(MVE)	-0.018***	-10.29	-0.018***	-10.29
CASH	-0.057***	-6.74	-0.057***	-6.74
LEVERAGE	0.003	0.47	0.003	0.47
ASSET TANGIBILITY	-0.004	-0.46	-0.004	-0.46
MISSING DUMMY	-0.047***	-15.96	-0.047***	-15.97
			Sum	*p*-Value
INSPECTION + (*INSPECTION × %PART I FINDINGS*) × Avg. *%PART I FINDINGS*			0.001	0.549
REPORT + (REPORT × %PART I FINDINGS) × Avg. *%PART I FINDINGS*			0.003	0.126
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Adjusted R-Squared	53.8%		53.8%	
No. of Observations	52,329		52,329	

Notes: This table presents the results from regressions of the amount of debt and equity raised on indicator variables capturing changes in auditor oversight, and control variables. See Appendix A for variable definitions. The *t*-statistics are clustered at the country-auditor level. ***, **, and * denote statistical significance at the two-tailed 1, 5, and 10 percent levels, respectively.

TABLE 6
Effect of PCAOB Oversight on Capital Expenditures

Dependent Variable:	CAPEX			
	(1)		(2)	
	Coef.	t-Stat.	Coef.	t-Stat.
INSPECTION	-0.000	-0.40	-0.002	-1.06
REPORT	0.001	1.03	0.003***	2.60
INSPECTION × %PART I FINDINGS			0.002	1.16
REPORT × %PART I FINDINGS			-0.005***	-2.80
TOBIN'S Q	0.005***	8.32	0.005***	8.31
SALES GROWTH	0.003***	4.16	0.003***	4.16
CFO	0.031***	7.90	0.031***	7.91
LN(MVE)	0.003***	4.31	0.003***	4.31
CASH	0.041***	11.98	0.041***	11.99
LEVERAGE	-0.037***	-11.84	-0.037***	-11.83
ASSET TANGIBILITY	-0.000	-0.04	-0.000	-0.03
			Sum	p-Value
INSPECTION + (INSPECTION × %PART I FINDINGS) × Avg. %PART I FINDINGS			-0.001	0.412
REPORT + (REPORT × %PART I FINDINGS) × Avg. %PART I FINDINGS			0.001	0.197
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Adjusted R-Squared	61.1%		61.2%	
No. of Observations	52,329		52,329	

Notes: This table presents the results from regressions of capital expenditures on indicator variables capturing changes in auditor oversight, and control variables. See Appendix A for variable definitions. The *t*-statistics are clustered at the country-auditor level. ***, **, and * denote statistical significance at the two-tailed 1, 5, and 10 percent levels, respectively.

TABLE 7
Pre-Treatment Trends in External Financing and Capital Expenditures

Panel A: External Financing

Dependent Variable:	EXTERNAL FINANCING			
	(1)		(2)	
	Coef.	*t*-Stat.	Coef.	*t*-Stat.
REPORT [-4]	-0.002	-0.70	0.002	0.44
REPORT [-3]	-0.001	-0.40	0.004	0.83
REPORT [-2]	-0.001	-0.14	0.003	0.48
REPORT [-1]	-0.002	-0.65	0.002	0.39
REPORT [0]	0.001	0.25	0.016*	1.67
REPORT [1]	0.002	0.54	0.010*	1.93
REPORT [2]	0.005	1.28	0.014**	2.18
REPORT [3]	0.007	1.51	0.017**	2.19
REPORT [4+]	0.004	0.65	0.018*	1.83
REPORT [-4] × %PART I FINDINGS			-0.008	-1.24
REPORT [-3] × %PART I FINDINGS			-0.010	-1.32
REPORT [-2] × %PART I FINDINGS			-0.002	-0.14
REPORT [-1] × %PART I FINDINGS			-0.005	-0.60
REPORT [0] × %PART I FINDINGS			-0.020**	-2.02
REPORT [1] × %PART I FINDINGS			-0.013**	-2.02
REPORT [2] × %PART I FINDINGS			-0.011	-1.47
REPORT [3] × %PART I FINDINGS			-0.011	-1.52
REPORT [4+] × %PART I FINDINGS			-0.020*	-1.76
			Sum	*p*-Value
REPORT[-4] + (REPORT[-4] ×%PART I FINDINGS)×Avg. %PART I			-0.001	0.823
REPORT[-3] + (REPORT[-3] ×%PART I FINDINGS)×Avg. %PART I			0.001	0.888
REPORT[-2] + (REPORT[-2] ×%PART I FINDINGS)×Avg. %PART I			0.002	0.740
REPORT[-1] + (REPORT[-1] ×%PART I FINDINGS)×Avg. %PART I			0.001	0.892
REPORT[0] + (REPORT[0] ×%PART I FINDINGS)×Avg. %PART I			0.009	0.163
REPORT[1] + (REPORT[1] ×%PART I FINDINGS)×Avg. %PART I			0.006	0.125
REPORT[2] + (REPORT[2] ×%PART I FINDINGS)×Avg. %PART I			0.011**	0.035
REPORT[3] + (REPORT[3] ×%PART I FINDINGS)×Avg. %PART I			0.013**	0.029
REPORT[4+] + (REPORT[4+] ×%PART I FINDINGS) ×Avg. %PART I			0.011	0.165
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Control Variables	Included		Included	
Adjusted R-Squared	41.9%		41.9%	
No. of Observations	52,329		52,329	

