PCAOB INTERNATIONAL INSPECTIONS, AUDIT PROFESSION DEVELOPMENT, AND AUDIT QUALITY

By

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Abstract

Using the setting where auditors of foreign companies cross-listed on U.S. stock exchanges are subject to Public Company Accounting Oversight Board (PCAOB) inspection after July 19, 2004, I examine the impact of PCAOB international inspections and audit profession development (APD) on audit quality. I hypothesize and find that PCAOB inspection access in a country is associated with a decrease in total accruals. In countries with higher levels of APD, the first PCAOB inspections conducted in a country are associated with an incremental decrease in total and abnormal accruals. In countries with lower levels of APD, total and abnormal accruals are incrementally smaller (less income-increasing) for the firms that have been inspected relative to the firms that are not inspected, consistent with my prediction.

The results of the going concern analysis indicate that for distressed companies in countries with low APD, the propensity to issue a going concern opinion is significantly higher after PCAOB inspection access is granted. Contrary to my prediction, however, the propensity to issue a going concern opinion is incrementally lower for the firms that have been inspected relative to the firms that are not inspected, in low APD countries. However, overall, the propensity to issue a going concern opinion is higher after PCAOB inspection access, the commencement of PCAOB inspections in a country, and being the inspected audit firm, as compared to the pre-PCAOB inspection access period, for distressed companies in countries with low APD.

The international inspection issue has received much regulatory attention. The PCAOB has claimed that U.S. investors "are deprived of the potential benefits of PCAOB inspections" of the auditors in jurisdictions where PCAOB inspections are not permitted (PCAOB, 2011b). The findings in my study provide some evidence that PCAOB international inspections are associated with one of these potential benefits, increased audit quality.

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Chapter 1

Introduction

The purpose of this thesis is to investigate the impact of Public Company Accounting Oversight Board (PCAOB or Board) international inspections and audit profession development (APD) on audit quality. In this thesis, I address the following research questions. First, are PCAOB international inspections associated with increased audit quality? Second, if PCAOB international inspections enhance audit quality, what is the mechanism? Is it because the threat of inspection increases auditor effort and/or independence, or is it because the inspection process identifies audit process deficiencies that are subsequently remedied? Third, are the audit quality effects resulting from PCAOB international inspections evenly distributed across countries with varying levels of APD? I examine these questions in the setting where the auditors of foreign companies cross-listed on U.S. stock exchanges are subject to PCAOB inspection after July 19, 2004, and use APD to test for cross-country variation in the impact of inspections. PCAOB inspections increase regulatory scrutiny, require stricter compliance with auditing standards, and subject auditors to higher penalties for misconduct (DeFond and Lennox, 2011). However, the institutional context in which these international inspections are conducted varies across countries. Both of these factors affect auditor incentives and, therefore, audit quality.

Created by the Sarbanes-Oxley Act of 2002 (SOX), the PCAOB aims "to improve audit quality, reduce the risks of auditing failures in the U.S. public securities market and promote public trust in both the financial reporting process and auditing profession" (PCAOB, 2011a). U.S. and non-U.S. public accounting firms must register with the PCAOB in order to prepare,

issue, or participate in audit reports of SEC registrants, and registered firms are subject to PCAOB inspections.

Descriptive studies of U.S. PCAOB inspections show that PCAOB inspection reports of both annually and triennially inspected firms report audit and quality control deficiencies (Church and Shefchik, 2012; Hermanson et al., 2007). Studies examining the impact of PCAOB inspections have found that small, low quality auditors exited the market rather than being subject to PCAOB inspection (DeFond and Lennox, 2011), and that a firm is more likely to issue a going-concern opinion for financially distressed clients after a PCAOB inspection (Gramling et al., 2011).

Results of studies of PCAOB inspections and perceived audit quality are mixed. Lennox and Pittman (2010) find no evidence that PCAOB inspection deficiencies are associated with clients' auditor hiring and firing decisions. In contrast, two studies of triennially inspected firms find that inspection deficiencies are associated with auditor switches (Daugherty et al., 2011; Abbott et al., 2013). Studies that examine audit quality find a reduction in client abnormal accruals after the first and second PCAOB inspections of U.S. Big 4 firms (Carcello et al., 2011b); that serious inspection deficiencies are associated with more abnormal accruals management and a higher probability of restatement (Gunny and Zhang, 2013); and that audit firms receiving PCAOB inspection reports with higher internal control deficiency rates subsequently issue more adverse internal control opinions (DeFond and Lennox, 2015). These studies provide some evidence that the PCAOB is making progress toward its goal of improving audit quality in the U.S.

Internationally, however, the PCAOB has encountered some obstacles. Under SOX, non-U.S. public accounting firms that audit or play a substantial role in the audit of U.S. issuers, brokers, and dealers are subject to oversight by the PCAOB. Inspections of non-U.S. firms began in 2005; however, by the 2008 inspection deadline for certain firms, the PCAOB had experienced

challenges in conducting the inspections, including inspection schedule timing of the home country, sovereignty concerns, or potential legal conflicts.[1] On May 18, 2010, the Board published a list of more than 400 non-U.S. companies whose financial statements were filed with the SEC in 2009 or 2010 (through mid-April), but whose PCAOB-registered auditors the Board could not inspect because of asserted non-U.S. legal obstacles (PCAOB, 2010c). The auditors of the issuers appearing on the list were located in China, Hong Kong (to the extent their audit clients had operations in China), Switzerland and 18 European Union countries.

While the evidence suggests that the PCAOB is making progress toward its goal of improving audit quality in the U.S., the literature examining PCAOB international inspections is at an early stage. Bishop et al. (2013) examine first- and second-time PCAOB inspection reports of international audit firms and find audit and quality control deficiency levels similar to those found for U.S. firms. Concurrent work by Fung et al. (2014), Krishnan et al. (2016), and Lamoreaux (2016) investigates the effect of PCAOB international inspections on audit quality. The results of Fung et al. (2014) suggest that PCAOB international inspections provide spillover audit quality benefits to foreign companies that are not U.S.-listed. Krishnan et al. (2016) find that abnormal accruals are lower and value relevance of accounting numbers is higher over 2000-2011 after initial PCAOB inspections of foreign audit firms. Lamoreaux (2016) finds that PCAOB inspection access is positively associated with an auditor's propensity to both issue a going concern opinion and report a material weakness in internal control over financial reporting, and negatively associated with earnings management. These studies provide preliminary evidence that PCAOB international inspections are positively associated with audit quality.

[1] If possible, the Board tries to conduct inspections jointly with local authorities. Like the PCAOB, certain local authorities proceed according to inspection frequency requirements; thus, synchronizing the inspection schedules of both the PCAOB and local authority may sometimes require one-time scheduling adjustments by the PCAOB (PCAOB, 2008b).

Research that examines cross-country differences in auditor incentives and auditing practice and the effect on audit quality suggests that institutional differences influence audit quality internationally (Francis and Wang, 2008; Choi et al., 2008; Michas, 2011). As the institutional environment is different in each country where PCAOB inspections have been, or ultimately will be, conducted, I expect that there will be country-level variation in the outcomes of PCAOB international inspections.

In this thesis, I examine the relationship between PCAOB international inspections and one institutional factor, audit profession development, and audit quality. PCAOB inspections provide audit firms with ex-ante incentives to increase audit quality (DeFond, 2010) and may improve audit quality post-inspection as a result of changes in firm performance arising from the PCAOB inspection process (Carcello et al., 2011b). I hypothesize that audit quality of cross-listed companies is lower in countries where PCAOB inspections are prohibited as compared to cross-listed companies in countries where PCAOB inspections are permitted. All else equal, I further hypothesize that audit quality of cross-listed companies increases in a country after the first PCAOB inspection is conducted. The international setting also permits an examination of the mechanism by which PCAOB inspections affect audit quality as there is considerable cross- and within-country variation in inspection timing. In general, PCAOB inspection frequency is based on the number of audit reports issued by a firm. A firm that provides audit reports for more than 100 (100 or fewer) issuers is subject to annual (triennial) inspection. Internationally, the Big N firms have fewer than 100 issuer audit clients in each country. Thus, even if PCAOB inspections are permitted in a country, not all audit firms in the country will be subject to inspection each year. This is different from the U.S. environment where the Big N audit firms have been subject to annual PCAOB inspection since 2004. Therefore, the international setting provides a control

sample of firms from countries where PCAOB inspections are not permitted as well as time series variation in the granting of PCAOB inspection access which are lacking in U.S. PCAOB studies, permitting an analysis of *how* PCAOB inspections affect audit quality internationally.

In addition, there is significant country-level variation in APD in my sample countries. Country-level APD contributes to the competence and independence of the auditor, both necessary inputs to the delivery of high quality audits (Watts and Zimmerman, 1986). In countries with a highly developed audit profession, I expect that auditors demonstrate a high level of competence as a result of rigorous professional training, and have strong incentives to implement a high level of audit quality. I hypothesize that in such an environment, the requirement to submit to a PCAOB inspection is likely to have a lesser impact on audit quality, as changes in firm performance resulting from a PCAOB inspection are less likely to occur. In countries with a low level of APD, the requirement to submit to a PCAOB inspection is likely to have a greater impact, as changes in firm performance resulting from a PCAOB inspection are more likely to occur. The international setting can provide insight into when inspections are more important by exploiting the variation across countries in APD.

I operationalize audit quality in terms of two outcomes: total and abnormal accruals (Carcello et al., 2011b; Gunny and Zhang, 2013; Francis and Wang, 2008; Michas, 2011) and going concern opinions (Gramling et al., 2011). In sensitivity analysis, I further operationalize audit quality in terms of audit fees, a proxy for audit inputs and process (Choi et al., 2008). For a sample that includes both jurisdictions with PCAOB inspection access as well as jurisdictions where PCAOB inspection access has never been permitted (the FULL sample), I find that, in countries with high APD, PCAOB inspection access in a country is associated with a decrease in total accruals, and the first PCAOB inspections conducted in a country are associated with an

incremental decrease in total and abnormal accruals. In addition, the total effect of being the inspected auditor is negative and significant in both high and low APD countries. In countries with low APD, total and abnormal accruals are incrementally smaller (less income-increasing) for the firms that have been inspected relative to the firms that are not inspected. Overall, abnormal accruals are lower after the first PCAOB inspections are conducted in a country and for the firms that have been inspected, in countries with both low and high APD. For a sample made up of firms whose auditor is resident in a country where PCAOB inspections are permitted (the PERMITTED COUNTRY sample), I find that in countries with high APD, PCAOB inspection access in a country is associated with a decrease in total accruals, and that the total effect of the first PCAOB inspections conducted in a country is a decrease in total accruals. The decrease in total accruals (and increase in audit quality) after being the inspected audit firm is larger in countries with a low level of APD compared to countries with a high level of APD, consistent with my prediction. Contrary to my prediction, however, there is no difference in the effect of PCAOB inspection access, the commencement of inspections in a country, or being the inspected audit firm, on abnormal accruals between low versus high APD countries for the PERMITTED COUNTRY sample.

The results of the going concern analysis indicate that neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being an inspected audit firm has a significant effect on the propensity to issue a going concern opinion in countries with high APD. For distressed companies in countries with low APD, the propensity to issue a going concern opinion is significantly higher after PCAOB inspection access is granted. Contrary to my prediction, however, the propensity to issue a going concern opinion is incrementally lower for the firms that have been inspected relative to the firms that are not inspected, in low APD

countries. However, overall, the propensity to issue a going concern opinion is higher after PCAOB inspection access, the commencement of PCAOB inspections in a country, and being an inspected audit firm, as compared to the pre-PCAOB inspection access period, for distressed companies in low APD countries.

The results for audit fees are mixed. I find no evidence that either PCAOB inspection access, or being the inspected audit firm, is associated with an increase in audit fees. However, in a model specification which includes country fixed effects, audit fees in a country are incrementally higher after the first PCAOB inspections are conducted as compared to the pre-PCAOB inspection period. Neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has any effect on audit fees in high APD countries. Contrary to my prediction, audit fees are lower after PCAOB inspections are permitted and after the commencement of PCAOB inspections in a country, as compared to the pre-PCAOB inspection access period, in countries with low APD.

The international setting of my study also provides insight into the mechanism by which PCAOB inspections affect audit quality as there is considerable cross- and within-country variation in inspection timing in my sample. The results of my study provide some evidence that PCAOB international inspections are associated with increased audit quality. The mechanism by which PCAOB international inspections increase audit quality, however, is different depending on the outcome examined. The results of the going concern analysis suggest that it is the threat of inspection which increases auditor effort and/or independence, as it is PCAOB inspection *access* which is associated with an increase in the propensity to issue a going concern opinion for distressed companies. For the accruals analysis; however, it is also *being the inspected audit firm*

that is associated with the increase in audit quality. This suggests that the inspection process itself contributes to the increase in audit quality.

My study contributes to the literature on audit quality in several important ways. First, it answers the call in DeFond and Francis (2005) for cross-country comparisons to examine the effects of alternative institutional arrangements on auditing. My cross-country setting allows me to examine the impact of a country's institutional environment on PCAOB inspections. Second, I extend the analysis of the impact of APD on company-level audit quality in developing countries in Michas (2011) to an additional important setting. The results of this study will contribute to the auditing and regulation literature and will provide insight into the effectiveness of oversight mechanisms used to monitor the profession and how they may affect audit quality.

The remainder of this thesis is organized as follows. Chapter 2 discusses the institutional background of the study. Chapter 3 reviews the relevant literature and develops hypotheses. Chapter 4 describes the measurement of the main variables and the sample selection procedures, and outlines the empirical design. Chapter 5 presents the main findings, followed by sensitivity tests in Chapter 6. Finally, Chapter 7 summarizes my investigation.

Chapter 2

Institutional Background

2.1 Public Company Accounting Oversight Board (PCAOB)

The PCAOB was created by the Sarbanes-Oxley Act of 2002 (SOX). The mission of the PCAOB "is to oversee the audits of public companies in order to protect the interests of investors and further the public interest in the preparation of informative, accurate and independent audit reports" (PCAOB, 2011a). Further, "the PCAOB aims to improve audit quality, reduce the risks of auditing failures in the U.S. public securities market and promote public trust in both the financial reporting process and auditing profession" (PCAOB, 2011a).

U.S. and non-U.S. public accounting firms must register with the PCAOB in order to prepare, issue, or participate in audit reports of SEC-registered issuers, brokers, and dealers. As of July 27, 2012, 2,398 public accounting firms, U.S. and non-U.S., are registered with the PCAOB (PCAOB, 2012b). Registered public accounting firms must file annual reports providing information about whether the firm issued any audit reports for or played a substantial role in any audits of issuers. Firms must also report circumstances or events that could require follow-up through the Board's inspection or enforcement processes or that may otherwise merit being brought to the public's attention.[2]

[2] Examples of events that trigger special reporting include withdrawal by the firm of an audit report where the issuer has failed to comply with Securities and Exchange Commission (SEC or Commission) reporting requirements; the initiation or resolution of criminal, civil or disciplinary proceedings against the firm, or a partner, shareholder, principal, owner, member, or audit manager of the firm; and bankruptcy or similar proceedings against the firm, or a parent or subsidiary (PCAOB, 2008a).

Registered firms are also subject to PCAOB inspections to assess compliance with SOX, the rules of the PCAOB and SEC, and professional standards, in relation to the firm's work involving U.S. companies. Many registered firms perform no such work, and the work they do perform is outside the scope of the PCAOB's statutory responsibility and authority to assess; thus, the PCAOB does not inspect those firms. As of July 27, 2012, approximately 850 of the 2,398 registered firms are subject to PCAOB inspections (PCAOB, 2012b). In general, PCAOB inspection frequency is based on the number of audit reports provided by a firm. A firm that provides audit reports for more than 100 (100 or fewer) issuers is subject to annual (triennial) inspection. In addition, the PCAOB might, at any time, inspect any other registered firm that plays a role in the audit of an issuer.

A PCAOB inspection includes at least the following components: (1) inspection and review of selected audit and review engagements of the firm, performed at various offices and by various associated persons of the firm; (2) evaluation of the sufficiency, documentation, and communication of the quality control system of the firm; and (3) performance of other testing of the audit, supervisory, and quality control procedures of the firm as are required (PCAOB, 2004c). In 2012, the PCAOB budget for inspections of issuer auditors was $112,083,000 (PCAOB, 2012c).[3] PCAOB inspections regularly identify deficiencies in firms' audits and in their quality control procedures (PCAOB, 2011b).

SOX requires the Board to prepare a report concerning each inspection and provides that the report "shall be (1) transmitted, in appropriate detail, to the Commission and each appropriate State regulatory authority… and (2) made available in appropriate detail to the public [subject to

[3] The Division of Registration and Inspections is the PCAOB's largest operating division; division operations include firm registration, the Global Network Firm Inspection Program, the Non-Affiliate Firm Inspection Program, and the Broker-Dealer Interim Inspection Program.

certain restrictions]."[4] Part I, the public portion of a report, includes descriptions of issues identified by the Board's staff in the course of reviewing the firms' performance on selected audit engagements. According to the PCAOB's Statement on the Issuance of Inspection Reports (PCAOB, 2004c):

> Specifically, the reports may describe apparent departures from auditing standards, related attestation standards, ethical standards, independence standards, and the firm's own quality control policies and procedures. Those departures described in the report may include failures by the firm to identify or appropriately address apparent errors in an audit client's application of GAAP.

The Part I report will not include any discussion of criticisms of, or potential defects in, a firm's quality control systems if the firm addresses them to the Board's satisfaction within 12 months after the report date.[5] If a firm fails to satisfactorily address any of the quality control criticisms within 12 months, the Board will make public these portions of the report in Part II (PCAOB, 2004c).

The PCAOB has the authority to investigate and discipline registered public accounting firms and associated persons for noncompliance with SOX, the rules of the PCAOB and the SEC, and other laws, rules, and professional standards governing the audits of public companies, brokers, and dealers (PCAOB, 2011c). The PCAOB's Division of Enforcement and Investigations budget for 2012 was $20,028,000 (PCAOB, 2012c).[6] When violations are found, the PCAOB can

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[4] Section 104(g) of SOX, 15 U.S.C. § 7214(g).

[5] PCAOB evaluation of a firm's quality control system typically includes review of policies, procedures, and practices concerning audit performance, training, compliance with independence requirements, client acceptance and retention, and the establishment of policies and procedures. PCAOB inspectors may also review the firm's "tone at the top" as it relates to audit quality; partner management, including evaluation, compensation, admission, and discipline; use of the work performed by foreign affiliates; and the firm's self-monitoring of its practice through the firm's internal inspections and analyses of, and responses to, identified weaknesses (PCAOB, 2012d).

[6] The Division of Enforcement and Investigations consists of a team of attorneys, accountants, and other professional staff conducting investigations and litigation of possible violations of PCAOB rules and other applicable securities regulations.

impose sanctions which include suspension or revocation of a firm's registration, suspension or bar of an individual from associating with a registered public accounting firm, and civil monetary penalties. The Board may also require improvements in a firm's quality control, training, or independent monitoring of the audit work of a firm or individual (PCAOB, 2011c).

2.2 International Inspections

Under SOX, non-U.S. public accounting firms that audit or play a substantial role in the audit of U.S. issuers, brokers, and dealers are subject to PCAOB oversight. As of May 8, 2012, 914 non-U.S. audit firms from 86 countries are registered with the PCAOB (PCAOB, 2012a). Inspections of non-U.S. firms pose special issues, and the Board seeks, where possible, to coordinate and cooperate with local authorities. Since the PCAOB began operations in 2003, many jurisdictions have developed new or enhanced existing oversight systems. PCAOB Rules 4011 and 4012 provide a framework for working cooperatively with non-U.S. counterparts to conduct joint inspections, and relying, as appropriate, on inspection work performed by that counterpart (PCAOB, 2004b). The Board's reliance on the home country system is increasing in its independence and rigour. The Board maintains that it is in the interests of the public and investors for the Board to develop efficient and effective cooperative arrangements with its non-U.S. counterparts. However, the Board's ability to conduct inspections, including joint inspections, in certain jurisdictions is complicated by the need to address potential legal obstacles and sovereignty concerns. Substantial effort is involved to try to resolve potential conflicts of law or to evaluate a non-U.S. system in response to a Rule 4011 request (PCAOB, 2008b).

The deadline for registration of foreign public accounting firms was July 19, 2004 (PCAOB, 2004a). Inspections of non-U.S. firms began in 2005. The Board, however, experienced significant delays in conducting planned inspections. In addition, because of asserted restrictions under non-U.S. law or objections based on national sovereignty, access to the information necessary to conduct inspections of registered firms was, and continued to be, denied in China, Finland, France, Germany, Greece, Ireland, the Netherlands, Norway, Portugal, Sweden, Switzerland, and the United Kingdom (PCAOB, 2009b). Appendix B provides further details about the delays and challenges that the PCAOB experienced. Because investors in U.S. markets may have been relying on the audit work of certain firms without realizing that those firms were uninspected by the PCAOB, the Board published, on May 18, 2010, a list of more than 400 non-U.S. companies whose financial statements were filed with the SEC in 2009 or 2010 (through mid-April), but whose PCAOB-registered auditors the Board could not inspect because of asserted non-U.S. legal obstacles (PCAOB, 2010c). The auditors of the issuers appearing on the list were located in China, Hong Kong (to the extent their audit clients had operations in China), Switzerland and 18 European Union countries.[7]

The Board continued to work to resolve the obstacles to inspection in China, Hong Kong (to the extent their audit clients had operations in China), Switzerland and the European Union countries. On January 10, 2011, the PCAOB and the Professional Oversight Board (POB) in the United Kingdom entered into a cooperative agreement which provides a basis for the resumption of PCAOB inspections of registered accounting firms located in the United Kingdom and that audit, or participate in audits of, companies whose securities trade in U.S. markets. The PCAOB

[7] The European Union countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, and the United Kingdom.

had previously conducted inspections in the United Kingdom with the POB from 2005 to 2008, but had been prevented from doing so since that time (PCAOB, 2011d). Additional cooperative agreements have now been signed with the Swiss Federal Audit Oversight Authority and Financial Market Supervisory Authority (April 6, 2011), the Financial Supervisory Authority of Norway (September 14, 2011), the Netherlands Authority for the Financial Markets (December 5, 2011), the German Auditor Oversight Commission (April 13, 2012), and the Accounting and Auditing Institute of Spain (July 18, 2012), providing a basis for the resumption of joint inspections of PCAOB-registered accounting firms that are located in Switzerland, Norway, the Netherlands, Germany, and Spain. The PCAOB continues to work with their counterparts in other countries to establish similar cooperative arrangements.[8]

[8] Additional cooperative agreements have now been signed with the French High Council for Statutory Auditors (H3C) (February 4, 2013), the Auditing Board of the Central Chamber of Commerce (AB3C) of Finland (February 4, 2013), the Supervisory Board of Public Accountants (RN) of Sweden (March 31, 2014), the Danish Business Authority (DBA) (July 18, 2014), the Auditors' Public Oversight Authority of the Ministry for the National Economy of Hungary (APOA) (April 16, 2015), the Hellenic Accounting and Auditing Standards Oversight Board (HAASOB) (August 19, 2015), and the Commission de Surveillance du Secteur Financier (CSSF) of Luxembourg (September 21, 2015), providing a basis for the resumption of joint inspections of PCAOB-registered accounting firms that are located in France, Finland, Sweden, Denmark, Hungary, Greece, and Luxembourg. In addition, on May 24, 2013, the PCAOB entered into a Memorandum of Understanding (MOU) on Enforcement Cooperation with the China Securities Regulatory Commission (CSRC) and the Ministry of Finance (MOF) which establishes a cooperative framework between the parties for the production and exchange of audit documents relevant to investigations in both countries' respective jurisdictions. However, these cooperative agreements and the MOU are outside of the sample period of my study.

Chapter 3

Literature Review and Hypothesis Development

Two streams of literature are relevant to my study. The first stream includes studies of auditor incentives and audit quality, including studies which specifically examine the impact of PCAOB inspections. The second stream includes studies of cross-country differences in legal institutions and investor protection and the impact of these factors on audit quality.

3.1 Auditor Incentives and Audit Quality

The role of auditing is to monitor and enforce the application of accounting policies and auditors' incentives are key to the delivery of high quality audits (Watts and Zimmerman, 1986). The supply of audit quality is a function of both the auditor's incentives for independence and their competency (Watts and Zimmerman, 1981). Institutions and contractual arrangements exist that provide the auditor with incentives to be independent. Litigation and reputational concerns are the most common incentives that have been associated with audit quality (DeFond, 2010).