TABLE 7 – *continued*

Panel B: Capital Expenditures

Dependent Variable:	CAPEX			
	(1)		(2)	
	Coef.	*t*-Stat.	Coef.	*t*-Stat.
REPORT [-4]	-0.000	-0.12	0.000	0.22
REPORT [-3]	0.001	0.93	0.002	1.02
REPORT [-2]	-0.000	-0.29	0.001	0.46
REPORT [-1]	0.001	1.10	0.001	0.65
REPORT [0]	-0.001	-0.58	0.002	0.59
REPORT [1]	0.002*	1.65	0.004**	2.15
REPORT [2]	0.005***	3.66	0.010***	4.65
REPORT [3]	0.006***	3.19	0.012***	4.01
REPORT [4+]	0.008***	2.72	0.015***	3.98
REPORT [-4] × %PART I FINDINGS			-0.002	-0.55
REPORT [-3] × %PART I FINDINGS			-0.002	-0.87
REPORT [-2] × %PART I FINDINGS			-0.005	-0.67
REPORT [-1] × %PART I FINDINGS			0.003	0.88
REPORT [0] × %PART I FINDINGS			-0.003	-0.93
REPORT [1] × %PART I FINDINGS			-0.004*	-1.70
REPORT [2] × %PART I FINDINGS			-0.007**	-2.54
REPORT [3] × %PART I FINDINGS			-0.009***	-2.99
REPORT [4+] × %PART I FINDINGS			-0.012**	-2.55
			Sum	*p*-Value
REPORT[-4] + (REPORT[-4] ×%PART I FINDINGS)×Avg. %PART I			0.000	0.917
REPORT[-3] + (REPORT[-3] ×%PART I FINDINGS)×Avg. %PART I			0.001	0.366
REPORT[-2] + (REPORT[-2] ×%PART I FINDINGS)×Avg. %PART I			-0.001	0.760
REPORT[-1] + (REPORT[-1] ×%PART I FINDINGS)×Avg. %PART I			0.002	0.121
REPORT[0] + (REPORT[0] ×%PART I FINDINGS)×Avg. %PART I			0.001	0.735
REPORT[1] + (REPORT[1] ×%PART I FINDINGS)×Avg. %PART I			0.003**	0.033
REPORT[2] + (REPORT[2] ×%PART I FINDINGS)×Avg. %PART I			0.007***	0.000
REPORT[3] + (REPORT[3] ×%PART I FINDINGS)×Avg. %PART I			0.008***	0.000
REPORT[4+] + (REPORT[4+] ×%PART I FINDINGS) ×Avg. %PART I			0.010***	0.001
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Control Variables	Included		Included	
Adjusted R-Squared	61.2%		61.2%	
No. of Observations	52,329		52,329	

Notes: This table presents the results from regressions of external financing and capital expenditures on indicator variables capturing changes in auditor oversight, auditor deficiencies identified in auditors' inspection reports and control variables. See Appendix A for variable definitions. The *t*-statistics are clustered at the country-auditor level. ***, **, and * denote statistical significance at the two-tailed 1, 5, and 10 percent levels, respectively.