DeAngelo (1981) argues that audit firm size alters auditors' incentives such that, ceteris paribus, large audit firms supply a higher level of audit quality. Audit technology is characterized by significant start-up costs, thus permitting incumbent auditors to earn client-specific quasi-rents. According to DeAngelo (1981),

> These quasi-rents, when subject to loss from discovery of a lower-than-promised audit quality, serve as collateral against such opportunistic behavior. This implies that, ceteris paribus, the larger the auditor as measured by the number of current

> clients and the smaller the client as a fraction of the auditor's total quasi-rents, the less incentive the auditor has to behave opportunistically, and the higher the perceived quality of the audit.

Empirical evidence is consistent with the theory. Studies of U.S. companies with Big 4 auditors find that earnings are of higher quality and that the stock market values earnings surprises of Big 4 clients more highly than earnings surprises of non-Big 4 clients (Teoh and Wong, 1993; Krishnan, 2003). The explanation for this finding is that Big 4 auditors in the U.S. impose a high level of earnings quality on their clients in order to protect their brand name reputation. More recently, a stream of research examines whether Big 4 audit quality is uniform across small and large practice offices. Francis and Yu (2009) find that larger Big 4 offices are more likely to issue going-concern audit reports, and that clients of larger offices are less likely to engage in aggressive earnings management behaviour. Choi et al. (2010) find that in the U.S. audit market, both audit quality, measured by unsigned abnormal accruals, and audit fees are positively associated with office size, even after controlling for national-level audit firm size and office-level industry expertise. Finally, Francis et al. (2013) find that client restatements, a more direct measure of low-quality audits, are more likely to occur for the clients of smaller Big 4 offices. These studies provide insight into whether large accounting firms can deliver uniform audit quality across offices in the U.S.

As stated above, the value of external audits derives from users' expectations that auditors will discover and report material misstatements of financial information (Watts and Zimmerman, 1986). The failure to do so often results in litigation against auditors when users incur losses related to materially misstated financial information. Litigation is costly to auditors, and the resulting litigation and other associated costs, including costs associated with professional and

regulatory sanctions and with reduced reputations for quality of service, provide additional incentives to provide high quality audits (Palmrose, 1988).

In addition to litigation and reputation, audit oversight mechanisms are also likely to impact auditors' incentives (DeFond, 2010). PCAOB inspections increase regulatory scrutiny, require stricter compliance with auditing standards, and subject auditors to higher penalties for misconduct (DeFond and Lennox, 2011).

3.2 PCAOB Inspections

A growing literature examines various aspects of PCAOB inspections. Several descriptive studies provide detail on the results of inspections of both large and smaller CPA firms in the U.S., and provide perspectives from the leadership of triennial firms on the PCAOB inspection process. Studies examining the impact of PCAOB inspections in the U.S. fall into four categories: (1) studies examining whether PCAOB inspections influence the behavior of auditors; (2) studies examining the ability of PCAOB inspections to distinguish between high and low quality auditors; (3) studies examining the impact of PCAOB sanctions against a Big 4 auditor; and (4) a study examining the capital market response to the PCAOB inspection regime. Finally, a recent stream of literature examines PCAOB international inspections.

3.2.1 PCAOB Inspection Results and CPA Firm Perspectives

Descriptive studies of the results of PCAOB inspections in the U.S. show that the PCAOB inspection reports of both annually and triennially inspected firms report both audit and quality

control deficiencies.[9] While the number of deficiencies has declined for both large and smaller CPA firms since PCAOB inspections began in 2004, there are conflicting explanations for the decrease. Consistent with the mandate of the PCAOB, PCAOB inspections may have resulted in improved auditor performance. Alternatively, auditors may have modified their conduct of the audit in order to satisfy inspection requirements, without any improvement in performance. Finally, the inspection process itself may have evolved.

Church and Shefchik (2012) analyze 48 PCAOB inspection reports of eight large, annually inspected accounting firms in the U.S. covering the period 2004 to 2009. There were 664 deficiencies noted for these firms; however, 88.6 percent of the deficiencies did not result in a financial statement misstatement. Examining firms' responses to the PCAOB's findings, the authors note that 62.5 percent of firms disagree with some of the findings. Every firm has quality control criticisms in each inspection year; however, none of the criticisms have been publicly disclosed. Over 2004 to 2009, the number of deficiencies, and the number of deficiencies resulting in a misstatement, exhibited a downward, linear trend.

Hermanson et al. (2007) examine 316 PCAOB inspection reports of triennially inspected U.S. CPA firms for 2004 and 2005, and find that 60 (72) percent have audit (quality control) deficiencies identified in their inspection report.[10] Firms with audit deficiencies are smaller, have fewer partners, staff, and total professionals, but have more issuer audit clients, than firms without deficiencies. Deficiency firms were also growing more rapidly in the one-, two-, and

[9] The literature generally refers to a Part I inspection finding as an audit or inspection deficiency, and refers to a Part II inspection finding as a quality control deficiency or criticism.

[10] Audit deficiencies include descriptions of issues identified by the Board's staff in the course of reviewing the firms' performance on selected audit engagements. These issues may include apparent departures from auditing standards, related attestation standards, ethical standards, independence standards, and the firm's own quality control policies and procedures (PCAOB, 2004c). Quality control deficiencies relate to criticisms of, or potential defects in, the quality control systems of the firm under inspection (PCAOB, 2004c).

three-year periods prior to PCAOB inspection, compared to firms without deficiencies. Audit firms inspected in 2004 have a significantly higher rate of deficiencies (87.5 percent) compared to firms inspected in 2005 (49.1 percent). There were 510 deficiencies noted for these firms over this period, resulting in 26 restatements involving 22 audit firms.

Daugherty and Tervo (2010) solicit perceptions of the consequences of PCAOB inspections, and of the inspection process itself, from the leadership of 146 triennial firms receiving their first inspection through 2007, and find that smaller triennial firms (0 to 10 professionals) perceived the consequences of PCAOB inspections more negatively than did medium (11 to 40 professionals) and large (greater than 40 professionals) firms. Smaller firms disagreed somewhat that PCAOB inspections improve overall audit quality, while medium and larger firms expressed some agreement that audit quality is enhanced. With regard to the inspection process, smaller firms disagreed with inspectors' findings, while medium and larger firms expressed increasing levels of agreement. Daugherty and Tervo (2010) further find that firms receiving a deficient inspection report are more critical of both the inspectors and the inspection process. Analyzing firms' responses by year of inspection, the results show that firms view inspections as increasing public confidence and report higher agreement with inspectors' findings with the passage of time.

3.2.2 PCAOB Inspections and Auditor Behaviour

PCAOB inspections are likely to impact auditors' incentives (DeFond, 2010); consequently, they are likely to influence auditor behaviour. DeFond and Lennox (2011) examine how the changes instituted under SOX affect the quality of small firm audits. They find that 607 of 1,233 small audit firms active during 2001-08 exited the market following SOX, with the majority of exits occurring in 2002-04. The exiting auditors are less likely to have undergone an AICPA peer

review from 2001-03 and are more likely to have failed to register with the PCAOB from 2004-08. Compared to non-exiting small audit firms, the peer review and inspection reports for exiting firms contain a greater number of reported weaknesses and deficiencies. DeFond and Lennox (2011) further find that the clients of exiting auditors receive higher quality auditing, measured by the auditor's decision to issue a going-concern opinion, from their successor auditors. The results suggest that PCAOB inspections improve audit quality by incentivizing the lower quality auditors to exit the market.[11]

Gramling et al. (2011) examine whether PCAOB-identified audit deficiencies are associated with a change in going-concern (GC) reporting decisions for financially distressed clients of triennially inspected audit firms. Using 202 U.S. PCAOB inspections from 2004-06, they find that a firm's probability of issuing a going-concern opinion for financially distressed clients is higher after the PCAOB inspection than it was before inspection. They conclude that the "change in GC reporting decisions suggests either (1) an increased willingness. . . of the audit firm to "stand up to the client" and "be tough" on important reporting issues, and/or (2) an increased level of competence brought to the reporting decision" (Gramling et al., 2011). They further examine the going-concern reporting behavior of audit firms receiving a "clean" PCAOB inspection report and find limited evidence of a change in the likelihood of issuing a going concern opinion for these firms. In further analysis, Gramling et al. (2011) examine the accuracy of the going concern opinions issued by examining Type I and Type II errors and find that,

[11] This drop out of lower quality auditors is consistent with the aim of the PCAOB to improve audit quality. As these exiting auditors would no longer be subject to PCAOB inspection, this potentially biases against finding the hypothesized results in my study.

despite the audit firms' change in going-concern reporting behaviour, it has not resulted in a change in the accuracy of the reporting.[12]

Using a proprietary dataset of inspected engagements obtained from the PCAOB, Aobdia (2016a) investigates the impact on auditors' and client issuers' activities of the PCAOB individual engagement inspection process. He finds that the audit firm increases effort on its inspected engagement and also on non-inspected engagements of offices or partners that have identified audit deficiencies, suggesting both direct and spillover effects of PCAOB inspections. However, audit firms reduce their subsequent effort on inspected engagements that did not have identified audit deficiencies. Aobdia (2016a) also finds that the client is more likely to switch auditors, often to auditors with high perceived quality, after their auditor has identified audit deficiencies in their PCAOB inspection. However, clients are less likely to switch auditors following a clean PCAOB inspection.

3.2.3 PCAOB Inspections and Audit Quality

Studies examining PCAOB inspections and audit quality can be divided into those that examine perceived audit quality and those that examine audit quality. Lennox and Pittman (2010) examine audit firm supervision in the U.S. after the PCAOB began conducting inspections in 2004. They use a sample of 545 PCAOB inspection reports issued up to December 31, 2007 and 1,982 peer review reports issued by the AICPA from January 1, 1997 to December 31, 2007 to examine clients' perceptions of audit quality, measured by looking at auditor dismissals. They find that the disclosure of weaknesses in PCAOB inspection reports does not affect clients'

[12] A Type I error results when a going concern opinion is issued but there is no subsequent bankruptcy; a Type II error results when a going concern opinion is not issued but there is a subsequent bankruptcy.

auditor hiring and firing decisions, suggesting that PCAOB inspection reports are not perceived to be informative signals of audit quality. In contrast, the association between AICPA peer review reports and firms' gains and losses of clients is highly significant. Further analysis suggests that the informational value of peer review reports is primarily found in the evaluative summary and disclosure of quality control defects, neither of which are publicly disclosed in PCAOB reports.[13] The authors conclude that, under the new PCAOB inspection regime, less is known about audit quality differences.

Daugherty et al. (2011) use a sample of 748 PCAOB inspection reports issued to triennially inspected audit firms between 2005 and 2008 to examine involuntary and voluntary client losses in the six month period following receipt of a deficient PCAOB inspection report. In contrast to Lennox and Pittman (2010), they find that inspection deficiencies are associated with involuntary dismissal by their clients; furthermore, clients dismissing their auditors are more likely to hire triennially inspected auditors without deficiency reports. Inspection deficiencies are also positively associated with voluntary client losses, measured as the number of publicly traded clients from which the triennially inspected auditor resigned and by discontinuation of registration with the PCAOB, thus precluding the auditor from auditing publicly traded companies. They also find that second inspections are less likely to be associated with both inspection and quality control deficiencies, consistent with prior research. The results suggest that the post-inspection costs of regulatory compliance exceed the benefits associated with auditing public companies for triennially inspected auditors with PCAOB inspection deficiencies.

[13] Unlike PCAOB inspectors, peer reviewers provide an overall opinion (unmodified, modified, or adverse) of the audit firm's quality. Furthermore, peer reviewers disclose deficiencies in audit firms' quality control systems. Information on quality control weaknesses is not included in the public portion of PCAOB inspection reports, provided that the deficiencies are remedied within one year.

Abbott et al. (2013) provide evidence of an agency-based demand for perceived audit quality, as proxied by PCAOB inspection reports, for non-Big 4/non-national CPA firms. Using PCAOB inspection reports for the period January 21, 2005 to July 13, 2006, they identify 47 triennially inspected auditors that received a GAAP-deficient PCAOB inspection report.[14] Abbott et al. (2013) find that, of the 330 clients of GAAP-deficient auditors, 43.2% switched auditors within one year of disclosure of a GAAP-deficient PCAOB inspection report for their incumbent auditor. Using logistic regression to examine the relationship between the likelihood of switching auditors and agency-based explanatory variables, they find a positive (negative) relationship between client size, total cash received from equity or debt issuances, and the presence of an effective audit committee (inside ownership) and the likelihood of switching to a higher quality auditor.

Nagy (2014) examines the change in audit firms' market share for the 12-month period following the public disclosure of identified quality control weaknesses included in Part II of the PCAOB inspection report. Using a sample of 56 Part II inspection reports publicly disclosed before June 2012, Nagy (2014) finds that audit firms lose a significant amount of market share following the public disclosure of quality control criticisms. The results suggest that audit clients perceive the Part II disclosures as a credible signal of audit quality.

Studies that examine audit quality use several proxies to measure audit quality: auditee abnormal accruals, the propensity to restate earnings or to just meet analysts' forecasts, and the auditors' propensity to issue a going concern opinion or to issue adverse internal control audit opinions. Carcello et al. (2011b) examine whether the PCAOB inspection process results in an improvement in the quality of audits provided by Big 4 firms in the U.S. following each of the first two PCAOB inspections in 2004 and 2005. Using a sample of 4,719 auditees, they find a

[14] A GAAP-deficient PCAOB inspection report is a Part I finding which identifies a failure by the firm to identify or appropriately address apparent errors in an audit client's application of GAAP.

significant reduction in abnormal accruals in the year after the first PCAOB inspection, and a further reduction in abnormal accruals in the year after the second PCAOB inspection. In further analysis, Carcello et al. (2011b) examine changes in abnormal accruals for 513 auditees of triennially inspected firms in the U.S. and find no significant change in abnormal accruals in the year following either of the first or second PCAOB inspections. The results provide preliminary evidence that PCAOB inspections in the U.S. have led to improved audit quality for clients of Big 4 firms only; however, due to the lack of a control sample, the authors cannot demonstrate that it is the PCAOB inspection process that causes the improvement.

Gunny and Zhang (2013) examine whether the first U.S. PCAOB inspection reports are able to distinguish between high and low quality auditors, with audit quality measured by the amount of abnormal current accruals, the propensity to restate earnings and to just meet analysts' forecasts, and the auditors' propensity to issue a going concern opinion. Using a sample of 6,947 auditor-client observations, generated from 295 PCAOB inspection reports covering the period August 26, 2004 to September 24, 2007, they find that auditors receiving a seriously deficient first PCAOB inspection report allow more abnormal accruals management and have a higher probability of restatement compared to auditors receiving a positive opinion.[15] The propensities to just meet analysts' forecasts and to issue a going concern opinion are not significantly different between positive, deficient, and seriously deficient inspection reports.

Using internal control reports for fiscal years 2010-2013, DeFond and Lennox (2015) test whether PCAOB inspections help remediate auditors' deficiencies in detecting and reporting

[15] Gunny and Zhang (2013) code the PCAOB opinions as follows: positive, deficient, and seriously deficient. An opinion is coded as positive if no deficiencies are found in the inspection, deficient if the inspection discovered an audit deficiency and seriously deficient if the audit deficiency discovered was that the auditor failed to identify a departure from GAAP or that a deficiency resulted in a financial statement restatement.

material internal control weaknesses. They find that audit firms receiving PCAOB inspection reports with higher internal control deficiency rates subsequently issue more adverse internal control opinions; these results are consistent with internal control deficiencies in the inspection reports motivating auditors to remediate their internal control audit procedures by increasing the thoroughness and rigour of their tests. Consistent with auditors undertaking costly remediation efforts to improve their internal control audits, DeFond and Lennox (2015) find that audit fees increase significantly following the inspectors' disclosure of higher internal control deficiency rates. However, the increase in audit fees is only statistically significant for annually inspected auditors. These findings suggest that PCAOB inspections successfully remediate deficiencies in auditors' internal control audits, leading to improved quality in the audits of internal controls.

3.2.4 PCAOB Sanctions

The PCAOB has the authority to investigate and discipline registered public accounting firms and associated persons. When violations are found, the PCAOB can impose sanctions which include suspension or revocation of a firm's registration, suspension or bar of an individual from associating with a registered public accounting firm, and civil monetary penalties. Dee et al. (2011) examine the stock market price reaction for 707 clients of Deloitte and 2,363 non-Deloitte Big 4 auditor clients to news of the PCAOB's sanctions imposed upon Deloitte and Touche, LLP on December 10, 2007 for actions related to its 2003 audit of Ligand Pharmaceuticals Inc. These sanctions represented the first time that the PCAOB used its enforcement powers against a Big 4 auditor, and the first time the PCAOB issued a monetary penalty against any individual or

registered accounting firm (Dee et al., 2011).[16] Using the standard market model, they find that Deloitte clients exhibit significantly more negative mean and median cumulative abnormal returns across all event windows, compared to non-Deloitte clients. Dee et al. (2011) also find that Deloitte clients had no reaction to four additional events related to the Ligand audit failure that occurred before the PCAOB's sanctions were announced. Dee et al. (2011) interpret the results as evidence that PCAOB sanctions revealed new information, not previously disclosed in other Ligand events, that impaired Deloitte's reputation or insurance value.

Boone et al. (2015) examine three consequences of the December 2007 PCAOB disciplinary order against Deloitte. They first examine Deloitte's switching risk in terms of the likelihood of losing existing clients to other Big 4 firms or attracting new clients over the 2005-2010 time period relative to that of the other Big 4 firms. Their results indicate that Deloitte's risk of losing (gaining) clients relative to that of other Big 4 auditors increased (decreased) from 2005-2007 to 2008-2010. Next, they examine Deloitte's change in audit fees over the 2005-2010 time period relative to that of other Big 4 firms, and find results consistent with Deloitte curtailing its previously above-average fee growth rate in 2008-2010 in an attempt to stem client losses to other Big 4 auditors following the PCAOB sanctions. Boone et al. (2015) also examine Deloitte's audit quality, as proxied by absolute abnormal accruals and the likelihood of financial misstatements as revealed by subsequent restatements, over 2005-2010 relative to the other Big 4 firms, and find that Deloitte's audit quality was no different from that of the other Big 4 firms during either the pre-censure (2005-2007) or the post-censure (2008-2010) time periods. The results suggest that PCAOB censure inflicts costs on the firm beyond the financial penalty

[16] Deloitte was censured and fined one million dollars, the firm agreed to create an internal "Leadership Oversight Committee" responsible for increased supervision of its partners and directors, and the engagement partner responsible for the Ligand audit was banned from association with a registered accounting firm (Dee et al., 2011).

imposed by the PCAOB; however there is no observable improvement in the firm's audit quality following the sanctions.

3.2.5 Capital Market Effects of the PCAOB Inspection Regime

A recent stream of research has begun to examine the capital market effects of the PCAOB inspection regime. Gipper et al. (2015) examine changes in reporting credibility after the introduction of the PCAOB inspection regime using changes in short-window stock market reaction to earnings announcements and find that the earnings response coefficients (ERCs) of companies whose auditors were subject to the new PCAOB inspection regime increase significantly compared to the ERCs of the control sample of U.S.-exchange-traded, non-U.S. companies. Consistent results are found using abnormal trading volume around issuers' 10-K filings as an alternative proxy for the credibility of companies' financial reporting. The results of the study provide large-sample evidence of the capital market benefits of the PCAOB inspection regime.

Shroff (2015) uses the PCAOB international inspection program setting to examine the effects of financial reporting quality and credibility on a company's financing and investment decisions. Shroff (2015) finds that PCAOB inspection of non-U.S. auditors increases the reporting quality of all clients audited by the non-U.S. auditor, even those companies not registered with the SEC and therefore not subject to any SEC/PCAOB regulation, suggesting the presence of spillover effects. Further, he finds that non-U.S. listed clients of PCAOB inspected auditors significantly increase their long-term debt and investment and become more responsive to their growth opportunities following public disclosure that their auditor was PCAOB inspected.

The results of Shroff (2015) suggest that regulatory oversight of the auditor helps improve reporting credibility, which then facilities corporate investment by increasing companies' external financing capacity.

3.2.6 PCAOB International Inspections

A recent stream of literature examines PCAOB international inspections. Carcello et al. (2011a) examine the U.S. stock market reaction of 324 cross-listed companies audited by non-inspected foreign audit firms to a series of disclosures made by the PCAOB between 2009 and 2011 relating to its difficulties in conducting foreign inspections in EU countries, Switzerland, China, and Hong Kong. Using the cumulative abnormal stock return, they find significant negative market reactions to the PCAOB's initial disclosure in August 2009, and subsequent disclosure in February 2010, of the names of foreign auditors that had not been inspected by the PCAOB, and a significant positive market reaction to the PCAOB's January 2011 disclosure that registered U.K. audit firms would now be subject to inspection. The results of the study suggest that market participants value PCAOB inspections.

Bishop et al. (2013) examine 175 first- and 56 second-time PCAOB inspection reports of international audit firms. Fifty-five percent of first-time reports have one or more audit deficiencies and 68 percent have quality control deficiencies identified. Firms with audit deficiencies are smaller, have fewer partners, staff, and total professionals, but have more issuer audit clients, than firms without deficiencies. These results are similar to those found for U.S. firms (Hermanson et al., 2007). Bishop et al. (2013) find no significant differences in the rate of audit or quality control deficiencies based on whether the PCAOB acts alone or cooperates with a

local regulator in conducting the inspections, or based on the home country's legal tradition. However, contrary to the U.S. results for second-time inspections, there is no difference in the rate of audit or quality control deficiencies for first- versus second-time inspections. This preliminary evidence on second-time international inspections may suggest that international audit firms do not experience the same apparent improvement in audit quality after the first PCAOB inspection that is found with U.S. firms, or that the PCAOB's second-time inspection strategy differs between U.S. and international firms. Similarly, Calderon and Song (2014) provide descriptive evidence from international PCAOB inspection reports that is generally consistent with prior examinations of U.S. auditors (Hermanson et al, 2007).

Three concurrent studies investigate the effect of PCAOB international inspections on proxies for audit quality (Fung et al., 2014; Krishnan et al., 2016; Lamoreaux, 2016). Fung et al. (2014) investigate whether PCAOB international inspections provide spillover audit quality benefits to foreign companies that are not U.S.-listed. Using a sample of companies from 56 countries with non-U.S. auditors during 2002-2011, Fung et al. (2014) find that audit quality, proxied by abnormal accruals, the likelihood of reporting a profit, and the likelihood of issuing a modified audit opinion, is higher for U.S.-listed companies with non-U.S. auditors after their auditor is inspected by the PCAOB. Extending their analysis to non-U.S.-listed companies who are clients of the PCAOB inspected non-U.S. audit firm, Fung et al. (2014) find that PCAOB registration and inspection of non-U.S. auditors is associated with higher audit quality for these non-U.S.-listed companies. The results of Fung et al. (2014) suggest that the audit quality benefits of PCAOB inspections accrue not only to the U.S.-listed clients of the inspected non-U.S. audit firms, but also to their non-U.S. listed clients.

Krishnan et al. (2016) examine whether audit quality of clients of inspected foreign auditors improves after initial PCAOB inspections. Using 178 first-time inspection reports, they find that abnormal accruals are lower and value relevance of accounting numbers is higher over the period 2000-2011 after initial PCAOB inspections. Krishnan et al. (2016) also examine whether clients of foreign audit firms in countries where PCAOB inspection access was not permitted are associated with lower audit quality compared to clients whose foreign auditors did undergo inspection, and find a significant PCAOB inspection effect on abnormal accruals and value relevance for clients of inspected foreign audit firms over the 2005-2011 time period.

Using a sample of foreign companies listed in the U.S. during the period 1999-2012, Lamoreaux (2016) finds that PCAOB inspection access is positively associated with an auditor's propensity to both issue a going concern opinion and report a material weakness in internal control over financial reporting, and negatively associated with earnings management. He finds no difference in going concern reporting and abnormal accruals between the inspected and uninspected auditors prior to the commencement of the PCAOB inspection program, which suggests that the differences in audit quality proxies are associated with PCAOB inspection access rather than underlying country- or company-level characteristics. Lamoreaux (2016) further examines the impact of local audit regulators on the relationship between PCAOB inspection access and audit quality, and finds that PCAOB inspection access is positively associated with audit quality in jurisdictions with and without a local regulator.

My study is similar to Krishnan et al. (2016) to the extent that both studies use abnormal accruals as a proxy for audit quality. My measure of abnormal accruals is different, however, as I use the linear expectation model adapted from DeFond and Park (2001), and Krishnan et al.

(2016) compute abnormal accruals using the modified Jones model.[17] My study is similar to Lamoreaux (2016) insofar as both studies use the propensity to issue a going concern opinion and abnormal accruals as proxies for audit quality and consider the effect of PCAOB inspections on ex ante auditor incentives. In addition to our common proxies, my proxies for audit quality also include total accruals and audit fees. Krishnan et al. (2016) test the effect of the first PCAOB inspection, which is similar to my analysis. I also test the effect of PCAOB inspection access, similar to Lamoreaux (2016), and the effect of the first PCAOB inspection in a country. Krishnan et al. (2016) use the PCAOB's published list of 437 non-U.S. companies whose financial statements were filed with the SEC in 2009 or 2010, but whose PCAOB-registered auditors the Board could not inspect because of asserted non-U.S. legal obstacles to examine whether clients of foreign audit firms in countries where PCAOB inspection access was not permitted are associated with lower audit quality over the period 2005-2011, compared to clients whose foreign auditors did undergo inspection. They use a control sample of 623 foreign and U.S. companies with headquarters in a foreign country, whose auditors are located in the jurisdictions where the PCAOB had conducted inspections as of December 31, 2009. This test is similar to my examination of the effect of PCAOB inspection access; however, it is over a shorter time period and their control sample assumes that audit firms have been inspected based on the inspection access status of their country.[18] My sample period is 2000-2012, and this time period includes a change in inspection status for six countries which signed cooperative agreements with the

[17] Francis and Wang (2008, p. 168) note that "a cross-sectional Jones 1991 model is not practical for the calculation of abnormal accruals with international data. The reason is that the number of industry observations per country can be quite small, and this may explain, at least in part, why Jones-type abnormal accruals perform unreliably in international settings (Wysocki, 2004; Meuwissen, Moers, Peek, and Vanstraelen, 2013)."

[18] However, not all audit firms are inspected at the same time. Therefore, audit firms in Krishnan et al. (2016)'s "inspected" control group might not have been inspected for all firm-years in the sample.

PCAOB in 2011 and 2012. Finally, and importantly, my study examines whether the audit quality effects resulting from PCAOB international inspections are evenly distributed across countries with varying levels of audit profession development (APD).

Aobdia and Shroff (2016) examine whether PCAOB international inspections of auditors increases the perceived assurance value of their audits and consequently their market share. Using data from 36 countries over the period 2003-2013, they find that PCAOB inspected non-U.S. auditors enjoy a 4 to 6% increase in their market share after PCAOB inspection reports are made public. In further analysis, they find that auditors with a large number of engagement level deficiencies or that receive a quality control criticism observe no increase in market share following disclosure of their PCAOB inspection report. Finally, Aobdia and Shroff (2016) find that the effect of PCAOB oversight on auditor market share changes is greater in corrupt countries and countries with weak rule of law.

3.3 Cross-country Institutional Differences and the Impact on Audit Quality

A stream of research documents cross-country differences in legal institutions and investor protection (La Porta et al., 1998, 2000, 2006), and their effects on accounting practices (Ali and Hwang, 2000; Hung, 2001; Ball et al., 2000; Ball et al., 2003; Leuz et al., 2003). Results of these studies suggest that these institutional differences influence financial reporting practice internationally.

3.3.1 Studies Investigating Cross-country Differences in Legal Institutions and Investor Protection and their Effects on Financial Reporting

Using 1986-95 data from manufacturing companies from 16 countries, Ali and Hwang (2000) examine relationships between the value relevance of financial accounting data and five country-specific factors. The results of their study suggest that countries with lower demand for information from published financial reports employ accounting practices that produce accounting data with low value relevance.

Using 17,743 company-year observations of industrial companies in 21 countries over the period 1991-97, Hung (2001) finds that the use of accrual accounting negatively affects the value relevance of financial statements in countries with weak shareholder protection. Further, strong shareholder protection attenuates the negative impact of accrual accounting and increases the value relevance of accrual accounting data.

Ball et al. (2000) investigate differences in the timeliness and conservatism of accounting income between common law and code law countries.[19] Using a sample of 40,359 company-year observations from seven countries over the period 1985-95, they find that accounting income in common law countries is significantly more timely, due to quicker incorporation of economic losses than gains.

Ball et al. (2003) examine Hong Kong, Malaysia, Singapore and Thailand, countries whose accounting standards derive from common law sources that are widely viewed as higher quality than code law based standards, but whose institutional structures give preparers incentives to

[19] Legal scholars classify legal traditions into two general families, common law and civil or code law (David and Brierly, 1985). The common law tradition is characterized by relatively less reliance on statutes and a preference for contracts and private litigation to resolve disputes; the code law tradition is characterized by greater reliance on explicit laws and procedural codes and a preference for state regulation over private regulation to resolve disputes (Francis and Wang, 2008).

issue low quality reports. Using a sample of 2,726 annual earnings announcements during 1984-96, they show that standards and incentives interact to produce generally low quality financial reporting. The results of this study are consistent with the hypothesis that reporting quality ultimately is determined by the underlying economic and political factors influencing managers' and auditors' incentives, not by accounting standards alone.

Leuz et al. (2003) develop four country-level measures of earnings management and provide comparative evidence on corporate earnings management across 31 countries, based on financial accounting data from 1990-99. Leuz et al. (2003) find that earnings management appears to be lower in economies with large stock markets, dispersed ownership, strong investor rights, and strong legal enforcement. Regressing their aggregate earnings management measure on outside investor rights and legal enforcement across countries, they find a negative relationship between earnings management and outsider rights and legal enforcement.

3.3.2 Studies Investigating Cross-country Differences in Auditor Incentives and Auditing Practice and the Effect on Audit Quality

A more recent stream of research examines cross-country differences in auditor incentives and auditing practice and their effect on audit quality. Francis and Wang (2008) examine whether earnings quality is jointly affected by a company's investor protection environment and their choice of a Big 4 versus non-Big 4 auditor. Using a sample of companies from 42 countries over the period 1994-2004, they find that earnings quality, measured as the magnitude of signed abnormal accruals, the likelihood of reporting a loss, and earnings conservatism, are higher as the country's investor protection regime becomes stronger, but only for companies with Big 4 auditors. Francis and Wang (2008) conclude that "the role of investor protection on earnings

quality around the world is mediated by the incentives of Big 4 auditors to enforce higher earnings quality as investor protection regimes become stricter."

Choi et al. (2008) develop a theory and provide empirical evidence on how a country's legal regime affects audit pricing and the Big 4 premium. Choi et al. model audit fees as a function of audit costs, which are a function of expected legal costs plus effort costs. The auditor chooses a level of audit effort to minimize expected total audit cost, and the optimal effort is increasing in the strictness of legal regime and legal liability payment. Using a sample of 21,559 company-year observations from 15 countries over the period 1996-2002, they find that (1) audit fees increase significantly as the legal regime becomes stronger; (2) given a legal liability regime, Big 4 auditors charge higher audit fees than non-Big 4 auditors; and (3) the Big 4 premium decreases as countries' legal liability regimes become stronger. Choi et al. (2008) conclude that a country's litigation environment is an important factor in determining auditor effort, audit fees, and the fee spread between Big 4 and non-Big 4 auditors. In his discussion of Choi et al. (2008), Magnan (2008) suggests that a country's professional institutions, for example, strength of the accounting profession, educational requirements, and professional labor markets, may explain the reported results.

Consistent with this line of analysis, Michas (2011) investigates country-level audit profession development (APD) and whether this development is associated with audit quality and auditor choice for a sample of 15 emerging market countries over the period 2001 to 2005. Michas measures APD for each country by aggregating 13 individual components representing four general aspects of the audit profession: 1) Auditor Education, 2) Auditing Standards, 3) Auditor Independence, and 4) Oversight of Auditors. After controlling for rule of law and investor protection, Michas finds that audit quality of clients of Big 4 auditors, measured as the

magnitude of total and abnormal accruals and the timeliness with which negative cash flows are reflected in accounting accruals compared to the timeliness with which positive cash flows are reflected in accounting accruals, is higher in countries with more developed audit professions. In addition, APD is associated with a higher likelihood a client company hires a Big 4 auditor.

While the evidence suggests that the PCAOB is making progress toward its goal of improving audit quality in the U.S., the literature examining PCAOB international inspections is at an early stage. Bishop et al. (2013) examine PCAOB inspection reports of international audit firms and find audit and quality control deficiency levels similar to those found for U.S. firms. Concurrent work suggests that PCAOB international inspections provide spillover audit quality benefits to foreign companies that are not U.S.-listed (Fung et al., 2014); finds that abnormal accruals are lower and value relevance of accounting numbers is higher over 2000-2011 after initial PCAOB inspections of foreign audit firms (Krishnan et al., 2016); and finds that PCAOB inspection access is positively associated with an auditor's propensity to both issue a going concern opinion and report a material weakness in internal control over financial reporting, and negatively associated with earnings management (Lamoreaux, 2016). These studies provide preliminary evidence that PCAOB international inspections are positively associated with audit quality.

The literatures that document cross-country differences in legal institutions and investor protection and their effects on accounting practices, and cross-country differences in auditor incentives and auditing practice, suggest that these institutional differences influence financial reporting practice and audit quality internationally. My study contributes to the literature on audit quality in several important ways. First, my cross-country setting allows me to examine the impact of a country's institutional environment on the effect of PCAOB inspections. Second, I extend the analysis of the impact of APD on company-level audit quality in developing countries

in Michas (2011) to an additional important setting. The results of this study will contribute to the auditing and regulation literature and will provide insight into the effectiveness of oversight mechanisms used to monitor the profession and how they may affect audit quality.

3.4 Hypothesis Development

DeFond (2010) argues that if PCAOB inspectors develop a reputation for being tough, they will likely provide audit firms with *ex-ante* incentives to increase audit quality. The PCAOB has the authority to investigate and discipline registered public accounting firms, and can impose costly sanctions when violations are found (PCAOB, 2011c). DeFond and Lennox (2011) argue that PCAOB inspections increase regulatory scrutiny, motivate stricter compliance with auditing standards, and subject auditors to higher likelihood of incurring penalties for misconduct. Thus, auditors have incentives to improve audit quality in anticipation of the inspections. In this way, PCAOB inspections provide similar incentives to the threat of litigation and loss of reputation, which also provide ex-ante incentives to improve audit quality (Palmrose, 1988; Weber et al., 2008; DeFond, 2010).

Once international firms are subject to PCAOB inspection, the firms will have ex-ante incentives to improve audit quality. Therefore, I make the following hypothesis:

Hypothesis 1: PCAOB inspection access is positively associated with audit quality.

Once PCAOB inspections are permitted in a country, auditors in that country likely have ex-ante incentives to increase audit quality (DeFond, 2010). On the other hand, there are several

reasons why PCAOB inspection access alone will not provide foreign audit firms with ex-ante incentives to increase audit quality. First, despite being subject to PCAOB rules and inspections, foreign auditors could believe that the PCAOB lacks the ability to enforce the regulations internationally.[20] Second, PCAOB Rules 4011 and 4012 provide a non-U.S. registered public accounting firm the opportunity to request that the Board rely, as appropriate, on inspections of the registered firm under the home country's oversight system (PCAOB, 2004b). The Board's reliance on the home country system is increasing in its independence and rigour. Possibly, then, audit firms perceive that the status quo in their country will continue despite PCAOB inspection access. Finally, given the delays experienced, the PCAOB is unlikely to conduct planned inspections on time: consequently, audit firms would assess the probability of inspection as low.[21] However, once PCAOB inspections commence in a country, the probability of a given audit firm being inspected increases. I expect that the commencement of PCAOB inspections increases audit quality relative to the pre-PCAOB inspection period. Thus, I make the following hypothesis:

Hypothesis 2: Audit quality increases in a country after the first PCAOB inspections are conducted as compared to the pre-PCAOB inspection period.

PCAOB inspections provide ex ante incentives to improve audit quality in anticipation of the inspections. In addition, inspections identify deficiencies in firms' audits and in their quality

[20] The PCAOB has settled disciplinary orders in only two countries, Australia and India, outside the United States (PCAOB 2013a).

[21] For example, on December 4, 2008, the Board adopted Rule 4003(f), an amendment to the inspection frequency requirements of Rule 4003 that gave the Board the ability to postpone, for up to one year, certain inspections of non-U.S. registered public accounting firms that the Board was otherwise required to conduct before the end of 2008 (PCAOB, 2008b). The Board also sought comment on a proposed second amendment to Rule 4003 that would give the Board the ability to postpone, for up to three years, certain inspections of non-U.S. registered public accounting firms that the Board was otherwise required to conduct before the end of 2009 (PCAOB, 2008b).

control procedures (PCAOB, 2011b; Church and Shefchik, 2012; Hermanson et al., 2007). Prior to the issuance of an inspection report, PCAOB inspections can result in firms performing additional procedures that should have been performed at the time of the audit; such procedures have led to the audited company restating its financial statements. Further, the quality control remediation portion of the inspection process allows inspected firms to identify and implement practices and procedures to improve future audit quality (PCAOB, 2011b). Audit firms with inspection deficiencies have an incentive to remedy the deficiency as inspection deficiencies are associated with auditor switches (Daugherty et al., 2011; Abbott et al., 2013). Quality control weaknesses are only publicly reported if they are not remedied within a 12 month period after the inspection report date, so there is incentive to remedy these deficiencies in a timely manner (PCAOB, 2004c). Finally, the selection of client files for PCAOB inspection is risk-based; thus, a client with a previously-identified audit deficiency has a higher probability of future inspection.

Carcello et al. (2011b) argue that audit quality will improve post-inspection as a result of three possible changes in firm performance arising from a PCAOB inspection. First, the PCAOB inspection process will identify deficiencies in how firms plan and perform audits, and firms will take actions (e.g., to modify their audit approach, staff training, or the nature and rigour of internal working paper review) to address the deficiencies. Second, firms will be less tolerant of auditee attempts to manage earnings. Third, firms will be incentivized to improve performance in anticipation of the next PCAOB inspection (Carcello et al., 2011b).

If the improvement in audit quality is a result of changed ex-ante incentives, all registered audit firms should experience this improvement once PCAOB inspections are permitted or commence in a country. If further improvement in audit quality is obtained in the course of the PCAOB inspection process and subsequent changes in audit firm performance arising from a

PCAOB inspection, the improvement in audit quality should be greater for the firms that have been inspected. I state my hypothesis in alternative form:

Hypothesis 3: Audit quality of companies audited by the inspected audit firms increases more than the audit quality of companies audited by audit firms that are domiciled in that country that are not inspected.

[Insert Figure 1]

Figure 1 provides a graphical representation of hypotheses one through three. A key role of auditing is to enforce the proper application of accounting policies (Watts and Zimmerman, 1986). Auditors' training and incentives are key to the delivery of high quality audits because the probability the auditor reports a contract breach, conditional on a breach occurring, depends on both the competence and independence of the auditor (Watts and Zimmerman, 1986). Donabedian (1993) argues that training, including educational and experience standards, and service quality standards, as specified in the codes of professional accounting societies and enforced by professional bodies (e.g., The American Institute of Certified Public Accountants (AIPCA) and state CPA societies) play a role in the production of trust in competence of accounting services.[22] Institutional factors, including securities market regulations and legal liability of auditors, affect the auditor's independence. Finally, some countries have established

[22] Trust in this context is simply another word for confidence, or the probability that the service has been performed ably and honestly (Donabedian, 1993).

their own audit oversight bodies to perform work similar to that of the PCAOB.[23] As measured by Michas (2011), country-level audit profession development (APD) captures four general aspects of the audit profession: 1) Auditor Education, 2) Auditing Standards, 3) Auditor Independence, and 4) Oversight of Auditors. In countries with a more highly developed audit profession, I expect that auditors demonstrate a higher level of competence as a result of rigorous professional training, and have strong incentives to implement a high level of audit quality. In such an environment, the requirement to submit to a PCAOB inspection is likely to have a lesser impact, as changes in firm performance resulting from a PCAOB inspection are less likely to occur.

In countries with lower levels of APD, the professional training required to practice as an auditor is less rigorous, securities market regulations have less influence on auditor independence, and there is less oversight of the audit profession.[24] As stated above, PCAOB inspections increase regulatory scrutiny, require stricter compliance with auditing standards, and subject auditors to higher penalties for misconduct (DeFond and Lennox, 2011). Once international firms are subject to PCAOB inspection, the firms in low APD countries will have stronger ex-ante incentives to improve audit quality in anticipation of the inspections, compared to firms in high APD countries. However, as detailed above, there are several reasons why PCAOB inspection access alone will not provide foreign audit firms with ex-ante incentives to increase audit quality (e.g., foreign auditors could believe that the PCAOB lacks the ability to enforce the regulations internationally; audit firms might perceive that the status quo in their country would

[23] For example, the UK Financial Reporting Council (FRC) monitors the quality of the audits of listed and other major public interest entities in the UK, is the independent disciplinary body for accountants and accountancy firms in the UK, and has responsibility for the independent oversight of the regulation of statutory auditors in the UK (FRC, 2012).

[24] Of the low APD countries, only Belgium, Israel, and Portugal have established an audit profession oversight body.

continue, despite PCAOB inspection access; and audit firms could assess the probability of inspection as low, given the delays experienced by the PCAOB). Once PCAOB inspections commence in a country, however, the probability of a given audit firm being inspected increases. I expect that the commencement of PCAOB inspections increases audit quality relative to the pre-PCAOB inspection period, and that this increase in audit quality is greater for the firms in low APD countries, compared to high APD countries. Finally, in countries with lower levels of APD, the requirement to submit to a PCAOB inspection is likely to have a greater impact, as changes in firm performance resulting from a PCAOB inspection are more likely to occur (e.g., the PCAOB inspection process will identify deficiencies in how firms plan and perform audits, and firms will take actions to address the deficiencies). Thus, I make the following hypotheses:

Hypothesis 4: The positive association between PCAOB inspection access and audit quality is stronger in countries with lower levels of APD compared to countries with higher levels of APD.

Hypothesis 5: The increase in audit quality in countries after the first PCAOB inspections are conducted relative to the pre-PCAOB inspection period is larger in countries with lower levels of APD compared to countries with higher levels of APD.

Hypothesis 6: The increase in audit quality of companies audited by the inspected audit firms relative to the increase in audit quality of companies audited by audit firms that are domiciled in that country but not inspected is larger in countries with lower levels of APD compared to countries with higher levels of APD.

Chapter 4

Research Design and Sample Selection

4.1 Research Design

4.1.1 Measurement of Country-Level Audit Profession Development (APD)

Data on APD is hand-collected from the International Federation of Accountants (IFAC) Member Body Compliance Program questionnaire responses (IFAC 2012c).[25] Part I of the Member Body Compliance Program consists of a fact-based questionnaire requiring members and associates to provide information about the regulatory and standard-setting framework in their country. Part II of the Program requires members to complete a self-assessment questionnaire about the incorporation of international standards and the establishment of quality assurance and investigation and discipline programs. I use data from the IFAC Member Body Compliance Program to identify 10 of my 11 total APD components. I measure the remaining component, the level of liability faced by auditors in a country, using a risk rating developed by an international insurance underwriter for one of the Big 6 audit firms (Wingate 1997, p. 139-140).

Consistent with Michas (2011), I compile individual components of APD for all countries in my sample by considering the following four general aspects of the audit profession: 1) Auditor Education, 2) Auditing Standards, 3) Auditor Independence, and 4) Oversight of Auditors. These

[25] Appendix B provides additional details on the IFAC Member Body Compliance Program.

four aspects are computed from the 11 individual components.[26] Details on these aspects and the specific components that comprise each aspect appear in Appendix B.

Consistent with Michas (2011), I compute ADP by the following steps: First, I classify each of the 11 components into one of the four aspects described above. Second, I take the average of the components within each of the four aspects separately. Doing so prevents the overweighting of one aspect over another when aspects comprise different numbers of components. I obtain a separate value for each of the four aspects of the audit profession in each country. Finally, I average the four aspects within each country which results in the final measure of ADP. This measure ranges from a theoretical minimum of 0.0 to a maximum 1.0 for each country.[27]

4.1.2 Measurement of Audit Quality

> Audit quality is much debated but little understood. Despite more than two decades of research, there remains little consensus about how to define, let alone measure, audit quality (Knechel et al., 2013).

[26] Michas (2011) used 13 individual components to compile a measure of ADP. Data for two of the components included in his measure, "are auditors in a country prohibited from both preparing and auditing a client's financial statements" and "does an organization within the country consistently issue audit implementation guidelines," are not available from IFAC, and are available from the World Bank's Reports on the Observance of Standards and Codes for only some of my sample countries. Thus, these two components are not included in my measure of ADP. Consequently, the aspect of Auditor Independence (Oversight of Auditors) is computed based on 4 (2) rather than 5 (3) individual components, as compared to Michas (2011).

[27] The information contained within the Part 1 Assessment of the Regulatory and Standard-Setting Framework Questionnaires and Part 2 SMO Self-Assessment Questionnaires are based on self-assessment by the IFAC member or associate to which the information relates. IFAC staff has reviewed the responses and, where necessary, validated them with external knowledgeable parties (IFAC, 2012c). The computed APD measure is based on the information provided by the IFAC members. However, I have no data on the strength of implementation of the aspects being reported. Therefore, the measure of APD may be an imperfect proxy for the actual, comparative states of audit profession development across countries.

Knechel et al. (2013) review the literature on audit quality, organizing their discussion around four aspects of the audit: inputs, process, outcomes, and context. Audit quality has been defined as "the market assessed joint probability that a given auditor will both discover a breach in a client's accounting system, and report the breach" (DeAngelo, 1981). Audit quality is thus broken down into two components: (1) the discovery of existing misstatements, which requires that appropriate resources be effectively utilized in the audit process (i.e., inputs and process); and (2) the reporting of any discovered misstatement, which requires the auditor to take appropriate action at the end of the audit (i.e., output and context) (Knechel et al., 2013). The auditing literature routinely uses discretionary accruals as a measure of audit quality (e.g., Reynolds and Francis, 2000; Krishnan, 2003; Francis and Yu, 2009). A major advantage of accruals-based measures of audit quality is that they are expected to detect within GAAP earnings manipulation (Aobdia, 2016b). High quality audits should constrain opportunistic earnings management; therefore, they should have a negative impact on discretionary accruals (DeFond and Zhang, 2014). Consistent with this argument, Lennox et al. (2016) find that audit adjustments are associated with higher accrual quality.

According to Knechel et al. (2013), the inputs to an audit are reflected in the individual characteristics of the audit team such as professional skepticism, knowledge and expertise. Audit quality is influenced by the characteristics inherent in the audit process such as risk assessment, analytical procedures, and working paper review. Audit outcomes may be observed in restatements, financial reporting quality, audit report accuracy and results of regulatory reviews. Finally, auditor incentives may be influenced by the context of the audit, including the existence of abnormal audit fees, auditor tenure, audit partner compensation, and audit fee premiums (Knechel et al., 2013).

Recently, the PCAOB issued a concept release seeking public comment on 28 quantitative audit quality indicators (AQIs), a portfolio of quantitative measures that may provide new insights about how to evaluate the quality of audits and how high quality audits are achieved (PCAOB, 2015). The 28 potential indicators fall into three groups: (1) audit professionals, including measures related to the availability, competence, and focus of those performing the audit; (2) audit process, including measures about an audit firm's tone at the top and leadership, incentives, independence, attention to infrastructure, and record of monitoring and remediation; and (3) audit results, including financial statements, internal control, going concern, communications between auditors and audit committees, and enforcement and litigation. The PCAOB's stated goal of the AQI project is "to improve the ability of persons to evaluate the quality of audits in which they are involved or on which they rely and to enhance discussions among interested parties; use of the indicators may also stimulate competition by audit firms based on quality" (PCAOB, 2015). The Board is currently deliberating and discussing next steps to move the project forward.

I hypothesize that PCAOB international inspections are associated with increased audit quality. I operationalize audit quality in terms of two outcomes: total and abnormal accruals (Carcello et al., 2011b; Gunny and Zhang, 2013; Francis and Wang, 2008; Michas, 2011) and going concern opinions (Gramling et al., 2011). Research has shown a negative relationship between the level of total discretionary accruals, or income-increasing accruals alone, and proxies for audit quality including Big N auditors, auditor specialization, auditor tenure, and audit office size (Knechel et al., 2013). The accuracy of audit reports is viewed as a signal of audit quality, and the presence of going concern opinions for financially distressed companies is used as a positive audit quality outcome measure (Knechel et al., 2013).

DeFond and Zhang (2014) define higher audit quality as greater assurance of high financial reporting quality. Motivated by the assumption that high quality auditing constrains managerial opportunism, auditing researchers use earnings quality measures that are designed to detect opportunistic earnings management. Theoretical motivation for these measures derives from the observation that the financial statements are a joint product of both management and the auditor (Magee and Tseng, 1990; Dye, 1991; Antle and Nalebuff, 1991). Financial reporting quality measures are expected to detect "within GAAP" earnings manipulation, for example to meet earnings targets. This within-GAAP manipulation is likely to represent the "qualitative aspects of management's accounting choices" that reflect "potential bias in management's judgments" that auditing standards *require auditors to evaluate* (PCAOB, 2010d). PCAOB inspections increase regulatory scrutiny, require stricter compliance with auditing standards, and subject auditors to higher penalties for misconduct (DeFond and Lennox, 2011). Thus, auditors have increased incentives to carefully evaluate these factors. The audit opinion is the auditor's responsibility and is directly under his/her influence and control. Going concern opinions communicate the auditor's evaluation of whether there is substantial doubt about the client's ability to continue as a going concern. Managers have incentives to exert pressure on auditors to issue clean opinions, even when a going concern opinion is warranted, because going concern opinions impose costs on the client (DeFond and Zhang, 2014). Auditor independence helps prevent the auditor from giving in to this pressure, which would reduce audit quality.