TABLE 8

Economic Effects of PCAOB Oversight Conditional on the Degree of Financing Constraints

Dependent Variable:	EXTERNAL FINANCING		CAPEX	
	(1)		(2)	
	Coef.	*t*-Stat.	Coef.	*t*-Stat.
INSPECTION	0.003	1.12	-0.000	-0.54
REPORT	0.003	0.94	-0.001	-0.63
INSPECTION × FIN CONSTRAINED	-0.006	-1.25	0.001	0.38
REPORT × FIN CONSTRAINED	0.007*	1.73	0.005***	3.77
FIN CONSTRAINED	-0.005	-1.33	-0.003**	-2.19
TOBIN'S Q	0.028***	16.68	0.005***	8.26
SALES GROWTH	0.004*	1.88	0.003***	4.17
ROA	-0.071***	-5.89		
DIVIDEND INDICATOR	0.009	0.65		
CFO	0.007**	2.34	0.030***	7.81
LN(MVE)	-0.015***	-7.64	0.003***	4.22
CASH	-0.076***	-7.39	0.041***	11.97
LEVERAGE	-0.353***	-27.85	-0.037***	-11.83
ASSET TANGIBILITY	0.041***	3.50	-0.000	-0.07
MISSING DUMMY	-0.044***	-13.32		
	Sum	*p*-Value	Sum	*p*-Value
INSPECTION+ (INSPECTION×FIN CONSTRAINED)	-0.003	0.455	0.000	0.942
REPORT+(REPORT×FIN CONSTRAINED)	0.009**	0.037	0.005***	0.001
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Adjusted R-Squared	41.9%		61.2%	
No. of Observations	52,329		52,329	

Notes: This table presents the results from regressions of external financing and capital expenditures on indicator variables capturing changes in auditor oversight and control variables conditioned on the degree of financing constraints. See Appendix A for variable definitions. The *t*-statistics are clustered at the country-auditor level. ***, **, and * denote statistical significance at the two-tailed 1, 5, and 10 percent levels, respectively.

TABLE 9

Economic Effects of PCAOB Oversight Conditional on having a Big 4 Auditors

Dependent Variable:	EXTERNAL FINANCING		CAPEX	
	(1)		(2)	
	Coef.	*t*-Stat.	Coef.	*t*-Stat.
INSPECTION	0.001	0.32	-0.000	-0.04
REPORT	0.005	1.54	0.001	0.97
INSPECTION × NOT BIG4	0.002	0.23	-0.003	-1.01
REPORT × NOT BIG4	-0.002	-0.22	0.001	0.32
TOBIN'S Q	0.028***	16.75	0.005***	8.32
SALES GROWTH	0.004*	1.89	0.003***	4.16
ROA	-0.071***	-5.87		
DIVIDEND INDICATOR	0.010	0.71		
CFO	0.009***	3.87	0.031***	7.91
LN(MVE)	-0.015***	-7.66	0.003***	4.31
CASH	-0.076***	-7.43	0.041***	12.00
LEVERAGE	-0.353***	-27.86	-0.037***	-11.84
ASSET TANGIBILITY	0.041***	3.52	-0.000	-0.04
MISSING DUMMY	-0.044***	-13.33		
	Sum	*p*-Value	Sum	*p*-Value
INSPECTION+ (INSPECTION×NOT BIG4)	0.003	0.739	-0.003	0.295
REPORT+(REPORT×NOT BIG4)	0.003	0.693	0.002	0.536
Country × Industry × Year Indicators	Included		Included	
Company Indicators	Included		Included	
Adjusted R-Squared	41.9%		61.2%	
No. of Observations	52,329		52,329	

Notes: This table presents the results from regressions of external financing and capital expenditures on indicator variables capturing changes in auditor oversight and control variables conditioned on whether the auditor is member of the big-four auditor network. See Appendix A for variable definitions. The *t*-statistics are clustered at the country-auditor level. ***, **, and * denote statistical significance at the two-tailed 1, 5, and 10 percent levels, respectively.