In the sensitivity analysis, I further operationalize audit quality in terms of audit fees, a proxy for audit inputs and process (Choi et al., 2008; Knechel et al., 2013).[28] A stream of research which examines the nature of the audit production process and the factors that influence it

[28] Audit fees are also a function of the competitiveness of the audit market (Knechel et al., 2013).

provides evidence that auditors adjust their production plan in response to increased risk factors (O'Keefe et al., 1994; Caramanis and Lennox, 2011; Hackenbrack and Knechel, 1997; Johnstone and Bedard, 2001). For example, the auditor may increase effort or utilize more experienced audit staff. Thus, auditors are expected to charge a higher audit fee to compensate for the increased effort costs of changes to the factors of audit production in response to PCAOB international inspections (Choi et al., 2008).

4.1.3 Sample Construction

My initial sample includes all company-years of foreign companies listed in the United States during the period 2000-2012. I identify companies as foreign if they are headquartered outside of the United States (Compustat LOC). I draw my initial sample data from the Compustat North America Fundamentals Annual database in July 2013. Any update to the Compustat database after July 2013 is not included. I obtain audit opinion data from Audit Analytics for 6,739 of these company-year observations. I obtain data on business and geographic segments from Compustat Segments, data on company age from CRSP, and data on audit fees from Audit Analytics. This yields a base sample of 6,265 company-year observations. I exclude company-year observations with missing values for the dependent and independent variables. I exclude observations from Greece, Hong Kong, and Ireland because of ambiguity about coding my key test variables in these countries.[29] As in prior research, financial institutions (Standard Industrial

[29] Certain registered audit firms in Greece and Ireland were inspected in 2008, prior to the current obstacles to inspection arising. For Greece, inspections of Deloitte Hadjipavlou Sofianos & Cambanis SA and Ernst & Young (Hellas) Cert. Auditors Accts. were conducted during the periods September 15 – 26, 2008 and September 8 - 18, 2008, respectively. For Ireland, inspections of KPMG and PricewaterhouseCoopers were conducted during the period November 10 – 20, 2008. Based on the coding scheme described below, I would code POST_INSPECTION equal to one beginning with the 2008 year-end reports, as this is the

Classification [SIC] 6000-6999) are also excluded (Francis and Wang, 2008; DeFond et al., 2002; Michas, 2011). The actual sample size varies depending on the dependent variable. My final samples consist of 2,975, 2,505, and 2,434 observations for the total accruals, abnormal accruals, and going concern tests, respectively. I winsorize observations that fall in the top and bottom 2.5 percent of continuous variables, for all samples.[30] Table 1 presents the sample selection procedures.

[Insert Table 1]

I obtain country-level data from the following sources: INVPRO is a dummy variable equal to one for a common-law country (Francis and Wang, 2008); RULE_OF_LAW is taken from Kaufmann et al. (2013); INV_PROT is the anti-director rights index taken from La Porta et al. (1998, p. 1127); data on each country's equity market development index (EQUITY) is collected from La Porta et al. (1997) and Leuz et al. (2003); DISCL, a country's disclosure level, is measured by the Center for International Financial Analysis and Research (CIFAR) index; data on BNSHARE, the Big N market share (as a group) relative to non-Big N accounting firms in a country, is collected from Francis et al. (2013). Data for gross domestic product (GDP), gross

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year of the earliest PCAOB inspection fieldwork in these countries. However, after the obstacles to inspection arose, PCAOB inspections were no longer permitted in these countries. Despite the fact that initial inspections were conducted in these countries, the fact that inspections were subsequently prohibited makes it difficult to predict the effect, if any, of the changing inspection status on auditor incentives. In the case of Hong Kong, the PCAOB is currently prevented from inspecting the U.S.-related audit work of PCAOB registered firms to the extent their audit clients have operations in mainland China. However, the PCAOB website does not provide information on the clients and/or their location for any audit firm. Thus, I am unable to accurately identify the Hong Kong audit firms as "PCAOB Inspection Access Permitted" or "PCAOB Inspection Access Not Permitted."

[30] The results are qualitatively the same if I winsorize observations that fall in the top and bottom 1 percent of continuous variables.

domestic product per capita (GDP_PER_CAP), GDP growth and foreign direct investment (FDI) are obtained from the World Bank's World Development Indicators.

I obtain all international inspection reports from the PCAOB website for the period August 29, 2005 to July 5, 2013. For each inspection report, I hand-collect the following data: auditor name, inspection report date, dates when fieldwork was conducted, whether there was an audit deficiency and, if so, the type of deficiency, and whether there was a quality control weakness. The inspection report describes the type of audit deficiency discovered during the inspection; however, the clients' names are not identified. PCAOB inspection reports are auditor-specific rather than client-specific; thus, there is a one-to-many relationship between an auditor's inspection report and the audit opinions issued by that auditor. I match each inspection report to the audit opinions issued by that auditor.

The full sample includes companies from all countries (FULL). I hand collect data from the PCAOB website on jurisdictions prohibiting PCAOB inspections as of December 31, 2012. I code ACCESS equal to one for all company-years that the PCAOB has access to inspect, zero otherwise. For audit firms which registered with the PCAOB by July 19, 2004, ACCESS equals zero for 2000-2003 (prior to registration with the PCAOB) and one beginning with 2004 year-end reports. If the country changed PCAOB inspection access status during the sample period, ACCESS equals one beginning with the year of the status change.[31] For client-year observations

[31]In the UK, PCAOB inspections were permitted until 2008 when the UK Professional Oversight Board (POB) barred PCAOB inspection access. In 2011, the POB signed a cooperative agreement with the PCAOB which permitted inspections to resume. For the UK, ACCESS equals one for 2004-2007 and 2011-2012. Additional cooperative agreements permitting inspections to be conducted were signed during my sample period as follows: Switzerland (April 6, 2011), Norway (September 14, 2011), the Netherlands (December 5, 2011), Germany (April 13, 2012), and Spain (July 18, 2012). For these countries, ACCESS equals one beginning with year-end reports from the year the cooperative agreement was signed.

of auditors resident in jurisdictions prohibiting PCAOB inspections as of December 31, 2012, I code ACCESS equal to zero for all years.

Excluding the client-year observations of auditors resident in jurisdictions prohibiting PCAOB inspections as of December 31, 2012, I then obtain a subsample of companies whose auditor is resident in a country where PCAOB inspections are permitted (PERMITTED COUNTRY). The FULL sample includes both jurisdictions with PCAOB inspection access as well as jurisdictions where PCAOB inspection access has never been permitted. This sample permits a test of whether PCAOB access and inspections are associated with an increase in audit quality, compared to jurisdictions where PCAOB access is prohibited. The PERMITTED COUNTRY sample is made up of companies whose auditor is resident in a country where PCAOB inspections are permitted; however, for some countries in this sample, the PCAOB was initially denied inspection access for some years during my sample period prior to access ultimately being granted. The advantage of the PERMITTED COUNTRY sample is that it focuses more cleanly on time series variation in those countries where inspections are ultimately permitted and carried out. Table 2 presents the sample breakdowns by auditor location and PCAOB inspection access status as of December 31, 2012.

[Insert Table 2]

4.1.4 Design of Empirical Tests

Accruals analysis

For the first tests of audit quality, I analyze the association between PCAOB inspection access and total and abnormal accruals, consistent with these measures as proxies for audit

quality in prior research (Frankel et al., 2002; Francis and Wang, 2008; Michas, 2011). Following Francis and Wang (2008), I calculate abnormal accruals using the linear expectation model adapted from DeFond and Park (2001) that uses a company's own prior year accruals in calculating the expectation benchmark.[32] Expected accruals are based on a company's prior year ratio of current accruals to sales, and the prior year's ratio of depreciation expense to gross property, plant, and equipment (PPE). This approach implicitly controls for cross-country differences in accounting standards by using a company as its own control to compute abnormal accruals (Francis and Wang, 2008).[33] I calculate total and predicted accruals as:

Predicted accruals = {[Sales in year t × (current accruals in year t – 1 / sales in year t – 1)] –
[gross PPE in year t × (depreciation in year t – 1 / gross PPE in year t – 1)]}
/ total assets in year t – 1.

Current accruals = change in non-cash working capital
= Δ [total current assets – cash and short term investments]
- Δ [total current liabilities – total amount of debt in current liabilities].

Operating cash flows[34] = earnings before extraordinary items + depreciation and amortization + change of deferred income tax + change in other liabilities + minority interest – current accruals (as defined above).

[32] I use this model because Francis and Wang (2008, p. 168) note that "a cross-sectional Jones 1991 model is not practical for the calculation of abnormal accruals with international data. The reason is that the number of industry observations per country can be quite small, and this may explain, at least in part, why Jones-type abnormal accruals perform unreliably in international settings (Wysocki, 2004; Meuwissen, Moers, Peek, and Vanstraelen, 2013)."

[33] The 2005 mandatory IFRS adoption in the EU would result in a discontinuity in accruals for EU companies. To address the potential impact of IFRS adoption in the EU, I repeat the tests, first excluding year 2005 observations, and then excluding EU countries. The empirical results are qualitatively the same for both alternate specifications.

[34] Per Ali and Hwang (2000), missing values on deferred income taxes, other liabilities, and minority interests are treated as zero.

Abnormal accruals are defined as the company's actual total accruals in year *t*, minus predicted total accruals for year *t* as defined above. Total accruals in year *t* are calculated as follows:

Total accruals = (Earnings before extraordinary items – Operating cash flows (as defined above)) / total assets in year *t* – 1.

To test hypotheses 1, 2, and 3, I estimate the model in (1) below using the FULL and PERMITTED COUNTRY samples:

$$TOT\_ACC_{it} \text{ or } AB\_ACC_{it} = \beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \beta_3 INSPECTED\_AUDITOR + \beta_4 LSALES_{it} + \beta_5 CFO_{it} + \beta_6 LEV_{it} + \beta_7 GROWTH_{it} + \beta_8 \Delta PPE_{it} + \beta_9 LAG\_LOSS_{it} + \beta_{10} INVPRO + \text{Industry Indicators} + \text{Year Indicators} + \varepsilon \quad (1)$$

Where:

AB_ACC = signed abnormal accruals scaled by lagged total assets for company *i* in year *t*.[35]

TOT_ACC = total accruals scaled by lagged total assets for company *i* in year *t*.

ACCESS = 1 for all company-years that the PCAOB has access to inspect, 0 otherwise. For audit firms which registered with the PCAOB by July 19, 2004, ACCESS equals one beginning with 2004 year-end reports. If the country changed PCAOB inspection access status during the sample period, ACCESS equals one beginning with the year of the status change.

POST_INSPECTION = 1 for all company-years after the first PCAOB inspections are conducted in a country, 0 otherwise. From the published PCAOB inspection reports, I collect the dates of the PCAOB inspection fieldwork for each audit firm in a country which has been inspected. I code POST_INSPECTION equal to one for all company-years beginning with the year of the earliest PCAOB inspection fieldwork in a country. Using Australia as an example, the PCAOB

[35] Consistent with Lamoreaux (2015), I use signed abnormal accruals as Lennox, Wu, and Zhang (2016) find that auditing affects signed accruals more than absolute accruals.

inspected Ernst & Young LLP in 2007, and Deloitte & Touche LLP, KPMG LLP, and PricewaterhouseCoopers LLP in 2008. For Australia, I code POST_INSPECTION equal to one beginning with 2007 year-end reports.

INSPECTED_AUDITOR = 1 for all company-years after the first PCAOB inspection of the company's auditor in a country, 0 otherwise. From the published PCAOB inspection reports, I collect the dates of the PCAOB inspection fieldwork for each audit firm in a country which has been inspected. I code INSPECTED_AUDITOR equal to one for all company-years of the inspected audit firm's clients, beginning with the year of the PCAOB inspection fieldwork.[36] Using Argentina as an example, the PCAOB inspected Pricewaterhouse & Co. SRL in 2006, Deloitte & Co. SRL and Pistrelli Henry Martin y Asociados SRL (an Ernst & Young affiliate) in 2007, and Sibille (a KPMG affiliate) in 2009. I code INSPECTED_AUDITOR equal to one beginning with: 2006 year-end reports for Pricewaterhouse & Co. SRL clients; 2007 year-end reports for Deloitte & Co. SRL and Pistrelli Henry Martin y Asociados SRL clients; and 2009 year-end reports for Sibille clients.[37]

Model (1) tests whether signed abnormal accruals and total accruals differ internationally as a function of PCAOB inspection access in a country, whether the first PCAOB inspections conducted in a country have an incremental effect on signed abnormal accruals and total accruals, and whether there is a further incremental effect on signed abnormal accruals and total accruals

[36] I use the date of the inspection fieldwork rather than the date of the published PCAOB inspection report as there is often considerable delay in publishing the inspection reports. For example, the inspection fieldwork of Pricewaterhouse & Co. SRL in Argentina was completed on December 8, 2006; however, the PCAOB inspection report was not published until November 21, 2008. While the formal PCAOB inspection report is issued after the fieldwork, the audit firm is informed of the findings while inspections are conducted (Roybark, 2009). Thus, audit firms are aware of the PCAOB's concerns and have the opportunity to make changes to the audit production process prior to receiving the draft inspection report.

[37] PCAOB inspectors review the working papers related to audits conducted in the prior year. Thus, the 2006 inspection of Pricewaterhouse & Co. SRL in Argentina examined audit work performed for the client's 2005 year-end audit. The 2006 year-end audits of these clients would be conducted subsequent to the PCAOB inspection fieldwork.

for audit firms that are actually inspected by the PCAOB, plus a set of controls for other factors that may affect accruals. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor.[38] Hypotheses 1, 2, and 3 predict negative coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively.

I include the following control variables suggested by the prior literature: (1) $LSALES_{it}$, the log of client sales for company *i* in year *t*. This is a proxy for company size. Prior studies document that large companies tend to have lower levels of accruals than smaller companies. (2) CFO_{it}, the operating cash flows for company *i* in year *t* scaled by lagged total assets. There is a documented inverse relation between the operating cash flows and accruals (Francis and Wang, 2008). (3) LEV_{it}, equal to total liabilities / total assets for company *i* in year *t*. This controls for the likelihood of bankruptcy, and a higher total debt to asset ratio indicates a higher possibility of debt covenant violation, which creates an incentive to increase reported earnings through accruals-based earnings management (Francis and Wang, 2008). (4) LAG_LOSS_{it}, a dummy variable equal to one if company *i* reports negative income before extraordinary items in year *t* – 1. This is another proxy for financial distress and bankruptcy risk. (5) $GROWTH_{it}$, the sales growth rate, defined as the sales in year *t* minus sales in *t* – 1 and scaled by sales in year *t* – 1. (6) ΔPPE_{it}, the growth rate of gross property, plant, and equipment (PPE), defined as PPE in year *t* minus PPE in *t* – 1 and scaled by PPE in *t* – 1. Company growth could affect yearly accruals if the relation between accruals and the accruals drivers (sales and gross PPE) is nonlinear. (7)

[38] While not directly testing a prediction of my hypotheses, summing the coefficients in this way allows me to capture the total effect of all three events that could be significant, even if the marginal effect of each incremental event is not significant.

INVPRO, a dummy variable equal to one for a common-law country. This is a proxy for the level of investor protection in a country (Francis and Wang, 2008).[39] Francis and Wang (2008) find that signed abnormal accruals are smaller as the investor protection environment becomes stronger, but only for companies with Big 4 auditors. Contrary to their predictions, Francis and Wang (2008) report a positive coefficient on LSALES, and negative coefficients on LEV and LAG_LOSS. For this reason, I do not make a directional prediction for INVPRO, LSALES, LEV, and LAG_LOSS.

To test hypotheses 4, 5, and 6, I estimate the model in (2) below using the FULL and PERMITTED COUNTRY samples:

$$\begin{aligned} TOT\_ACC_{it} \text{ or } AB\_ACC_{it} = {} & \beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \\ & \beta_3 INSPECTED\_AUDITOR + \beta_4 LOW\_APD + \\ & \beta_5 ACCESS*LOW\_APD + \beta_6 POST\_INSPECTION \\ & *LOW\_APD + \beta_7 INSPECTED\_AUDITOR*LOW\_APD + \\ & \beta_8 LSALES_{it} + \beta_9 CFO_{it} + \beta_{10} LEV_{it} + \beta_{11} GROWTH_{it} + \beta_{12} \Delta PPE_{it} + \\ & \beta_{13} LAG\_LOSS_{it} + \beta_{14} INVPRO + \text{Industry Indicators} + \text{Year} \\ & \text{Indicators} + \varepsilon \end{aligned} \quad (2)$$

Where:

LOW_APD = 1 if APD is below the country-level median APD of 0.706, 0 otherwise. APD is the average of four aspects of a country's audit profession development. Each aspect includes

[39] Francis and Wang (2008) use five proxies of investor protection: (1) LAW = 1 for a common-law country and 0 otherwise, (2) ANTI_DIR = antidirector rights' index (La Porta et al., 1998), (3) DIS_REQ = index of disclosure requirement (La Porta et al., 2006), (4) LIT_STD = index of liability standard (La Porta et al., 2006), and (5) PUB_ENF = index of public enforcement (La Porta et al., 2006) and find similar results with all five proxies.

individual components of Auditor Education, Audit Standards, Auditor Independence, and Auditor Oversight in a country. All other variables are as described previously.

I include the interaction of each of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD. The base group includes client-year observations of clients of audit firms domiciled in high APD countries that do not allow PCAOB inspection access. β_1 captures the effect of PCAOB inspection access in countries with high APD. β_2 captures the incremental effect of the first PCAOB inspections in countries with high APD. β_3 captures the incremental effect of PCAOB inspections for the firms that have been inspected in countries with high APD. β_4 includes client-year observations of clients of audit firms domiciled in low APD countries that do not allow PCAOB inspection access. β_5 captures the incremental effect of PCAOB inspection access in low versus high APD countries. Hypothesis 4 predicts β_5 to be negative. β_6 captures the incremental effect of the first PCAOB inspections in low versus high APD countries. Hypothesis 5 predicts β_6 to be negative. β_7 captures the incremental effect of PCAOB inspections for the firms that have been inspected in low versus high APD countries. Hypothesis 6 predicts β_7 to be negative. Finally, SUM_ACCESS_LOW_APD is equal to the combined coefficient of ACCESS + ACCESS*LOW_APD and captures the total effect of PCAOB inspection access in low APD countries. SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_APD + POST_INSPECTION*LOW_APD and captures the total effect of the first PCAOB inspections in low APD countries. SUM_INSPECTED_AUDITOR_LOW_APD is the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_APD + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR*LOW_APD and captures the total effect of PCAOB inspections for the firms that have been inspected in low APD countries.

Summing the coefficients in this way allows me to capture the total effect of all three events that could be significant, even if the marginal effect of each incremental event is not significant. However, the sums are not a direct test of my hypotheses.

Going concern analysis

Next, I analyze the association between PCAOB inspection access and the propensity to issue a going concern opinion. The issuance of an audit opinion is a measure of audit firm behaviour (DeFond and Francis, 2005; Gramling at el., 2011). A change in the propensity to issue a going concern opinion after PCAOB inspections are permitted provides evidence of the extent to which PCAOB international inspections result in changes to audit firm behaviour.

To test hypotheses 1, 2, and 3, I estimate the following logistic regression using the FULL and PERMITTED COUNTRY samples:

$$\begin{aligned} P(GOING\_CONCERN = 1) = F(&\beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \\ &\beta_3 INSPECTED\_AUDITOR + \beta_4 SIZE + \beta_5 lnAGE + \beta_6 RET + \beta_7 VAR \\ &+ \beta_8 ZMIJ + \beta_9 LEV + \beta_{10} CLEV + \beta_{11} LLOSS + \beta_{12} INVESTMENTS + \\ &\beta_{13} OCF + \beta_{14} BIGN + \beta_{15} RLAG + \beta_{16} PRIORGC + \beta_{17} HIGHLIT + \\ &\beta_{18} RULE\_OF\_LAW + \beta_{19} INV\_PROT + \beta_{20} lnGDP + \\ &\beta_{21} GDP\_PER\_CAP + \beta_{22} GDP\_GROWTH + Year\ Dummies) \end{aligned} \quad (3)$$

Where:

GOING_CONCERN = 1 if the client-year receives a going concern opinion, 0 otherwise.

ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR are as previously defined.

I estimate the above regression first for all sample companies and then restrict the sample to companies experiencing financial distress – defined as those with negative net income and/or negative cash flows from operations. The going concern problem is a more salient decision

among distressed companies (DeFond et al., 2002). Model (3) tests whether the propensity to issue a going concern opinion differs internationally as a function of PCAOB inspection access in a country, whether the first PCAOB inspections conducted in a country have an incremental effect on the propensity to issue a going concern opinion, and whether there is a further incremental effect on the propensity to issue a going concern opinion for audit firms that are actually inspected by the PCAOB, plus a set of controls for other factors that have been shown in prior studies to be associated with the propensity to issue a going concern opinion. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor. Hypotheses 1, 2, and 3 predict positive coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively.

Following DeFond et al. (2002), the independent variables in the going concern model are motivated by the "contrary" and "mitigating" factors identified in *Statement on Auditing Standard (SAS) No. 59: The Auditor's Consideration of an Entity's Ability to Continue as a Going Concern*" (AICPA 1988). According to *SAS No. 59*, contrary factors are those suggesting a going concern opinion is appropriate and mitigating factors are those mitigating the circumstances that suggest a going concern opinion. Contrary factors include the following: (1) *AGE*, the log of the number of years included in the CRSP database. Younger companies are more likely to fail (DeFond et al., 2002). (2) *RET*, the stock return over the fiscal year. This is a proxy for client financial performance. (3) *VAR*, the variance of the residual from the market model over the fiscal year. I predict that *RET* is negatively associated with *GOING_CONCERN* and *VAR* is positively associated with *GOING_CONCERN* (DeFond et al., 2002). (4) *ZMIJ*, a bankruptcy

measure based on the Zmijewski (1984) bankruptcy model, is another proxy for client financial performance.[40] Financial distress is an important contrary factor mentioned in *SAS No. 59.* (5) *LEV*, total liabilities over total assets at year-end. (6) *CLEV*, the change in *LEV* during the year. I include *LEV* to capture proximity to covenant violation as companies close to violation are likely to have high leverage (Beneish and Press, 1993), and *CLEV* as increases in leverage are likely to move companies closer to covenant violation (Reynolds and Francis, 2000). (7) *LLOSS*, an indicator variable equal to one when the company reports a loss for the prior year, zero otherwise. Companies with multiple-year losses are more likely to fail (DeFond et al., 2002). (8) *OCF*, operating cash flows divided by total assets at year-end. Poor operating cash flows are often associated with the probability of bankruptcy (DeFond et al., 2002). (9) *RLAG*, the audit report lag, defined as the number of days between fiscal year-end and audit opinion date. Reporting delays have been found to be positively associated with the going concern opinion. The following factors are likely to mitigate the probability of receiving a going concern opinion: (1) *SIZE*, the log of total client assets at the end of the year. This is a proxy for company size. Large companies have more negotiating power when faced with financial difficulty; thus, are more likely to avoid bankruptcy (Reynolds and Francis, 2000). (2) *INVESTMENTS*, the sum of short- and long-term investment securities (including cash and cash equivalents) scaled by total assets at year-end, is a liquidity measure that captures the ability to quickly raise cash. Companies with large cash and investment securities have more resources to stave off bankruptcy in the event of financial difficulty (DeFond et al., 2002). I also include the following variables: (1) *PRIORGC*, a dummy variable equal to one if the client had a going concern opinion in the prior year, zero otherwise. Prior studies document that the existence of a prior going concern opinion increases

[40] $ZMIJ = 4.803 + 3.599ROA + 5.406LEV - 0.1LIQ$, where *ROA* is return on assets, *LEV* is long-term debt/assets, and *LIQ* is current assets/current liabilities.

the likelihood of a going concern opinion in the following year. (2) *BIGN*, a dummy variable equal to one if the company's auditor is a Big N firm or international affiliate of a Big N firm, zero otherwise. Prior research argues that Big N auditors are more likely to issue going concern opinions than non Big N auditors are (Mutchler et al., 1997). (3) *HIGHLIT*, a dummy variable equal to one if the client operates in a high litigation industry, zero otherwise. This variable captures potential industry-related risk attached to the client. High litigation industries include the following Standard Industrial Classification (SIC) codes: 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7371-7379 (Rogers and Stocken, 2005).

To control for country-level influences on auditor reporting decisions, I include several country-level control variables. I control for rule of law (RULE_OF_LAW) and investor protection (INV_PROT), as prior research shows that these institutional characteristics affect audit quality (Choi and Wong, 2007; Francis and Wang, 2008).[41] RULE_OF_LAW is taken from Kaufmann et al. (2013), and measures "the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence." INV_PROT is the anti-director rights index taken from LaPorta et al. (1998, p. 1127), and measures "how strongly the legal system favors minority shareholders against managers or dominant shareholders in the corporate decision-making process, including the voting process." I also include the log of GDP in a year (lnGDP), GDP scaled by population in a year (GDP_PER_CAP), and growth in GDP over the prior year (GDP_GROWTH), to control for country size, wealth, and economic growth,

[41] No directional prediction is made for RULE_OF_LAW because of the competing arguments relating to the demand for assurance services (Francis et al., 2011). Francis and Wang (2008) find that signed abnormal accruals are smaller as the investor protection environment becomes stronger, but only for companies with Big 4 auditors. Thus, I do not make a directional prediction for this control variable.

respectively (Michas, 2011). Finally, I include year indicators to control for potential variations in the propensity to issue a going concern opinion over time.

To test hypotheses 4, 5, and 6, I estimate the model in (4) below using the FULL and PERMITTED COUNTRY samples, first for all sample companies and then restricted to companies experiencing financial distress:

$$\begin{aligned} P(GOING\_CONCERN = 1) = F(&\beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \\ &\beta_3 INSPECTED\_AUDITOR + \beta_4 LOW\_APD + \\ &\beta_5 ACCESS*LOW\_APD + \beta_6 POST\_INSPECTION*LOW\_APD + \\ &\beta_7 INSPECTED\_AUDITOR*LOW\_APD + \beta_8 SIZE + \beta_9 lnAGE + \\ &\beta_{10} RET + \beta_{11} VAR + \beta_{12} ZMIJ + \beta_{13} LEV + \beta_{14} CLEV + \beta_{15} LLOSS + \\ &\beta_{16} INVESTMENTS + \beta_{17} OCF + \beta_{18} BIGN + \beta_{19} RLAG + \\ &\beta_{20} PRIORGC + \beta_{21} HIGHLIT + \beta_{22} RULE\_OF\_LAW + \beta_{23} INV\_PROT \\ &+ \beta_{24} lnGDP + \beta_{25} GDP\_PER\_CAP + \beta_{26} GDP\_GROWTH + Year \\ &Dummies) \end{aligned} \quad (4)$$

All variables are as described previously.

I include the interaction of each of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD. The base group includes client-year observations of clients of audit firms domiciled in high APD countries that do not allow PCAOB inspection access. β_1 captures the effect of PCAOB inspection access on the propensity to issue a going concern opinion in countries with high APD. β_2 captures the incremental effect of the first PCAOB inspections in countries with high APD. β_3 captures the incremental effect of PCAOB inspections for the firms that have been inspected in countries with high APD. β_4 includes client-year observations of clients of audit firms domiciled in low APD countries that do not allow

PCAOB inspection access. β_5 captures the incremental effect of PCAOB inspection access on the propensity to issue a going concern opinion in low versus high APD countries. Hypothesis 4 predicts β_5 to be positive. β_6 captures the incremental effect of the first PCAOB inspections in low versus high APD countries. Hypothesis 5 predicts β_6 to be positive. β_7 captures the incremental effect of PCAOB inspections for the firms that have been inspected in low versus high APD countries. Hypothesis 6 predicts β_7 to be positive. Finally, SUM_ACCESS_LOW_APD is equal to the combined coefficient of ACCESS + ACCESS *LOW_APD and captures the total effect of PCAOB inspection access on the propensity to issue a going concern opinion in low APD countries. SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_APD + POST_INSPECTION*LOW_APD and captures the total effect of the first PCAOB inspections in low APD countries. SUM_INSPECTED_AUDITOR_LOW_APD is the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_APD + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR*LOW_APD and captures the total effect of PCAOB inspections for the firms that have been inspected in low APD countries.

Chapter 5

Results

5.1 Descriptive Statistics

Panels A and C of Table 3 report descriptive data for the total accruals and going concern sample variables, respectively, by PCAOB inspection access status. Panel A of Table 3 shows that mean total accruals (TOT_ACC) is -0.070 for the PERMITTED COUNTRY sample and -0.056 for the NOT PERMITTED sample. Mean abnormal accruals (AB_ACC) for the PERMITTED COUNTRY sample is -0.022 and -0.017 for the NOT PERMITTED sample. Companies in countries where inspection access is permitted have lower cash flows (CFO), sales growth (GROWTH) and property, plant, and equipment growth (ΔPPE), and higher leverage (LEV) and prior year losses (LAG_LOSS). Untabulated means for the FULL sample test and control variables are comparable to those reported in Francis and Wang (2008).[42]

[Insert Table 3]

Panel C of Table 3 shows that mean GOING_CONCERN is 0.024 for the PERMITTED COUNTRY sample and 0.027 for the NOT PERMITTED sample. Companies in countries where inspection access is permitted have lower total assets (ASSETS), the bankruptcy measure based

[42] Means for the FULL sample test and control variables and sample means reported in Francis and Wang (2008) Table 3, Panel A (in parentheses) are as follows: AB_ACC -0.023 (-0.011); LSALES 6.724 (5.357); CFO 0.101 (0.067); LEV 0.457 (0.541); GROWTH 0.195 (0.126); ΔPPE 0.179 (0.132); and LAG_LOSS 0.249 (0.256).

on the Zmijewski (1984) bankruptcy model (ZMIJ), leverage (LEV), use of a Big N audit firm or international affiliate (BIGN), audit report lag (RLAG) and fewer operations in a high litigation industry (HIGHLIT), and higher variance of the residual from the market model over the fiscal year (VAR), prior year losses (LLOSS), and short- and long-term investment securities (INVESTMENTS). I note, however, that the NOT PERMITTED sample has only 146 of 2,434 total observations for the going concern sample. Looking at distressed companies only, companies in countries where inspection access is permitted have lower total assets (ASSETS), the bankruptcy measure based on the Zmijewski (1984) bankruptcy model (ZMIJ), leverage (LEV), use of a Big N audit firm or international affiliate (BIGN), and audit report lag (RLAG). Again, I note that the NOT PERMITTED sample has only 39 of 788 total observations for the going concern distressed sample. Untabulated means for the FULL distressed sample test and control variables are, for the most part, comparable to those reported in DeFond et al. (2002).[43] However, the FULL distressed sample companies are larger, with mean total assets of $2.862 billion ($0.813 billion); and older, with mean AGE of 12.77 (7), than the sample companies in DeFond et al. (2002). While the means for RET and CLEV for the FULL distressed sample are higher than those reported in DeFond et al. (2002), 0.179 (-0.35) and 0.213 (-0.12), respectively, the range for these variables is similar for both samples.[44] While DeFond et al. (2002) report descriptive statistics for their sample of distressed companies only, Francis and Yu (2009) report descriptive statistics for a sample of distressed and non-distressed companies that are comparable

[43] Means for the FULL distressed sample test and control variables and sample means reported in DeFond et al. (2002) Table 1 (in parentheses) are as follows: GOING_CONCERN 0.066 (0.08); VAR 0.002 (0.01); LEV 0.411 (0.48); LLOSS 0.684 (0.68); INVESTMENTS 0.272 (0.31); OCF -0.087 (-0.14); and BIGN 0.843 (0.91).

[44] RET has a range of -0.843 (P2.5) to 3.843 (P97.5) in my sample and -0.99 (Min.) to 3.13 (Max.) for DeFond et al. (2002). CLEV has a range of -0.594 (P2.5) to 2.502 (P97.5) in my sample and -2.60 (Min.) to 2.19 (Max.) for DeFond et al. (2002).

to the FULL sample test and control variables.[45] For both the FULL and distressed sample, however, the mean report lag (RLAG) of 86.186 (FULL) and 89.69 (distressed) exceeds the mean report lag reported in Francis and Yu (2009) (48.14) and DeFond et al. (2002) (53.5). However, both of these samples consist of observations from the U.S., and the report lag for international companies is higher.[46]

Table 3 Panel B presents Pearson correlation coefficients and *p*-values among all the explanatory variables included in the total accruals analysis. The magnitudes of pair-wise correlations among the control variables are no greater than 0.45.

Table 3 Panel D presents Pearson correlation coefficients and *p*-values among all the explanatory variables included in the going concern analysis. The magnitudes of pair-wise correlations among company-specific control variables are no greater than 0.5, except for the correlations between SIZE and VAR (-0.54), SIZE and ZMIJ (0.57), and SIZE and INVESTMENTS (-0.51), and between ZMIJ and LEV (0.61) and ZMIJ and INVESTMENTS (-0.58).[47] The country-level control variable, RULE_OF_LAW, is highly correlated with INV_PROT and GDP_PER_CAP.[48] LOW_APD is highly correlated with the five country-level control variables.

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[45] Means for the FULL sample test and control variables and sample means reported in Francis and Yu (2009) Table 2 (in parentheses) are as follows: GOING_CONCERN 0.024 (0.026); SIZE 7.193 (6.037); LLOSS 0.294 (0.265); INVESTMENTS 0.196 (0.269); OCF 0.064 (0.064); and PRIORGC 0.025 (0.026).

[46] Leventis et al. (2005) report an audit report lag of 97.56 for companies listed on the Athens stock exchange; Ianniello (2012) reports an audit report lag of 97.85 for Italian listed companies; and Basioudis et al. (2008) report an audit report lag of 160 for their going-concern modified sample and 94.3 their non-going-concern modified sample for financially stressed companies in the United Kingdom.

[47] To address the potential multicollinearity problem caused by these correlations, I repeat the tests without SIZE, ZMIJ, and SIZE and ZMIJ, but the empirical results remain qualitatively the same.

[48] To address the potential multicollinearity problem caused by these correlations, I adjust RULE_OF_LAW for the correlations with other country-level variables as follows: I regress RULE_OF_LAW on all other country-level variables and then use the residuals obtained from this regression to repeat my tests (Choi et al., 2008). The empirical results remain qualitatively the same.

Table 3 Panel E presents a detailed coding of the APD variable, sorted by the four aspects, the average of each of the four aspects (except Standards, which contains only one item), and the overall sum for each country. I provide a country-level sum of the individual components for descriptive purposes in this table, whereas the measure of APD used in all analyses is computed as outlined in section 4.1.1 (i.e., ranging from 0.0 to 1.0). The mean value for APD is 6.95, and ranges from 0.74 in Peru to 9.86 in South Korea. A detailed analysis of the 11 components shows wide variation.

5.2 Accruals Analysis

Table 4 presents the regression estimates for the accruals analysis. In Panel A, column (1) reports the results of estimating equation (1), column (2) re-estimates equation (1) after replacing the country-level control variables with country fixed effects, and column (3) reports the results of estimating equation (2), with TOT_ACC as the dependent variable, and all for the FULL sample. Column (4) reports the results of estimating equation (1), column (5) re-estimates equation (1) after replacing the country-level control variables with country fixed effects, and column (3) reports the results of estimating equation (2), with AB_ACC as the dependent variable, and all for the FULL sample. I am unable to include country fixed effects in the models that include the APD variable as it does not vary over time within countries. All models are significant with adjusted R^2s ranging from 22.4 to 25.6 percent for the total accruals analysis and 7.4 to 8.3 percent for the abnormal accruals analysis. Significance levels of individual coefficients are reported as two-tailed *p*-values, and are robust to heteroscedasticity and country clustering effects using the method in Rogers (1993).

[Insert Table 4]

Table 4 Panel A presents the effect of PCAOB inspection access, the effect of the commencement of PCAOB inspections in a country, and the effect of being the inspected audit firm on total and abnormal accruals. Hypotheses 1, 2, and 3 predict negative coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively. For the TOT_ACC analysis, the POST_INSPECTION and INSPECTED_AUDITOR variables are insignificant at $p>0.10$ in columns (1) and (2). Thus, hypotheses 2 and 3 are not supported. The ACCESS variable is negative and significant at $p<0.01$ in column (1); however, ACCESS is insignificant at $p>0.10$ after replacing the country-level control variables with country fixed effects in column (2). A negative sign indicates that total accruals in a country are smaller (less income-increasing) after PCAOB inspection access as compared to the audit firms in countries without PCAOB inspection access. The result is economically significant. The coefficient on ACCESS in column (1) represents a 3.4% decrease in return on assets (ROA), which is a 49% decrease from the mean value of ROA in the total accruals PERMITTED sample. This provides some support for hypothesis 1. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and is significant at $p<0.01$ in column (1) and insignificant at $p>0.10$ in column (2). The combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor, and is negative and significant at $p<0.01$ in column (1) and insignificant at $p>0.10$ in column (2).

For the AB_ACC analysis, the ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR variables are insignificant at $p>0.10$ in columns (4) and (5). Thus,

hypotheses 1, 2 and 3 are not supported. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and is significant at $p<0.01$ in column (4) and insignificant at $p>0.10$ in column (5). The combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor, and is negative and significant at $p<0.05$ in column (4) and insignificant at $p>0.10$ in column (5).

The results of estimating equation (2) with total accruals (abnormal accruals) as the dependent variable for the FULL sample are reported in column (3) (column (6)) of Table 4 Panel A. In columns (3) and (6), the ACCESS variable by itself captures the effect of PCAOB inspection access, POST_INSPECTION captures the incremental effect of the first PCAOB inspections, and INSPECTED_AUDITOR captures the incremental effect of PCAOB inspections for the firms that have been inspected, all in countries with high APD. For the TOT_ACC analysis, the ACCESS and POST_INSPECTION variables are negative and significant at $p<0.05$ in column (3). The result is economically significant. The coefficient on ACCESS (POST_INSPECTION) in column (3) represents a 3.6% (1.5%) decrease in ROA, which is a 51% (21%) decrease from the mean value of ROA in the total accruals PERMITTED sample. The INSPECTED_AUDITOR variable is positive and significant at $p<0.05$ in column (3). For the AB_ACC analysis, the ACCESS and INSPECTED_AUDITOR variables are insignificant at $p>0.10$ in column (6). However, the POST_INSPECTION variable is negative and significant at $p<0.05$ in column (6). The result is economically significant. The coefficient on POST_INSPECTION in column (6) represents a 1.8% decrease in ROA, which is an 82% decrease from the mean value of ROA in the abnormal accruals PERMITTED sample. Thus, in countries with high APD, PCAOB inspection access in a country is associated with a decrease in

total accruals, the first PCAOB inspections conducted in a country are associated with an incremental decrease in total and abnormal accruals, and there is an incremental increase in total accruals for audit firms that are actually inspected by the PCAOB. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in countries with high APD, and is negative and significant at $p<0.01$ in column (3) and $p<0.05$ in column (6). The combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor in countries with high APD, and is negative and significant at $p<0.01$ in column (3) and $p<0.10$ in column (6). Thus, the total effect of the first PCAOB inspections and of being the inspected auditor in high APD countries is a significant decrease in total and abnormal accruals. The interaction of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD measures the incremental effect of these variables in low versus high APD countries. Hypotheses 4, 5, and 6 predict the interaction terms to be negative. For both TOT_ACC and AB_ACC, the interaction of ACCESS with LOW_APD is insignificant at $p>0.10$ in columns (3) and (6). Thus, hypothesis 4 is not supported. The interaction of POST_INSPECTION with LOW_APD is positive and significant at $p<0.10$ in columns (3) and (6), contrary to hypothesis 5. Finally, the interaction of INSPECTED_AUDITOR with LOW_APD is negative and significant at $p<0.10$ in columns (3) and (6). This provides support for hypothesis 6. The result is economically significant. The coefficient on INSPECTED_AUDITOR*LOW_APD in column (3) (column (6)) represents a 2.7% (1.2%) decrease in ROA for the total accruals (abnormal accruals) FULL sample, which is a 39% (55%) decrease from the PERMITTED sample mean value of ROA. Thus, in countries with low APD, there is an incremental increase in total and abnormal accruals after the first PCAOB inspections are conducted in a country. However, in countries with low APD, there is an

incremental decrease in total and abnormal accruals for audit firms that are actually inspected by the PCAOB. Finally, SUM_ACCESS_LOW_APD is equal to the combined coefficient of ACCESS + ACCESS*LOW_APD, SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD, and SUM_INSPECTED_AUDITOR_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR *LOW_ADP, and capture the total effect of PCAOB inspection access, the total effect of the first PCAOB inspections, and the total effect of PCAOB inspections for the firms that have been inspected, respectively, all in low APD countries. Summing the coefficients in this way allows me to capture the total effect of all three events that could be significant, even if the marginal effect of each incremental event is not significant. For the TOT_ACC analysis, the total effect of PCAOB inspection access and PCAOB inspections for the firms that have been inspected is negative and significant at $p<0.10$. For the AB_ACC analysis, the total effect of the first PCAOB inspections, and the total effect of PCAOB inspections for the firms that have been inspected is negative and significant at $p<0.10$. The remaining combined coefficients in columns (3) and (6) of Panel A are insignificant at $p>0.10$.

I conclude that, in countries with high APD, PCAOB inspection access in a country is associated with a decrease in total accruals, and the first PCAOB inspections conducted in a country are associated with an incremental decrease in total and abnormal accruals. While the incremental effect on total accruals of being the inspected auditor is positive in high APD countries, the total effect of being the inspected auditor is negative and significant in both high and low APD countries. In countries with low APD, total and abnormal accruals are

incrementally smaller (less income-increasing) for the firms that have been inspected relative to the firms that are not inspected. Overall, abnormal accruals are lower after the first PCAOB inspections are conducted in a country and for the firms that have been inspected, in countries with both low and high APD.

The coefficients on the company-specific control variables are highly significant, with the exception of GROWTH in the total accruals analysis. The signs and magnitudes of the coefficients on the company-specific control variables in the abnormal accruals analysis are generally consistent with the results reported in Francis and Wang (2008), with the exception of LAG_LOSS which is positive rather than negative as in Francis and Wang (2008). The country-level control variable, INVPRO, is positive and significant in the total accruals analysis (p<0.01) and in model (4) of the abnormal accruals analysis; however, it is insignificant in model (6) of the abnormal accruals analysis.

Table 4 Panel B presents the effect of PCAOB inspection access, the effect of the commencement of PCAOB inspections in a country, and the effect of being the inspected audit firm on total and abnormal accruals for the PERMITTED COUNTRY sample. The PERMITTED COUNTRY sample is made up of companies whose auditor is resident in a country where PCAOB inspections are permitted; however, for some countries in this sample, the PCAOB was initially denied inspection access for some years during my sample period prior to access ultimately being granted. The advantage of using this sample is that it focuses more cleanly on time series variation in those countries where inspections are ultimately permitted and carried out. In Panel B, column (1) reports the results of estimating equation (1), column (2) re-estimates equation (1) after replacing the country-level control variables with country fixed effects, and column (3) reports the results of estimating equation (2), with TOT_ACC as the

dependent variable, and all for the PERMITTED COUNTRY sample. Column (4) reports the results of estimating equation (1), column (5) re-estimates equation (1) after replacing the country-level control variables with country fixed effects, and column (6) reports the results of estimating equation (2), with AB_ACC as the dependent variable, and all for the PERMITTED COUNTRY sample. As in Panel A, I am unable to include country fixed effects in the models that include the APD variable as it does not vary over time within countries. All models are significant with adjusted R^2s ranging from 21.7 to 24.8 percent for the total accruals analysis and 7.5 to 8.3 percent for the abnormal accruals analysis. Significance levels of individual coefficients are reported as two-tailed *p*-values, and are robust to heteroscedasticity and country clustering effects using the method in Rogers (1993).

Hypotheses 1, 2, and 3 predict negative coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively. For the TOT_ACC analysis, the ACCESS variable is negative and significant at $p<0.05$ in column (1) and insignificant at $p>0.10$ in column (2). A negative sign indicates that total accruals in a country are smaller (less income-increasing) after PCAOB inspection access as compared to the pre-PCAOB inspection access period. This provides some support for hypothesis 1, and is consistent with the results for the FULL sample in Panel A. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and is significant at $p<0.05$ in column (1) and insignificant at $p>0.10$ in column (2). The combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor, and is insignificant at $p>0.10$ in columns (1) and (2). For the AB_ACC analysis, none of the variables or combined coefficients are significant in columns (4) and (5).

The results of estimating equation (2) with total accruals (abnormal accruals) as the dependent variable for the PERMITTED COUNTRY sample are reported in column (3) (column (6)) of Table 4 Panel B. In columns (3) and (6), the ACCESS variable by itself captures the effect of PCAOB inspection access, POST_INSPECTION captures the incremental effect of the first PCAOB inspections, and INSPECTED_AUDITOR captures the incremental effect of PCAOB inspections for the firms that have been inspected, all in countries with high APD. For the TOT_ACC analysis, the ACCESS variable is negative and significant at $p<0.05$, and the INSPECTED_AUDITOR variable is positive and significant at $p<0.05$ in column (3). For the AB_ACC analysis, the POST_INSPECTION variable is significant at $p<0.10$ in column (6). Thus, in countries with high APD, PCAOB inspection access in a country is associated with a decrease in total accruals, the first PCAOB inspections conducted in a country are associated with an incremental decrease in abnormal accruals, and there is an incremental increase in total accruals for audit firms that are actually inspected by the PCAOB. The interaction of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD measures the incremental effect of these variables in low versus high APD countries. Hypotheses 4, 5, and 6 predict the interaction terms to be negative. For TOT_ACC, the interactions of ACCESS and POST_INSPECTION with LOW_APD are insignificant at $p>0.10$. Thus, hypotheses 4 and 5 are not supported. The interaction of INSPECTED_AUDITOR with LOW_APD is negative and significant at $p<0.01$. Thus, in countries with low APD, there is an incremental effect on total accruals for audit firms that are actually inspected by the PCAOB. This provides support for hypothesis 6. For AB_ACC, the interactions of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD are all insignificant at $p>0.10$. Thus, hypotheses 4, 5, and 6 are not supported. Finally, SUM_ACCESS_LOW_APD is equal to the combined

coefficient of ACCESS + ACCESS*LOW_APD, SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD, and SUM_INSPECTED_AUDITOR_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR *LOW_ADP, and capture the total effect of PCAOB inspection access, the total effect of the first PCAOB inspections, and the total effect of PCAOB inspections for the firms that have been inspected, all in low APD countries. For both the TOT_ACC and AB_ACC analysis, all of the combined coefficients in columns (3) and (6) are insignificant at $p>0.10$.

Consistent with the results in Panel A, the results in Panel B show that in countries with high APD, PCAOB inspection access in a country is associated with a decrease in total accruals. In Panel B, however, the first PCAOB inspections conducted in a country do not have an incremental effect on total accruals. Consistent with Panel A, there is a positive incremental effect on total accruals for audit firms that are actually inspected by the PCAOB in countries with high APD. However, the decrease in total accruals (and increase in audit quality) is larger in countries with a low level of APD compared to countries with a high level of APD, consistent with my prediction. Consistent with Panel A, the first PCAOB inspections conducted in countries with high APD are associated with an incremental decrease in abnormal accruals. Contrary to my prediction, however, there is no difference in the effect of PCAOB inspection access, the commencement of inspections in a country, or being the inspected audit firm, on abnormal accruals between low versus high APD countries for the PERMITTED COUNTRY sample.

The signs and magnitudes of the coefficients on the company-specific control variables in the total and abnormal accruals analysis in Panel B are consistent with Panel A. The country-level control variable, INVPRO, is positive and significant in both the total and abnormal accruals analysis (p<0.05).

5.3 Going Concern Analysis

Table 5 presents the regression estimates for the going concern analysis. The regression analysis is conducted on two samples: all companies and distressed companies only. I separately analyze the distressed companies as the going concern problem is a more salient decision among these companies (DeFond et al., 2002). Two regression models are reported for each sample. In Panel A, column (1) (column (2)) reports the results of estimating equation (3) for the all companies (distressed companies) sample , and column (3) (column (4)) reports the results of estimating equation (4) for the all companies (distressed companies) sample, all for the FULL sample. I am unable to include industry and country fixed effects in the models due to collinearity with the binary dependant variable. All models are significant with pseudo R^2s ranging from 46.1 to 47.2 percent for the all companies sample and 38.3 to 39.3 percent for the distressed companies sample. Significance levels of individual coefficients are reported as two-tailed *p*-values, and are robust to heteroscedasticity and country clustering effects using the method in Rogers (1993).

[Insert Table 5]

Table 5 Panel A presents the effect of PCAOB inspection access, the effect of the commencement of PCAOB inspections in a country, and the effect of being the inspected audit firm on the propensity to issue a going concern opinion. Hypotheses 1, 2, and 3 predict positive coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively. For both the all companies and distressed companies samples, the ACCESS variable is insignificant at $p>0.10$ in columns (1) and (2). Thus, hypothesis 1 is not supported. Contrary to hypotheses 2 and 3, the POST_INSPECTION and INSPECTED_AUDITOR variables are negative and significant at $p<0.01$ and $p<0.05$, respectively, for the distressed companies sample in column (2). A negative sign indicates that the propensity to issue a going concern opinion is incrementally lower after the commencement of PCAOB inspections in a country and after being the inspected audit firm, as compared to after PCAOB inspection access was granted. The result is economically significant. The coefficient on POST_INSPECTION (INSPECTED_AUDITOR) in column (2) represents an 80.2% (63.1%) decrease in the odds of receiving a going concern opinion after the commencement of PCAOB inspections in a country (after being the inspected audit firm), as compared to after PCAOB inspection access was granted (after the commencement of PCAOB inspections in a country). The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and is insignificant at $p>0.10$ for both the all companies and distressed companies samples. The combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor, and is also insignificant at $p>0.10$ for both the all companies and distressed companies samples. Thus, overall, neither PCAOB inspection access, the commencement of PCAOB inspections in a

country, nor being the inspected audit firm has a significant effect on the propensity to issue a going concern opinion.

In columns (3) and (4), the ACCESS variable by itself captures the effect of PCAOB inspection access, POST_INSPECTION captures the incremental effect of the first PCAOB inspections, and INSPECTED_AUDITOR captures the incremental effect of PCAOB inspections for the firms that have been inspected, all in countries with high APD. ACCESS and POST_INSPECTION are insignificant at $p>0.10$ for both the all companies and distressed companies samples. Thus, hypotheses 1 and 2 are not supported. Contrary to hypothesis 3, the INSPECTED_AUDITOR variable is negative and significant at $p<0.05$ for the distressed companies sample in column (4). However, the combined coefficients of ACCESS + POST_INSPECTION and ACCESS + POST_INSPECTION + INSPECTED_AUDITOR are insignificant at $p>0.10$ for both the all companies and distressed companies samples. Thus, overall, neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has a significant effect on the propensity to issue a going concern opinion in countries with high APD.

The interaction of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD measures the incremental effect of these variables in low versus high APD countries. Hypotheses 4, 5, and 6 predict the interaction terms to be positive. The interaction of ACCESS with LOW_APD is insignificant at $p>0.10$ for the all companies sample in column (3), but is positive and significant at $p=0.000$ for the sample of distressed companies in column (4). This provides some support for hypothesis 4. The interaction of POST_INSPECTION with LOW_APD is insignificant at $p>0.10$ for both the all companies and distressed companies samples. Thus, hypothesis 5 is not supported. Contrary to hypothesis 6, the interaction of

INSPECTED_AUDITOR with LOW_APD is negative and significant at $p<0.05$ for both the all companies and distressed companies samples. Thus, in countries with low APD, there is an incremental decrease in the propensity to issue a going concern opinion for audit firms that are actually inspected by the PCAOB. Finally, SUM_ACCESS_LOW_APD is equal to the combined coefficient of ACCESS + ACCESS*LOW_APD, SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD, and SUM_INSPECTED_AUDITOR_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR *LOW_ADP, and capture the total effect of PCAOB inspection access, the total effect of the first PCAOB inspections, and the total effect of PCAOB inspections for the firms that have been inspected, respectively, all in low APD countries. The total effect of the first PCAOB inspections is positive and significant at $p<0.10$ for the all companies sample in column (3), and all of the combined coefficients are positive and significant at $p=0.000$ for the sample of distressed companies in column (4). However, the magnitude of the combined coefficients in column (4) is very large. This is likely due to the uneven distribution of the going concern opinions over high and low APD and ACCESS and NO ACCESS countries.[49] Thus, the propensity to issue a going concern opinion is higher after PCAOB inspection access, the commencement of PCAOB inspections in a country, and being the inspected audit firm, as compared to the pre-PCAOB inspection access period, for distressed companies in countries with low APD. However, due to the uneven distribution of the

[49] Of the 58 going concern opinions in the FULL sample, the cells of a 2 x 2 matrix are populated as follows: ACCESS – high APD, 43 observations; ACCESS – low APD, 11 observations; NO ACCESS – high APD, 4 observations; and NO ACCESS – low APD, 0 observations.

going concern opinions over high and low APD and ACCESS and NO ACCESS countries, caution should be exercised in interpreting the results, especially in column (4). Due to the unusually large coefficients in column (4), I do not provide a discussion of the economic magnitude of these results.

The coefficients on the company-specific control variables are, for the most part, significant, with the exception of RET and OCF in all columns and samples; SIZE in the all companies sample; LLOSS, RLAG, and HIGHLIT in the distressed companies sample; VAR in the all companies sample and in column (4) for the distressed companies sample; and BIGN in columns (1) and (2) for both the all companies and distressed companies samples. The signs and magnitudes of the coefficients on the company-specific control variables are consistent with the results reported in DeFond et al. (2002), with the following exceptions. The coefficient on lnAGE ranges from -0.845 to -0.692, depending on the model and sample, which is lower than the range of 0.042 to 0.075 reported by DeFond et al. (2002) for this variable.[50] RET ranges from -0.185 to -0.096, depending on the model and sample, and is not significant in any of the models. DeFond et al. (2002) report a range of -1.215 to -1.188 for this variable, significant at $p<0.01$. VAR ranges from -110.004 to -88.862, depending on the model and sample, and is only significant in column (2) for the all companies sample. DeFond et al. (2002) report a range of 82.596 to 84.466 for this variable, significant at $p=0.02$. Contrary to my prediction, ZMIJ is negative and significant. DeFond et al. (2002) report a positive and significant coefficient on their variable, PROBANKZ, the probability of bankruptcy score. LEV ranges from 1.904 to 2.540, depending on the model and sample, which is higher than the range of -0.257 to -0.194

[50] Note that this variable is insignificant in all models in Table 3 of DeFond et al. (2002).

reported by DeFond et al. (2002) for this variable.[51] BIGN ranges from -0.664 to -0.376, and contrary to my prediction, is negative and significant in columns (3) and (4). DeFond et al. (2002) report a range of 0.932 to 0.981 for this variable, significant at $p<0.03$. The country-level control variable, lnGDP, is negative and significant in all models and samples ($p<0.05$). The other country-level control variables are, for the most part, insignificant at $p>0.10$.

Table 5 Panel B presents the effect of PCAOB inspection access, the effect of the commencement of PCAOB inspections in a country, and the effect of being the inspected audit firm on the propensity to issue a going concern opinion for the PERMITTED COUNTRY sample. In Panel B, column (1) (column (2)) reports the results of estimating equation (3) for the all companies (distressed companies) sample, and column (3) (column (4)) reports the results of estimating equation (4) for the all companies (distressed companies) sample, all for the PERMITTED COUNTRY sample. As in Panel A, I am unable to include industry and country fixed effects in the models due to collinearity with the binary dependant variable. All models are significant with pseudo R^2s ranging from 45.9 to 47.2 percent for the all companies sample and 39.2 to 40.6 percent for the distressed companies sample. Significance levels of individual coefficients are reported as two-tailed *p*-values, and are robust to heteroscedasticity and country clustering effects using the method in Rogers (1993).

Hypotheses 1, 2, and 3 predict positive coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively. For both the all companies and distressed companies samples, the column (1) and (2) results are consistent with the results reported for Panel A. Contrary to hypotheses 2 and 3, the POST_INSPECTION and INSPECTED_AUDITOR variables are negative and significant at $p<0.05$ and $p<0.01$, respectively, for the distressed

[51] Note that this variable is insignificant in all models in Table 3 of DeFond et al. (2002).

companies sample in column (2). A negative sign indicates that the propensity to issue a going concern opinion is incrementally lower after the commencement of PCAOB inspections in a country and after being the inspected audit firm, as compared to after PCAOB inspection access was granted. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and is insignificant at $p>0.10$ for both the all companies and distressed companies samples. The combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor, and is also insignificant at $p>0.10$ for both the all companies and distressed companies samples. Thus, overall, neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has a significant effect on the propensity to issue a going concern opinion.

In columns (3) and (4), the ACCESS variable by itself captures the effect of PCAOB inspection access, POST_INSPECTION captures the incremental effect of the first PCAOB inspections, and INSPECTED_AUDITOR captures the incremental effect of PCAOB inspections for the firms that have been inspected, all in countries with high APD. For both the all companies and distressed companies samples, the column (3) and (4) results are consistent with the results reported for Panel A, with two exceptions. In both samples, ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR are insignificant at $p>0.10$ and the combined coefficients of ACCESS + POST_INSPECTION and ACCESS + POST_INSPECTION + INSPECTED_AUDITOR are insignificant at $p>0.10$. Thus, overall, neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has a significant effect on the propensity to issue a going concern opinion in countries with high APD.

The interaction of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD measures the incremental effect of these variables in low versus high APD countries. Hypotheses 4, 5, and 6 predict the interaction terms to be positive. Consistent with Panel A, the interaction of ACCESS with LOW_APD is insignificant at $p>0.10$ for the all companies sample in column (3), but is positive and significant at $p=0.000$ for the sample of distressed companies in column (4). This provides some support for hypothesis 4. The interaction of POST_INSPECTION with LOW_APD is insignificant at $p>0.10$ for both the all companies and distressed companies samples. Thus, hypothesis 5 is not supported. Contrary to hypothesis 6, the interaction of INSPECTED_AUDITOR with LOW_APD is negative and significant at $p<0.05$ for both the all companies and distressed companies samples. Thus, in countries with low APD, there is an incremental decrease in the propensity to issue a going concern opinion for audit firms that are actually inspected by the PCAOB. Finally, SUM_ACCESS_LOW_APD is equal to the combined coefficients of ACCESS + ACCESS*LOW_APD, SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD, and SUM_INSPECTED_AUDITOR_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR*LOW_ADP, and capture the total effect of PCAOB inspection access, the total effect of the first PCAOB inspections, and the total effect of PCAOB inspections for the firms that have been inspected, all in low APD countries. All of the combined coefficients are positive and significant at $p=0.000$ for the sample of distressed companies in column (4). Thus, the propensity to issue a going concern opinion is higher after PCAOB inspection access, the commencement of PCAOB inspections in a country,

and being the inspected audit firm, as compared to the pre-PCAOB inspection access period, for distressed companies in countries with low APD. However, as in Panel A, caution should be exercised in interpreting the results, especially in column (4), due to the uneven distribution of the going concern opinions over high and low APD and ACCESS and NO ACCESS countries.

The signs, significance, and magnitudes of the coefficients on the company-specific control variables in the going concern analysis in Panel B are consistent with Panel A, with the following exceptions. VAR is negative and significant in column (1) for the all companies sample and in columns (2) and (4) in the distressed companies sample in Panel B. LLOSS is no longer significant in column (3) for the all companies sample in Panel B. HIGHLIT is negative and significant at p=0.079 in column (1) for the all companies sample in Panel A, but this coefficient is not significant in Panel B. The country-level control variable, lnGDP, is negative and significant in all columns (p<0.06), RULE_OF_LAW is negative and significant in all columns except for column (1) for the all companies sample, GDP_PER_CAP is significant at p<0.078 for the all companies sample, and GDP_GROWTH is negative and significant at p<0.084 for the distressed companies sample in Panel B.

In sum, the evidence in Table 5 indicates that neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has a significant effect on the propensity to issue a going concern opinion in countries with high APD. For distressed companies in countries with low APD, the propensity to issue a going concern opinion is significantly higher after PCAOB inspection access is granted. Contrary to my prediction, the propensity to issue a going concern opinion is incrementally lower for the firms that have been inspected relative to the firms that are not inspected, in low APD countries. However, overall, the propensity to issue a going concern opinion is higher after PCAOB

inspection access, the commencement of PCAOB inspections in a country, and being the inspected audit firm, as compared to the pre-PCAOB inspection access period, for distressed companies in countries with low APD.

A possible explanation for these conflicting results is found in DeFond and Zhang (2014) and Aobdia (2016b). DeFond and Zhang (2014) review the evidence from going concern audit opinions. Consistent with regulators' concerns that auditors give in to management pressure to issue overly optimistic opinions, the literature finds that auditors routinely make Type II errors (i.e., issuance of a clean opinion in the year prior to bankruptcy) about 50% of the time (Hopwood et al., 1989; Raghunandan and Rama, 1995). The literature also finds that auditors respond to this litigation risk by issuing going concern opinions too quickly, with auditors making Type I errors (i.e., issuance of a going concern opinion in the absence of bankruptcy within the subsequent year) around 90% of the time (Geiger et al, 2005). While the evidence from going concern opinion studies is largely consistent with litigation risk increasing audit quality, much of this research is open to alterative explanations (DeFond and Zhang, 2014). Going concern studies may be capturing the auditors' response to litigation risk with excessive auditor conservatism, which reduces audit quality (Thoman, 1996; Kaplan and Williams, 2013).

Using a proprietary dataset of inspected engagements obtained from the PCAOB, Aobdia (2016b) investigates the ability of several commonly used measures of audit quality obtained from publicly available data to predict an accurate measure of audit process quality derived from audit deficiencies of individual engagements identified during the PCAOB inspections process. In contrast to prior literature which argues that the issuance of a going concern opinion is a measure of good audit quality, Aobdia (2016b) does not find any association between the issuance of a going concern opinion and audit deficiencies as measured by PCAOB inspection

reports. Aobdia (2016b) argues that this result is consistent with the two conflicting roles of a going concern opinion: (1) auditor independence, which is consistent with higher audit quality; and (2) a disclaimer effect, which suggests that the engagement team can reduce the amount of work performed during the audit, because of the perceived or actual lessened litigation risk afforded by the going concern opinion (Mutchler, 1984; Carcello and Palmrose, 1994; Kaplan and Williams, 2013). Based on his analysis of the largest U.S. audit firms, Aobdia (2016b) suggests that the validity of a going concern opinion as a measure of audit quality should be interpreted with caution. His results suggest that any test that uses the issuance of a going-concern opinion as the dependent variable is a clear test of auditor independence, and not of general audit quality (Aobdia, 2016b).

Chapter 6

Sensitivity Tests

6.1 Audit Fees Analysis

In the main analysis, I operationalize audit quality in terms of two outcomes: total and abnormal accruals and the propensity to issue a going concern opinion. In this section, I further operationalize audit quality in terms of audit fees, a proxy for audit inputs and process. Audit fees are used to proxy for audit quality because they are expected to measure the auditor's effort level (DeFond and Zhang, 2014). However, audit fees are a noisier proxy for audit quality as audit inputs and process are only one of many determinants of audit fees. In addition to capturing auditor effort, fees capture risk premia, improved audit efficiency, and the joint outcome of both supply and demand factors (DeFond and Zhang, 2014). For this reason, I include the results of the audit fees analysis in my sensitivity tests.

Design of Empirical Tests

The audit fees analysis examines whether there is a change in the audit production process (i.e., inputs and process) resulting from PCAOB inspections. Choi et al. (2008) model audit fees as a function of audit costs, which are a function of expected legal costs plus effort costs. The auditor must choose a level of audit effort to minimize expected total audit cost, and the optimal effort is increasing in the strictness of legal regime and legal liability payment. PCAOB inspections increase regulatory scrutiny, require stricter compliance with auditing standards, and subject auditors to higher penalties for misconduct (DeFond and Lennox, 2011). Thus, auditors

are expected to increase effort in anticipation of or in response to PCAOB inspection and will increase audit fees charged in order to compensate for the increased effort.

Using audit fees as a measure of auditor effort, I investigate to what extent inspections are associated with a change in auditor effort. PCAOB inspections provide ex ante incentives to improve audit quality in anticipation of the inspections. In addition, inspections identify deficiencies in firms' audits and in their quality control procedures (PCAOB, 2011b; Church and Shefchik, 2012; Hermanson et al., 2007). Audit firms with inspection deficiencies have an incentive to remedy the deficiency as inspection deficiencies are associated with auditor switches (Daugherty et al., 2011; Abbott et al., 2013). Quality control weaknesses are only publicly reported if they are not remedied within a 12 month period after the inspection report date, so there is incentive to remedy these deficiencies in a timely manner (PCAOB, 2004c). Finally, the selection of client files for PCAOB inspection is risk-based; thus, a client with a previously-identified audit deficiency has a higher probability of future inspection.

To test hypotheses 1, 2, and 3, I estimate the model in (5) below using the FULL and PERMITTED COUNTRY samples:

$$\begin{aligned} \ln AUDFEES_{it} = {} & \beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \beta_3 INSPECTED\_AUDITOR + \\ & \beta_4 SIZE_{it} + \beta_5 INVREC_{it} + \beta_6 LOSS_{it} + \beta_7 ROA_{it} + \beta_8 LEV_{it} + \beta_9 ISSUE_{it} + \beta_{10} NBS_{it} + \\ & \beta_{11} NGS_{it} + \beta_{12} BIGN_{it} + \beta_{13} GDP\_PER\_CAP_t + \beta_{14} FDI_t + \beta_{15} EQUITY + \beta_{16} DISCL + \\ & \beta_{17} BNDO_t + \beta_{18} INMR_{it} + \text{Industry Indicators} + \text{Year Indicators} + \varepsilon \end{aligned} \quad (5)$$

Where lnAUDFEES = the natural log of audit fees in year *t*.

ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR are as previously defined.

Model (5) tests whether audit fees differ internationally as a function of PCAOB inspection access in a country, whether the first PCAOB inspections conducted in a country have an

incremental effect on audit fees, and whether there is a further incremental effect on audit fees for audit firms that are actually inspected by the PCAOB, plus a set of controls for other factors that may affect audit fees. The combined coefficient of ACCESS + POST_INSPECTION captures the total effect of the first PCAOB inspections conducted in a country, and the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor. Hypotheses 1, 2, and 3 predict positive coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively.

I include the following determinants of audit fees suggested by the prior literature: (1) $SIZE_{it}$, the natural log of year-end total assets of company *i* in year *t*. This is a proxy for company size. (2) $INVREC_{it}$, the sum of inventories and receivables divided by total assets of company *i* in year *t*. This is a proxy for client complexity. (3) $LOSS_{it}$, equal to one when company *i* reports a net loss in year *t*, 0 otherwise. (4) ROA_{it}, the return on assets of company *i* in year *t*. (5) LEV_{it}, the ratio of year-end total liabilities to total assets of company *i* in year *t*. The three preceding variables are included to measure client-specific litigation risks to be borne by auditors (Choi et al., 2008). (6) $ISSUE_{it}$, equals 1 when long-term debt increased by 20 percent or more, or the number of common shares outstanding increased by 10 percent or more, in the three years prior to year *t*, 0 otherwise. This is an additional proxy for client-specific risk. (7) NBS_{it}, the natural log of 1 plus the number of business segments of company *i* in year *t*. (8) NGS_{it}, the natural log of 1 plus the number of geographical segments of company *i* in year *t*. The two preceding variables are additional proxies for client complexity because diversified and geographically dispersed companies likely require more audit effort/work, thus leading to higher fees (Simunic and Stein, 1987). Audit fees are positively related to client size, client complexity, and client-specific risk factors. (9) $BIGN_{it}$, a dummy variable equal to one if the company's auditor is a Big N firm or

international affiliate of a Big N firm, zero otherwise. Choi et al. (2008) document the existence of a significant Big 4 premium after controlling for all other fee determinants. Following Choi et al. (2008), I also include the inverse Mills ratio ($INMR_{it}$) in order to control for potential endogeneity problems associated with auditor choice.[52],[53]

Following Choi et al. (2008), I include five country-level variables to control for country-level factors that may cause variation in audit fees across countries: (1) $GDP\_PER\_CAP_t$, the gross domestic product per capita in year *t*. I include GDP to control for cross-country differences in standard of living and, relatedly, the reservation compensation of audit partners and staff (Choi et al., 2008). (2) FDI_t, foreign direct investment scaled by GDP in year *t*. Audit fees can differ between countries with high and low foreign direct investment (Choi et al., 2008). (3) EQUITY, the importance of each country's equity market, measured by the extent to which each country's companies rely on equity financing. EQUITY comes from La Porta et al. (1997) and

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[52] It is widely accepted in principle that clients self-select their auditors based on company characteristics, private information, or other unobservable characteristics (Chaney et al., 2004). Econometrically, self-selection introduces a bias in the standard OLS regressions. Chaney et al. (2004) find that client companies in their sample choose auditors that minimize their audit fees. In addition, they find that the slope coefficients in audit fee regressions differ significantly across Big N and non-Big N auditors, suggesting that Big N auditors have a different fee structure from non-Big N auditors (e.g., Big N auditors may invest more in technology, training, and facilities and, consequently, carry out audits more efficiently for large, relatively complex clients).

[53] To obtain the inverse Mills ratio, I estimate the following probit auditor-choice model in the first stage, which is similar to the model used by Choi et al. (2008):
$Pr(BIGN_{it}) = \xi_0 + \xi_1 SIZE_{it} + \xi_2 INVREC_{it} + \xi_3 LEV_{it} + \xi_4 LOSS_{it} + \xi_5 ISSUE_{it} + \xi_6 INVPRO + \xi_7 GDP\_PER\_CAP_{it} + \xi_8 FDI_{it} + \xi_9 EQUITY_i$ + Error Term, where the dependent variable is the probability of Big N auditor choice. In the second stage, the inverse Mills ratio is included as an additional explanatory variable in the OLS estimation of the audit fee equation. The self-selection model allows the slope coefficients and the intercept in the audit fee regression to vary across Big N and non-Big N clients (Chaney et al., 2004). As explained in Chaney et al. (2004):

> Specifically, if Big 5 auditors invest more in technology, training, etc., then the intercept in the fee regression of Big 5 clients will be larger, reflecting the Big 5 auditors' compensation for their increased investments. However, this larger investment will allow Big 5 auditors to conduct audits more efficiently, particularly for large, risky, and relatively complex clients. In such a case, we expect the slope coefficients on variables associated with audit effort or risk to be smaller for these clients (p. 57).

takes into account the stock market capitalization held by noncontrolling shareholders relative to GDP, the number of listed companies relative to the population, and the number of initial public offerings relative to the population. EQUITY "measures the degree of equity market development or the extent to which companies in each country rely on equity financing relative to debt financing, which may differentially affect audit fees" (Choi et al., 2008, p. 67). (4) DISCL, a country's disclosure level measured by the Center for International Financial Analysis and Research (CIFAR) index. I include DISCL to control for differences in the accounting rules and the complexity of the reporting environment across countries. A higher level of required disclosure is positively associated with audit fees (Choi et al., 2008). (5) BNSHARE, the Big N market share (as a group) relative to non-Big N accounting firms in a country, measured by the percentage of total clients audited by the Big N firms (Francis et al., 2013). BNSHARE is a proxy for the level of competition in the audit market of each country. If a country's audit market is dominated by Big N auditors, they are likely to be able to charge higher fees due to their monopoly power (Choi et al., 2008). Finally, I include industry and year indicators to control for potential variations in audit fees between industries and over time.

To test hypotheses 4, 5, and 6, I estimate the model in (6) below using the FULL and PERMITTED COUNTRY samples:

$$\begin{aligned} \ln AUDFEES_{it} = {} & \beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \beta_3 INSPECTED\_AUDITOR + \\ & \beta_4 LOW\_APD + \beta_5 ACCESS*LOW\_APD + \beta_6 POST\_INSPECTION*LOW\_APD + \\ & \beta_7 INSPECTED\_AUDITOR*LOW\_APD + \beta_8 SIZE_{it} + \beta_9 INVREC_{it} + \beta_{10} LOSS_{it} + \\ & \beta_{11} ROA_{it} + \beta_{12} LEV_{it} + \beta_{13} ISSUE_{it} + \beta_{14} NBS_{it} + \beta_{15} NGS_{it} + \beta_{16} BIGN_{it} + \\ & \beta_{17} GDP\_PER\_CAP_t + \beta_{18} FDI_t + \beta_{19} EQUITY + \beta_{20} DISCL + \beta_{21} BNDO_t + \beta_{22} INMR_{it} \\ & + Industry\ Indicators + Year\ Indicators + \varepsilon \end{aligned} \quad (6)$$

All variables are as described previously.

I include the interaction of each of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD. The base group includes client-year observations of clients of audit firms domiciled in high APD countries that do not allow PCAOB inspection access. β_1 captures the effect of PCAOB inspection access on audit fees in countries with high APD. β_2 captures the incremental effect of the first PCAOB inspections in countries with high APD. β_3 captures the incremental effect of PCAOB inspections for the firms that have been inspected in countries with high APD. β_4 includes client-year observations of clients of audit firms domiciled in low APD countries that do not allow PCAOB inspection access. β_5 captures the incremental effect of PCAOB inspection access on audit fees in low versus high APD countries. Hypothesis 4 predicts β_5 to be positive. β_6 captures the incremental effect of the first PCAOB inspections in low versus high APD countries. Hypothesis 5 predicts β_6 to be positive. β_7 captures the incremental effect of PCAOB inspections for the firms that have been inspected in low versus high APD countries. Hypothesis 6 predicts β_7 to be positive. Finally, SUM_ACCESS_LOW_APD is equal to the combined coefficient of ACCESS + ACCESS*LOW_ADP and captures the total effect of PCAOB inspection access on audit fees in low APD countries. SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD and captures the total effect of the first PCAOB inspections in low APD countries. SUM_INSPECTED_AUDITOR_LOW_APD is the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR*LOW_ADP and captures the total effect of PCAOB inspections for the firms that have been inspected in low APD countries.

Sample and Descriptive Statistics

Table 6 Panel A presents the sample selection procedure for the audit fees sample, for which the final sample consists of 1,758 observations. Consistent with the main analysis, I winsorize observations that fall in the top and bottom 2.5 percent of continuous variables.[54] Panel B of Table 6 presents the audit fees sample breakdown by auditor location and PCAOB inspection access status as of December 31, 2012. Panel C of Table 6 reports descriptive data for the audit fee sample variables, by PCAOB inspection access status, and shows that mean audit fees (AUDIT_FEES) is $3.470 million for the PERMITTED COUNTRY sample and $16.287 million for the NOT PERMITTED sample. Companies in countries where inspection access is permitted have lower total assets (ASSETS), inventories and receivables (INV_REC), return on assets (ROA), leverage (LEV), number of business and geographic segments (NBS and NGS), and use of a Big N audit firm or international affiliate (BIGN). I note, however, that the NOT PERMITTED sample has only 137 of 1,758 total observations for the audit fee sample. Untabulated means for the FULL sample control variables are, for the most part, comparable to those reported in Choi et al. (2008).[55] However, the FULL sample companies have higher audit fees, with the natural log of audit fees of 7.003 (4.71); more business (NBS) and geographic segments (NGS), 2.565 (1.58) and 4.082 (1.4), respectively; and greater use of a Big N audit firm or international affiliate (BIGN), 0.949 (0.80), than the sample companies in Choi et al. (2008).

[54] The results are qualitatively the same if I winsorize observations that fall in the top and bottom 1 percent of continuous variables, with the following exceptions. In Table 7 Panel A, column (3), POST_INSPECTION*LOW_APD is significant at p=0.077 (instead of p=0.147) and SUM_POST_INSPECTION_LOW_APD is significant at p=0.134 (instead of p=0.088). In Table 7 Panel B, column (2), ACCESS + POST_INSPECTION is significant at p=0.062 (instead of p=0.106).

[55] Means for the FULL sample control variables and sample means reported in Choi et al. (2008) Table 1 (in parentheses) are as follows: SIZE 14.16 (12.03); INV_REC 0.212 (0.29); LOSS 0.266 (0.25); ROA 0.011 (-0.01); and LEV 0.481 (0.58).

The FULL sample mean of ISSUE is 0.492, which is lower than the mean of 0.81 reported in Choi et al. (2008), due to a difference in measuring this variable.[56]

[Insert Table 6]

Table 6 Panel D presents Pearson correlation coefficients and *p*-values among all the explanatory variables included in the audit fee analysis. The magnitudes of pair-wise correlations among company-specific control variables are no greater than 0.5, except for the correlations between LOSS and ROA (-0.74), and between INMR and SIZE (-0.69) and INMR and LEV (-0.54).[57] The country-level control variable, GDP_PER_CAP, is highly correlated with EQUITY (0.58) and DISCL (0.71). DISCL is also highly correlated with EQUITY with the Pearson correlation coefficient of 0.68.[58] LOW_APD is highly correlated with GDP_PER_CAP (-0.72), DISCL (-0.78), and BNSHARE (-0.45).

Results

Table 7 presents the regression estimates for the audit fee analysis. In Panels A and B, column (1) reports the results of estimating equation (5), column (2) re-estimates equation (5) after replacing the country-level control variables with country fixed effects, and column (3) reports the results of estimating equation (6), for the FULL and PERMITTED COUNTRY samples, respectively. I am unable to include country fixed effects in the models that include the

[56] In my study, *ISSUE* equals one when long-term debt increased by 20 percent or more, or the number of common shares outstanding increased by 10 percent or more, in the three years prior to year *t*, 0 otherwise. Choi et al. (2008) do not include the quantitative thresholds when coding their variable.

[57] To address the potential multicollinearity problem caused by these correlations, I repeat the tests without ROA, INMR, and ROA and INMR, but the empirical results remain qualitatively the same.

[58] To address the potential multicollinearity problem caused by these correlations, I adjust DISCL and EQUITY for the correlations with other country-level variables as follows: I regress each of these two variables on all other country-level variables and then use residuals obtained from these regressions to repeat my tests (Choi et al., 2008). The empirical results remain qualitatively the same.

APD variable as it does not vary over time within countries. All models are significant with adjusted R^2s ranging from 90.0 to 91.6 (88.4 to 90.2) percent in Panel A (B). The R^2s in my models are higher than the R^2s of 50.4 to 54.3 percent reported in Choi et al. (2008), but are comparable to the adjusted R^2 of 85 percent reported in Kim et al. (2012).[59] Significance levels of individual coefficients are reported as two-tailed *p*-values, and are robust to heteroscedasticity and country clustering effects using the method in Rogers (1993).

[Insert Table 7]

Table 7 Panel A presents the effect of PCAOB inspection access, the effect of the commencement of PCAOB inspections in a country, and the effect of being the inspected audit firm on audit fees. Hypotheses 1, 2, and 3 predict positive coefficients on ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR, respectively. All of the test variables in columns (1) and (2) are insignificant, with the exception of POST_INSPECTION which is positive and significant at $p<0.10$ after replacing the country-level control variables with country fixed effects in column (2). A positive sign indicates that audit fees are incrementally higher after the commencement of PCAOB inspections in a country. This provides some support for

[59] The sample period in Choi et al. (2008) is from 1996 to 2002, and their audit fee data is from the 2004 Worldscope database. Worldscope audit fee data also include nonaudit fees paid to auditors (e.g., consulting fees). These consulting fees would not have the same relationship to the company-specific fee determinants included in the model (and thus, a lower R^2). The audit fee data for Kim et al. (2012) is also from Worldscope; however, their sample period is from 2004 to 2008. Kim et al. (2012) note "… that the SOX-induced significant declines in the provision of nonaudit services had occurred before IFRS adoption (during 2002–2004), and surveys of U.S. and U.K. audit fees (including the audit fee trend report from Audit Analytics in the U.S. and the Audit Fees Survey from the Financial Director magazine in the U.K.) indicate that in both countries the declining trend continued but at a slower pace after 2004, and that nonaudit fees leveled off in 2007 and 2008." Given the time period of their study, the fee data in Kim et al. (2012) would contain less fees for the provision of nonaudit services (and thus, a higher R^2 in their model compared to Choi et al. (2008)). My fee data is from Audit Analytics and does not include any nonaudit fees.

hypothesis 2. In column (3), the ACCESS variable by itself captures the effect of PCAOB inspection access, POST_INSPECTION captures the incremental effect of the first PCAOB inspections, and INSPECTED_AUDITOR captures the incremental effect of PCAOB inspections for the firms that have been inspected, all in countries with high APD. In Panel A, the ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR variables are insignificant at $p>0.10$ in column (3). The interaction of ACCESS with LOW_APD measures the incremental effect of PCAOB inspection access in low versus high APD countries. Hypothesis 4 predicts the interaction term to be positive. Contrary to my prediction, audit fees are lower after PCAOB inspections are permitted, as compared to the pre-PCAOB inspection access period, in countries with low APD. The interactions of POST_INSPECTION and INSPECTED_AUDITOR with LOW_APD are not significant in Panel A. Thus, hypotheses 5 and 6 are not supported.

SUM_ACCESS_LOW_APD is equal to the combined coefficients of ACCESS + ACCESS*LOW_APD, SUM_POST_INSPECTION_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD, and SUM_INSPECTED_AUDITOR_LOW_APD is equal to the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_ADP + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR *LOW_ADP, and capture the total effect of PCAOB inspection access, the total effect of the first PCAOB inspections, and the total effect of PCAOB inspections for the firms that have been inspected, all in low APD countries. The total effect of PCAOB inspection access and the total effect of the first PCAOB inspections are significantly negative in Panel A ($p<0.10$). The results in Panel B for the PERMITTED COUNTRY sample are consistent with the results reported for

Panel A, except that SUM_POST_INSPECTION_LOW_APD in column (3) is not significant in Panel B.

The coefficients on the company-specific control variables are highly significant, with the exception of LOSS, ISSUE, and BIGN. The signs and magnitudes of the coefficients on the company-specific control variables are consistent with the results reported in Choi et al. (2008), with the following exceptions. INV_REC ranges from 0.634 to 0.842, depending on the model, which is lower than the range of 1.455 to 1.481 reported by Choi et al. (2008) for this variable.[60] LOSS ranges from 0.044 to 0.058, depending on the model, and is not significant in any of the models. Choi et al. (2008) report a range of 0.218 to 0.254 for this variable, significant at $p<0.01$.[61] ROA ranges from -0.863 to -0.872, depending on the model, which is lower than the range of -0.230 to -0.250 reported by Choi et al. (2008) for this variable. LEV ranges from 0.767 to 0.834, depending on the model, which is higher than the range of 0.212 to 0.230 reported by Choi et al. (2008) for this variable. NBS ranges from 0.289 to 0.306, depending on the model, which is higher than the range of 0.099 to 0.127 reported by Choi et al. (2008) for this variable. One of the country-level control variables, DISCL, is significant at $p<0.041$ in column (1) of Panel A. The coefficient on DISCL is 0.021, which is lower than the range of 2.718 to 2.907 reported by Choi et al. (2008) for this variable. The country-level control variables all become insignificant after LOW_ADP is included in column (3).[62]

In sum, the evidence in Table 7 indicates that neither PCAOB inspection access, nor being the inspected audit firm, is associated with an increase in audit fees. However, in a model

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[60] Kim et al. (2012) report a value of 0.215 for this variable.
[61] LOSS is highly correlated with ROA (r=-0.74). The coefficient on LOSS is 0.230 ($p<0.01$) when I perform analyses without ROA.
[62] As documented in Table 6 Panel D, LOW_APD is highly correlated with GDP_PER_CAP (-0.72), DISCL (-0.78), and BNSHARE (-0.45).

specification which includes country fixed effects, audit fees in a country are incrementally higher after the first PCAOB inspections are conducted as compared to the pre-PCAOB inspection period. Neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has any effect on audit fees in countries with high APD. Contrary to my prediction, audit fees are lower after PCAOB inspections are permitted, as compared to the pre-PCAOB inspection access period, in countries with low APD.

The findings in Aobdia (2016a) could shed some light on the results of the audit fees analysis. Using a proprietary U.S. dataset obtained from the PCAOB of the hours spent by the auditor on each engagement, the number of audit partner hours, the engagement quality review partner hours, and the information system auditor hours, Aobdia (2016a) finds that the audit firm increases effort on its PCAOB inspected engagement and also on non-inspected engagements of offices or partners that have identified audit deficiencies. However, audit firms reduce their subsequent effort on inspected engagements that did not have identified audit deficiencies. For engagements that receive a clean inspection report, both partner and quality review partner hours go down, by approximately 6% and 8%, respectively, suggesting that partners on the account significantly reduced their effort spent on the engagement following a clean inspection. Overall, these results suggest a deterioration in audit effort and quality following a clean inspection (Aobdia, 2016a). Aobdia (2016a) argues that the PCAOB inspection is likely to provide a signal to the audit firm about the "pass/fail bar," determined by applicable audit standards, and may lead firms to gravitate towards this bar in the absence of additional incentives to improve audit quality. For inspected audits with a noted inspection deficiency, total audit (partner) hours increase by approximately 7% (18%) relative to a clean inspection. However, this increased auditor effort is not fully reflected in audit fees, which increase only by 2%. The results suggest that the audit

firm increases effort, especially on the high-quality partner hours, more than it is able to pass these increased costs to its client. These findings are consistent with DeFond and Zhang (2014), who state "auditors cannot unilaterally charge higher fees for additional effort unless there is a corresponding increase in client demand for the additional effort." Further, an increase in audit fees cannot be unambiguously interpreted as an increase in audit quality (DeFond and Zhang, 2014). Given these alternative explanations, the results from the audit fees analysis should be interpreted with care.

6.2 Going Concern Analysis

The FULL sample for the going concern analysis consists of 2,434 observations, 692 (28.4%) of which are from Canada. There are a total of 58 going concern opinions in the going concern sample, 34 (58.6%) of which are from Canada.[63] Since a substantial portion of my sample companies, and going concern opinions, are from Canada, results may be unduly influenced by the observations from Canada. I re-estimate the going concern regressions after excluding the observations from Canada.

Table 8 presents the regression estimates for the going concern analysis excluding Canadian companies for the FULL sample. Consistent with Table 5 Panel A, for both the all companies and distressed companies samples, the ACCESS variable is insignificant at $p>0.10$ in columns (1) and (2). In Table 8, however, the POST_INSPECTION and INSPECTED_AUDITOR variables are now insignificant for the distressed companies sample. Thus, after excluding Canadian

[63] Gutierrez et al. (2015) examine auditor reporting for going concern uncertainty across countries. In Figure 1, Panel B of their study, they report the frequency of going concern opinions by country over the period 2000-2012. The frequency of going concern opinions for my sample countries ranges from a low of 0.018 for Sweden to a high of 0.259 for the Philippines. The frequency of going concern opinions for Canada is 0.182.

companies, the results in columns (1) and (2) suggest that neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has any effect on the propensity to issue a going concern opinion. In columns (3) and (4), the ACCESS variable by itself captures the effect of PCAOB inspection access, POST_INSPECTION captures the incremental effect of the first PCAOB inspections, and INSPECTED_AUDITOR captures the incremental effect of PCAOB inspections for the firms that have been inspected, all in countries with high APD. In contrast to Table 5 Panel A, ACCESS is now positive and significant at $p<0.10$, and the INSPECTED_AUDITOR variable is now insignificant at $p>0.10$, both for the distressed companies sample. Thus, after excluding Canadian companies, the results of column (4) suggest that PCAOB inspection access is associated with an increase in the propensity to issue a going concern opinion for distressed companies, in both high and low APD countries. The interaction of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with LOW_APD measures the incremental effect of these variables in low versus high APD countries. Hypotheses 4, 5, and 6 predict the interaction terms to be positive. In column (3), the interaction of POST_INSPECTION with LOW_APD is positive and now significant at $p<0.10$ for the all companies sample. This provides some support for hypothesis 5. Thus, after excluding Canadian companies, the propensity to issue a going concern opinion is incrementally higher after the commencement of PCAOB inspections in a country; however, the total effect of the first PCAOB inspections is no longer significant at $p<0.10$, for all companies in countries with low APD.

[Insert Table 8]

After excluding Canadian companies, there are only 371 distressed companies in the PERMITTED COUNTRY sample. In this reduced sample of distressed companies, ACCESS = 0 perfectly predicts GC = 0 and the ACCESS variable is dropped from the analysis. Thus, I cannot analyze the effect of excluding Canadian companies from this sample. The results (untabled) for the PERMITTED COUNTRY all companies sample are consistent with the results reported in Table 5 Panel B, except for the interaction of POST_INSPECTION and LOW_APD in column (3) which is positive and significant at $p<0.10$ after excluding Canadian companies. Thus, in countries with low APD, there is an incremental increase in the propensity to issue a going concern opinion after the commencement of PCAOB inspections in a country and an incremental decrease in the propensity to issue a going concern opinion for audit firms that are actually inspected by the PCAOB. However, the total effect of PCAOB inspection access, the total effect of the first PCAOB inspections, and the total effect of PCAOB inspections for the firms that have been inspected is not significant in low APD countries.

In sum, after excluding Canadian companies, the results in columns (1) and (2) suggest that neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has any effect on the propensity to issue a going concern opinion. The results in columns (3) and (4) suggest that PCAOB inspection access is associated with an increase in the propensity to issue a going concern opinion for distressed companies, in both high and low APD countries. However, as in Table 5, the magnitude of the combined coefficients in column (4) is very large. Thus, caution should be exercised in interpreting the results, especially in column (4), due to the uneven distribution of the going concern opinions over high and low APD and ACCESS and NO ACCESS countries.

6.3 Alternate APD Measure

Following Michas (2011), in the main analysis, I compile individual components of APD for all countries in my sample by considering the following four general aspects of the audit profession: 1) Auditor Education, 2) Auditing Standards, 3) Auditor Independence, and 4) Oversight of Auditors. Because PCAOB inspections may be particularly relevant when there is no local oversight, I perform sensitivity tests by replacing my measure of ADP with one element of the aggregate ADP measure, oversight. I estimate the models in (7) and (8) below using the FULL and PERMITTED COUNTRY samples:

$$\begin{aligned} TOT\_ACC_{it} \text{ or } AB\_ACC_{it} = {} & \beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \\ & \beta_3 INSPECTED\_AUDITOR + \beta_4 NO\_OVERSIGHT + \\ & \beta_5 ACCESS*NO\_OVERSIGHT + \\ & \beta_6 POST\_INSPECTION*NO\_OVERSIGHT + \\ & \beta_7 INSPECTED\_AUDITOR*NO\_OVERSIGHT + \beta_8 LSALES_{it} + \\ & \beta_9 CFO_{it} + \beta_{10} LEV_{it} + \beta_{11} GROWTH_{it} + \beta_{12} \Delta PPE_{it} + \beta_{13} LAG\_LOSS_{it} + \\ & \beta_{14} INVPRO + \text{Industry Indicators} + \text{Year Indicators} + \varepsilon \end{aligned} \quad (7)$$

$$\begin{aligned} P(GOING\_CONCERN = 1) = {} & F(\beta_0 + \beta_1 ACCESS + \beta_2 POST\_INSPECTION + \\ & \beta_3 INSPECTED\_AUDITOR + \beta_4 NO\_OVERSIGHT + \\ & \beta_5 ACCESS*NO\_OVERSIGHT + \\ & \beta_6 POST\_INSPECTION*NO\_OVERSIGHT + \\ & \beta_7 INSPECTED\_AUDITOR*NO\_OVERSIGHT + \beta_8 SIZE + \\ & \beta_9 lnAGE + \beta_{10} RET + \beta_{11} VAR + \beta_{12} ZMIJ + \beta_{13} LEV + \beta_{14} CLEV + \\ & \beta_{15} LLOSS + \beta_{16} INVESTMENTS + \beta_{17} OCF + \beta_{18} BIGN + \beta_{19} RLAG \\ & + \beta_{20} PRIORGC + \beta_{21} HIGHLIT + \beta_{22} RULE\_OF\_LAW + \end{aligned}$$

$$\beta_{23}INV\_PROT + \beta_{24}lnGDP + \beta_{25}GDP\_PER\_CAP +$$

$$\beta_{26}GDP\_GROWTH + Year\ Dummies) \quad (8)$$

Where:

NO_OVERSIGHT = 1 if an audit profession oversight body has not been established in a country, 0 otherwise. All other variables are as described previously.

I then re-estimate the models in (7) and (8), adding a control, LOW_APD_ ALT, for the other components of APD. LOW_APD_ALT = 1 if APD_ALT is below the country-level median APD_ALT of 0.635, 0 otherwise. APD_ ALT is the average of 10 components measuring four aspects of a country's audit profession development.[64] Each aspect includes individual components of Auditor Education, Audit Standards, Auditor Independence, and Auditor Oversight in a country.

Table 9 Panel A presents the results of estimating model (7) for the FULL sample. In Panel A, column (1) (column (3)) reports the results of estimating equation (7), and column (2) (column (4)) re-estimates equation (7) after adding a control, LOW_APD_ALT, for the other components of APD, with TOT_ACC (AB_ACC) as the dependent variable. I include the interaction of each of ACCESS, POST_INSPECTION, and INSPECTED_AUDITOR with NO_OVERSIGHT. The base group includes client-year observations of clients of audit firms domiciled in countries with an established audit profession oversight body that do not allow PCAOB inspection access. β_1 captures the effect of PCAOB inspection access in countries with an established audit profession oversight body. β_2 captures the incremental effect of the first PCAOB inspections in countries with an established audit profession oversight body. β_3 captures the incremental effect of PCAOB

[64] APD_ALT excludes component 10, "Has an audit profession oversight body been established?"

inspections for the firms that have been inspected in countries with an established audit profession oversight body. β_4 includes client-year observations of clients of audit firms domiciled in countries which have not established an audit profession oversight body and which do not allow PCAOB inspection access. β_5 captures the incremental effect of PCAOB inspection access in countries without versus with an audit profession oversight body. β_6 captures the incremental effect of the first PCAOB inspections in countries without versus with an audit profession oversight body. β_7 captures the incremental effect of PCAOB inspections for the firms that have been inspected in countries without versus with an audit profession oversight body. Finally, SUM_ACCESS_NO_OVERSIGHT is equal to the combined coefficient of ACCESS + ACCESS*NO_OVERSIGHT and captures the total effect of PCAOB inspection access in countries which have not established an audit profession oversight body. SUM_POST_INSPECTION_NO_OVERSIGHT is equal to the combined coefficient of ACCESS + POST_INSPECTION + ACCESS*NO_OVERSIGHT + POST_INSPECTION *NO_OVERSIGHT and captures the total effect of the first PCAOB inspections in countries which have not established an audit profession oversight body. SUM_INSPECTED_AUDITOR_NO_OVERSIGHT is equal to the combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*NO_OVERSIGHT + POST_INSPECTION*NO_OVERSIGHT + INSPECTED_AUDITOR*NO_OVERSIGHT and captures the total effect of PCAOB inspections for the firms that have been inspected in countries which have not established an audit profession oversight body.

[Insert Table 9]

The results for the TOT_ACC analysis are similar to the results presented in Table 4 Panel A, column (3), with the following exceptions. POST_INSPECTION (INSPECTED_AUDITOR) was negative (positive) and significant at $p<0.05$ in Table 4 Panel A; both of these variables are insignificant at $p>0.10$ in columns (1) and (2) of Table 9 Panel A. POST_INSPECTION *LOW_APD (INSPECTED_AUDITOR*LOW_APD) was positive (negative) and significant at $p<0.10$ ($p<0.01$) in Table 4 Panel A; both POST_INSPECTION*NO_OVERSIGHT and INSPECTED_AUDITOR*NO_OVERSIGHT are insignificant at $p>0.10$ in columns (1) and (2) of Table 9 Panel A. SUM_ACCESS_LOW_APD was negative and significant at $p<0.10$ in Table 4 Panel A; SUM_ACCESS_NO_OVERSIGHT is insignificant at $p>0.10$ in columns (1) and (2) of Table 9 Panel A. SUM_POST_INSPECTION_LOW_APD was insignificant at $p>0.10$ in Table 4 Panel A; SUM_POST_INSPECTION_NO_OVERSIGHT is negative and significant at $p<0.10$ in column (1) and insignificant at $p>0.10$ in column (2) of Table 9 Panel A. Overall, for countries with an established audit oversight body, the total effect of PCAOB inspection access, the commencement of PCAOB inspections in a country, and being the inspected auditor is negative and significant. For countries without an audit profession oversight body, the commencement of PCAOB inspections in a country and being the inspected auditor are also associated with a decrease in total accruals. For countries with an established audit oversight body, the results for the AB_ACC analysis are generally consistent with the results presented in Table 4 Panel A, column (6): the total effect of the commencement of PCAOB inspections in a country, and being the inspected auditor are negative and significant at $p<0.05$. However, for countries which have not established an audit oversight body, the incremental and total effects of PCAOB inspection access, the commencement of PCAOB inspections in a country, and being the inspected auditor are insignificant at $p>0.10$ in columns (3) and (4) of Table 9 Panel A.

Table 9 Panel B presents the results of estimating equation (7) for the PERMITTED COUNTRY sample. The results for the TOT_ACC analysis differ from the results presented in Table 4 Panel B, column (3), in the following ways. The INSPECTED_AUDITOR variable is positive and significant at $p<0.05$ in column (3) of Table 4 Panel B. This variable is insignificant at $p>0.10$ in columns (1) and (2) of Table 9 Panel B. INSPECTED_AUDITOR *NO_OVERSIGHT is insignificant at $p>0.10$ in columns (1) and (2) of Table 9 Panel B. The INSPECTED_AUDITOR*LOW_APD variable was negative and significant at $p<0.01$ in Table 4 Panel B. ACCESS + POST_INSPECTION is insignificant at $p>0.10$ in columns (1) and (2) of Table 9 Panel B; this variable was negative and significant at $p<0.05$ in Table 4 Panel B. Thus, for countries with an audit profession oversight body, PCAOB inspection access is associated with a decrease in total accruals. For countries without an audit profession oversight body, neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm are associated with a decrease in total accruals.

The results for the AB_ACC analysis are generally consistent with the results presented in Table 4 Panel B, column (6), with one exception. The POST_INSPECTION variable is negative and significant at $p<0.10$ in Table 4 Panel B, column (6). This variable is insignificant at $p>0.10$ in columns (3) and (4) of Table 9 Panel B. Thus, for countries with and without an established audit profession oversight body, neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm are associated with a decrease in abnormal accruals. The control variable, LOW_APD_ALT, is insignificant at $p>0.10$ in all columns of Panels A and B.

Table 9 Panels C and D present the results of estimating equation (8) for the FULL and PERMITTED COUNTRY samples, respectively. In both panels, column (1) (column (3)) reports

the results of estimating equation (8), and column (2) (column (4)) re-estimates equation (8) after adding a control, LOW_APD_ALT, for the other components of APD, for the all companies (distressed companies) sample. For the all companies sample in Panel C, the POST_INSPECTION*NO_OVERSIGHT variable is negative and highly significant (p=0.000), while the INSPECTED_AUDITOR*NO_OVERSIGHT variable is positive and highly significant (p=0.000). The combined coefficient SUM_POST_INSPECTION_NO_OVERSIGHT is negative and highly significant (p=0.000) in columns (1) and (2); however, SUM_INSPECTED_AUDITOR_NO_OVERSIGHT is insignificant at p>0.10 in columns (1) and (2). Thus, for countries without an audit profession oversight body, the commencement of PCAOB inspections in a country is associated with an incremental decrease in the propensity to issue a going concern opinion, and being the inspected auditor is associated with an incremental increase in the propensity to issue a going concern opinion. However, overall, being the inspected auditor is not associated with the propensity to issue a going concern opinion. For countries with an established audit oversight body, the total effect of being the inspected auditor is associated with a decrease in the propensity to issue a going concern opinion (p<0.05).

In columns (3) and (4) for the distressed companies sample, the ACCESS and INSPECTED_AUDITOR variables are positive and highly significant (p=0.000), while the POST_INSPECTION variable is negative and highly significant (p=0.000). The combined coefficient of ACCESS + POST_INSPECTION + INSPECTED_AUDITOR captures the total effect of being an inspected auditor in countries with an established audit profession oversight body, and is negative and significant at p<0.10 in column (3) and insignificant at p>0.10 in column (4). Thus, for countries with an audit profession oversight body, PCAOB inspection access is associated with an increase in the propensity to issue a going concern opinion, the

commencement of PCAOB inspections in a country is associated with an incremental decrease in the propensity to issue a going concern opinion, and being the inspected auditor is associated with an incremental increase in the propensity to issue a going concern opinion. Overall, for distressed companies in countries with an audit profession oversight body, being the inspected auditor is associated with a decrease in the propensity to issue a going concern opinion, without controlling for the LOW_APD_ALT control variable. After controlling for LOW_APD_ALT, the total effect of being the inspected auditor is insignificant at $p>0.10$. The ACCESS*NO_OVERSIGHT and INSPECTED_AUDITOR*NO_OVERSIGHT variables are negative and highly significant ($p=0.000$), while the POST_INSPECTION*NO_OVERSIGHT variable is positive and highly significant ($p=0.000$). As in Table 5 Panel A, the combined coefficients SUM_ACCESS_NO_OVERSIGHT and SUM_ INSPECTED_AUDITOR_ NO_OVERSIGHT are positive and highly significant ($p=0.000$). Thus, for countries without an audit profession oversight body, PCAOB inspection access is associated with a decrease in the propensity to issue a going concern opinion, the commencement of PCAOB inspections in a country is associated with an incremental increase in the propensity to issue a going concern opinion, and being the inspected auditor is associated with an incremental decrease in the propensity to issue a going concern opinion. Overall, PCAOB inspection access and being the inspected auditor are positively associated with the propensity to issue a going concern opinion.

Table 9 Panel D presents the results of estimating equation (8) for the PERMITTED COUNTRY sample. The results for the all companies sample in Panel D are generally consistent with the Panel C results, with one exception. In countries with an established oversight body, the combined coefficient ACCESS + POST_INSPECTION + INSPECTED_AUDITOR, is not significant in columns (1) and (2). For the distressed companies sample in Panel D, the

INSPECTED_AUDITOR variable is negative and significant at $p<0.01$ in columns (3) and (4). This variable was insignificant in Table 5 Panel B column (4). POST_INSPECTION *NO_OVERSIGHT is negative and highly significant ($p=0.000$) and INSPECTED_AUDITOR *NO_OVERSIGHT is positive and highly significant ($p=0.000$) in columns (3) and (4). The corresponding variables, POST_INSPECTION*LOW_APD and INSPECTED_AUDITOR *LOW_APD, were insignificant at $p>0.10$ and negative at $p<0.05$, respectively, in Table 5 Panel B. Finally, SUM_POST_INSPECTION_NO_OVERSIGHT is insignificant at $p>0.10$ in columns (3) and (4) in Table 9 Panel D. The corresponding variable, SUM_POST_INSPECTION_LOW_APD, was positive and highly significant ($p=0.000$) in Table 5 Panel B column (4). The control variable, LOW_APD_ALT, is negative and significant at $p<0.10$ for the all companies sample in column (2) of Panels C and D, and negative and significant at $p<0.01$ for the distressed companies sample in column (4) of Panel C, indicating an inverse relationship between the propensity to issue a going concern opinion and the level of APD in a country. Overall, I conclude that, in addition to auditor oversight, the other aspects of audit profession development captured in LOW_APD are also important.

6.4 Accruals Analysis

The FULL sample for the total (abnormal) accruals analysis consists of 2,975 (2,505) observations, 251 (188) of which are from China. For the countries in which inspections were previously not permitted, the PCAOB negotiated cooperative agreements in order to permit them to resume inspections. For China, the PCAOB entered into a Memorandum of Understanding (MOU) on Enforcement Cooperation with the China Securities Regulatory Commission (CSRC) and the Ministry of Finance (MOF) in May 2013 (PCAOB, 2013c). The MOU is considered a

step towards "cross-border enforcement cooperation" but does not permit inspection access. Thus, China is included in the NOT PERMITTED sample in my study. However, it is possible that the development of the MOU over my sample period and the ongoing discussions with the CSRC and MOF may have influenced auditor incentives and auditor behaviour in China, and my results may be unduly influenced by the observations from China. In Table 10, I re-estimate the total and abnormal accruals regressions for the FULL sample after excluding the observations from China. I note that there are no observations from China in the accruals PERMITTED COUNTRY sample, the going concern sample, and the audit fees sample.

[Insert Table 10]

In Table 10, column (1) reports the results of estimating equation (1), column (2) re-estimates equation (1) after replacing the country-level control variables with country fixed effects, and column (3) reports the results of estimating equation (2), with TOT_ACC as the dependent variable, and all for the FULL sample. Column (4) reports the results of estimating equation (1), column (5) re-estimates equation (1) after replacing the country-level control variables with country fixed effects, and column (3) reports the results of estimating equation (2), with AB_ACC as the dependent variable, and all for the FULL sample. The results for the total accruals analysis in Table 10 are generally consistent with the results in Table 4 Panel A, with the following exceptions. The coefficient on POST_INSPECTION*LOW_APD is positive and significant at $p<0.10$ in column (3) of Table 4 Panel A; this variable is insignificant at $p>0.10$ in column (3) of Table 10. The coefficient on SUM_ACCESS_LOW_APD is negative and significant at $p<0.10$ in column (3) of Table 4 Panel A; this variable is insignificant at $p>0.10$ in

column (3) of Table 10. For the abnormal accruals analysis, the coefficient on ACCESS + POST_INSPECTION + INSPECTED_AUDITOR is negative and significant at $p<0.05$ in column (4) of Table 4 Panel A; this variable is insignificant at $p>0.10$ in column (4) of Table 10. In Table 4 Panel A, the INSPECTED_AUDITOR*LOW_APD variable is negative and significant at $p<0.10$ in column (6); this variable is insignificant at $p>0.10$ in column (6) of Table 10. In Table 4 Panel A, the total effect of being the inspected auditor in high APD countries, the total effect of the first PCAOB inspections in low APD countries, and the total effect of being the inspected auditor in low APD countries are significant at $p<0.10$ in column (6); these combined coefficients are insignificant at $p>0.10$ in column (6) of Table 10.

After excluding Chinese companies, I conclude that, in countries with high APD, PCAOB inspection access, the first PCAOB inspections conducted in a country, and being the inspected audit firms are associated with a significant decrease in total accruals. In low APD countries, the incremental and total effect of being the inspected auditor is a decrease in total accruals. After excluding Chinese companies, the incremental and total effect of the first PCAOB inspections conducted in a country are associated with a decrease in abnormal accruals in high APD countries. In low APD countries, however, PCAOB inspection access, the first PCAOB inspections conducted in a country, and being the inspected auditor are not associated with a decrease in abnormal accruals.

6.5 Delete observations with U.S. auditors

The FULL sample for the total (abnormal) accruals analysis consists of 2,975 (2,505) observations, 363 (288) of which are companies headquartered outside of the U.S. with a U.S. auditor. Similarly, the FULL sample for the going concern analysis consists of 2,434

observations, 335 of which are companies headquartered outside of the U.S. with a U.S. auditor. As inspections of U.S. audit firms began earlier than inspections of non-U.S. firms, it is possible that the change in auditor incentives had already occurred by the time inspections of non-U.S. firms began in 2005, and my results may be unduly influenced by the observations from the U.S. firms. In untabulated regressions, I re-estimate the total and abnormal accruals and going concern regressions for the FULL and PERMITTED samples after excluding the observations with U.S. auditors. The results of the total (abnormal) accruals regressions are generally consistent with the tabled results in Table 4 Panels A and B (Table 4 Panel B). The results of the abnormal accruals regressions differ from the tabled results in Table 4 Panel A column (6) as follows. The POST_INSPECTION, POST_INSPECTION*LOW_APD, INSPECTED_AUDITOR* LOW_APD, and SUM_INSPECTED_AUDITOR_LOW_APD variables were significant at $p<0.10$ in column (6) of Table 4 Panel A. After excluding the observations with U.S. auditors, these variables are insignificant at $p>0.10$.[65] The SUM_ACCESS_LOW_APD variable was insignificant at $p>0.10$ in column (6) of Table 4 Panel A. After excluding the observations with U.S. auditors, this variable is significant at $p<0.10$.

The results of the going concern regressions are generally consistent with the tabled results in Table 5 Panels A and B with the following exceptions. In Table 5 Panel A, the SUM_POST_INSPECTION_LOW_APD variable was positive and significant at $p<0.10$ in column (3). After excluding the observations with U.S. auditors, this variable is insignificant at $p>0.10$. In Table 5 Panel B, the ACCESS + POST_INSPECTION + INSPECTED_AUDITOR variable was insignificant at $p>0.10$ in column (2). After excluding the observations with U.S.

[65] While these variables are not significant at conventional levels, the *p*-values are as follows: INSPECTED_AUDITOR, $p=0.115$; POST_INSPECTION*LOW_APD, $p=0.114$; INSPECTED_AUDITOR*LOW_APD, $p=0.191$; and SUM_INSPECTED_AUDITOR_LOW_APD, $p=0.128$.

auditors, this variable is negative and significant at $p<0.01$. The INSPECTED_AUDITOR, ACCESS + POST_INSPECTION, and ACCESS + POST_INSPECTION + INSPECTED_AUDITOR variables were insignificant at $p>0.10$ in column (4) of Table 5 Panel B. After excluding the observations with U.S. auditors, these variables are negative and significant at $p<0.10$.

Chapter 7

Conclusion

Using the setting where foreign companies cross-listed on U.S. stock exchanges are subject to PCAOB inspection after July 19, 2004, I examine the impact of PCAOB international inspections and APD on audit quality. PCAOB inspections provide audit firms with ex-ante incentives to increase audit quality (DeFond, 2010) and may improve audit quality post-inspection as a result of changes in firm performance arising from the PCAOB inspection process (Carcello et al., 2011b).

I hypothesize that audit quality of cross-listed companies is lower in countries where PCAOB inspections are prohibited as compared to cross-listed companies in countries where PCAOB inspections are permitted. I further hypothesize that audit quality of cross-listed companies increases in a country after the first PCAOB inspection is permitted. In addition, I hypothesize that audit quality of companies audited by the inspected audit firms increases more than the audit quality of companies audited by audit firms that are domiciled in that country that are not inspected.

There is significant country-level variation in APD in my sample countries. Country-level development of the audit profession contributes to the competence and independence of the auditor, both necessary inputs to the delivery of high quality audits (Watts and Zimmerman, 1986). In countries with a highly developed audit profession, I expect that auditors demonstrate a high level of competence as a result of rigorous professional training, and have strong incentives to implement a high level of audit quality. I hypothesize that in such an environment, the

requirement to submit to a PCAOB inspection is likely to have a lesser impact on audit quality, as changes in firm performance resulting from a PCAOB inspection are less likely to occur. In countries with a low level of APD, the requirement to submit to a PCAOB inspection is likely to have a greater impact, as changes in firm performance resulting from a PCAOB inspection are likely to occur.

I operationalize audit quality in terms of two outcomes: total and abnormal accruals (Carcello et al., 2011b; Gunny and Zhang, 2013; Francis and Wang, 2008; Michas, 2011) and going concern opinions (Gramling et al., 2011). In the sensitivity analysis, I further operationalize audit quality in terms of audit fees, a proxy for audit inputs and process (Choi et al., 2008).

For the FULL sample, the results of the accruals analysis show that, in countries with high APD, PCAOB inspection access in a country is associated with a decrease in total accruals, and the first PCAOB inspections conducted in a country are associated with an incremental decrease in total and abnormal accruals. In addition, the total effect of being the inspected auditor is negative and significant in both high and low APD countries. In countries with low APD, total and abnormal accruals are incrementally smaller (less income-increasing) for the firms that have been inspected relative to uninspected firms. Overall, abnormal accruals are lower after the first PCAOB inspections are conducted in a country and for the firms that have been inspected, in countries with both low and high APD. For the PERMITTED COUNTRY sample, I find that in countries with high APD, PCAOB inspection access in a country is associated with a decrease in total accruals, and that the total effect of the first PCAOB inspections conducted in a country is a decrease in total accruals. The decrease in total accruals (and increase in audit quality) after being the inspected audit firm is larger in countries with a low level of APD compared to

countries with a high level of APD, consistent with my prediction. Contrary to my prediction, however, there is no difference in the effect of PCAOB inspection access, the commencement of PCAOB inspections in a country, or being the inspected audit firm, on abnormal accruals between low versus high APD countries for the PERMITTED COUNTRY sample. In the sensitivity analysis, I re-estimate the accruals regressions for the FULL sample after excluding the observations from China. The results of the accruals analysis are robust to excluding Chinese companies.

The results of the going concern analysis indicate that neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being an inspected audit firm has a significant effect on the propensity to issue a going concern opinion in countries with high APD. For distressed companies in countries with low APD, the propensity to issue a going concern opinion is significantly higher after PCAOB inspection access is granted. Contrary to my prediction, however, the propensity to issue a going concern opinion is incrementally lower for the firms that have been inspected relative to the firms that are not inspected, in low APD countries. However, overall, the propensity to issue a going concern opinion is higher after PCAOB inspection access, the commencement of PCAOB inspections in a country, and being the inspected audit firm, as compared to the pre-PCAOB inspection access period, for distressed companies in countries with low APD.

A substantial portion of my sample companies, and going concern opinions, are from Canada; thus, results may be unduly influenced by the observations from Canada. In the sensitivity analysis, I re-estimate the going concern regressions after excluding the observations from Canada. After excluding Canadian companies, the results suggest that neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit

firm has any effect on the propensity to issue a going concern opinion. The results in columns (3) and (4) of Table 8 suggest that PCAOB inspection access is associated with an increase in the propensity to issue a going concern opinion for distressed companies, in both high and low APD countries. However, caution should be exercised in interpreting the going concern results, due to the uneven distribution of the going concern opinions over high and low APD and ACCESS and NO ACCESS countries.

The results for audit fees are mixed. I find no evidence that either PCAOB inspection access, or being the inspected audit firm, is associated with an increase in audit fees. However, in a model specification which includes country fixed effects, audit fees in a country are incrementally higher after the first PCAOB inspections are conducted as compared to the pre-PCAOB inspection period. Neither PCAOB inspection access, the commencement of PCAOB inspections in a country, nor being the inspected audit firm has any effect on audit fees in countries with high APD. Contrary to my prediction, audit fees are lower after PCAOB inspections are permitted and after the commencement of PCAOB inspections in a country, as compared to the pre-PCAOB inspection access period, in countries with low APD. However, as previously stated, audit fees are a noisier proxy for audit quality as audit inputs and process are only one of many determinants of audit fees.

The international setting of my study also provides insight into the mechanism by which PCAOB inspections affect audit quality as there is considerable cross- and within-country variation in inspection timing in my sample. The results of my study provide some evidence that PCAOB international inspections are associated with increased audit quality. The mechanism by which PCAOB international inspections increase audit quality, however, is different depending on the outcome examined. The results of the going concern analysis suggest that it is the threat of

inspection which increases auditor effort and/or independence, as it is PCAOB inspection *access* which is associated with an increase in the propensity to issue a going concern opinion for distressed companies. For the accruals analysis; however, it is also *being the inspected audit firm* that is associated with the increase in audit quality. This suggests that the inspection process itself contributes to the increase in audit quality.

The international inspection issue has received much regulatory attention, and the PCAOB has invested considerable resources in negotiating and implementing cooperative agreements with non-U.S. auditor oversight bodies. The PCAOB has claimed that, due to the obstacles to inspection in some countries, U.S. investors "are deprived of the potential benefits of PCAOB inspections" of these auditors in the jurisdictions where inspections are not permitted (PCAOB, 2011b). The findings in my study provide some evidence that PCAOB international inspections are associated with one of these potential benefits, increased audit quality.

My study contributes to the literature on audit quality in several important ways. First, it answers the call in DeFond and Francis (2005) for cross-country comparisons to examine the effects of alternative institutional arrangements on auditing. My cross-country setting allows me to examine the impact of a country's institutional environment on PCAOB inspections. Second, I extend the analysis of the impact of APD on company-level audit quality in developing countries in Michas (2011) to an additional important setting. The results of this study will contribute to the auditing and regulation literature and will provide insight into the effectiveness of oversight mechanisms used to monitor the profession and how they may affect audit quality.

My results are subject to several caveats. First, my measure of APD is compiled from data collected in 2004 and 2006. If there are changes in the measured components of APD over time, my calculated APD measure has error. As Part III of the IFAC Member Body Compliance

Program suggests improvements to the Regulatory and Standard-Setting Framework may be made, my measure has potential error as it does not capture these possible improvements. I address this limitation in the sensitivity analysis by replacing my measure of ADP with one element of the aggregate ADP measure, oversight. My results are robust to the use of this alternate APD measure. Second, the construct of audit quality is difficult to operationalize and to measure. I address this limitation by using several different proxies for audit quality; however, the problem remains. Finally, as stated above, audit fees are a noisier proxy for audit quality as audit inputs and process are only one of many determinants of audit fees. In addition to capturing auditor effort, fees capture risk premia, improved audit efficiency, and the joint outcome of both supply and demand factors (DeFond and Zhang, 2014). I leave further exploration of these limitations to future research.

Appendix A
Variable Definitions

Variable	Definition
Dependent Variables:	
TOT_ACC	= the company's earnings before extraordinary items less cash flows from operations, in year *t*, scaled by total assets in year *t*-1.
AB_ACC	= a company's abnormal accruals in year *t* calculated based on the model in Francis and Wang (2008).
GOING_CONCERN	= 1 if the client-year receives a going concern opinion, 0 otherwise.
AUDIT_FEES	= audit fees in year *t*.
lnAUDIT_FEES	= the natural log of audit fees in year *t*.
Test Variables:	
ACCESS	= 1 for all company-years that the PCAOB has access to inspect, 0 otherwise.
POST_INSPECTION	= 1 for all company-years after the first PCAOB inspections are conducted in a country, 0 otherwise.

INSPECTED_AUDITOR = 1 for all company-years after the first PCAOB inspection of the company's auditor in a country, 0 otherwise.

APD = the average of four aspects of a country's audit profession development as in Michas (2011). Each aspect includes individual components of Auditor Education, Auditing Standards, Auditor Independence, and Oversight of Auditors in a country. See Appendix B for details.

LOW_APD = 1 if APD is below the country-level median APD of 0.706, 0 otherwise.

APD_ ALT = the average of four aspects of a country's audit profession development, excluding the establishment of an audit oversight body.

LOW_APD_ALT = 1 if APD_ALT is below the country-level median APD_ALT of 0.635, 0 otherwise.

NO_OVERSIGHT = 1 if an audit profession oversight body has not been established in a country, 0 otherwise.

SUM_ACCESS_LOW_APD = ACCESS + ACCESS*LOW_APD

SUM_POST_INSPECTION_LOW_APD = ACCESS + POST_INSPECTION + ACCESS*LOW_APD + POST_INSPECTION*LOW_APD

SUM_INSPECTED_AUDITOR_LOW_APD = ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*LOW_APD + POST_INSPECTION*LOW_APD + INSPECTED_AUDITOR*LOW_APD

SUM_ACCESS_NO_OVERSIGHT = ACCESS + ACCESS*NO_OVERSIGHT

SUM_POST_INSPECTION_NO_OVERSIGHT = ACCESS + POST_INSPECTION + ACCESS*NO_OVERSIGHT + POST_INSPECTION*NO_OVERSIGHT

SUM_INSPECTED_AUDITOR_NO_OVERSIGHT = ACCESS + POST_INSPECTION + INSPECTED_AUDITOR + ACCESS*NO_OVERSIGHT + POST_INSPECTION*NO_OVERSIGHT + INSPECTED_AUDITOR*NO_OVERSIGHT

Control Variables:

Accruals Analysis

SALES = client sales for company *i* in year *t*.

LSALES = the log of client sales for company *i* in year *t*.

CFO = the operating cash flows for company *i* in year *t* scaled by lagged total assets.

LEV = total liabilities / total assets for company *i* in year *t*.

GROWTH = the sales growth rate, defined as the sales in year *t* minus sales in *t* – 1 and scaled by sales in year *t* – 1.

ΔPPE = the growth rate of gross property, plant, and equipment (PPE), defined as PPE in year *t* minus PPE in *t* – 1 and scaled by PPE in *t* – 1.

LAG_LOSS = one if company *i* reports negative income before extraordinary items in year *t* – 1, 0 otherwise.

INVPRO = one for a common-law country, 0 otherwise.

Going Concern Analysis

ASSETS = total client assets at the end of the year.

SIZE = the log of total client assets at the end of the year.

AGE = the number of years included in the CRSP database.

lnAGE = the log of the number of years included in the CRSP database.

RET = the stock return over the fiscal year.

VAR = the variance of the residual from the market model over the fiscal year.

ZMIJ = a bankruptcy measure based on the Zmijewski (1984) bankruptcy model and is calculated as follows: $ZMIJ = 4.803 + 3.599ROA + 5.406LEV - 0.1LIQ$, where *ROA* is return on assets, *LEV* is long-term debt/assets, and *LIQ* is current assets/current liabilities.

LEV = total liabilities over total assets at year-end.

CLEV = the change in LEV during the year.

LLOSS = equal to one when the company reports a loss for the prior year, zero otherwise.

INVESTMENTS = the sum of short- and long-term investment securities (including cash and cash equivalents) scaled by total assets at year-end.

OCF = operating cash flows divided by total assets at year-end.

BIGN = one if the company's auditor is a Big N firm or international affiliate of a Big N firm, zero otherwise.

RLAG = the audit report lag, defined as the number of days between fiscal year-end and audit opinion date.

PRIORGC = one if the client had a going concern opinion in the prior year, zero otherwise.

HIGHLIT = one if the client operates in a high litigation industry, zero otherwise.

RULE_OF_LAW = is taken from Kaufmann et al. (2013), and measures "the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence."

INV_PROT = the anti-director rights index taken from LaPorta et al. (1998, p. 1127), and measures "how strongly the legal system favors minority shareholders against managers or dominant shareholders in the corporate decision-making process, including the voting process."

lnGDP = the log of GDP in a year.

GDP_PER_CAP = the gross domestic product scaled by population in a year.

GDP_GROWTH = growth in GDP over the prior year.

Audit Fees Analysis

ASSETS = year-end total assets in year *t*.

SIZE = the natural log of year-end total assets in year *t*.

INV_REC = the sum of inventories and receivables divided by total assets in year *t*.

LOSS = one when the company reports a net loss in year *t*, 0 otherwise.

ROA = the return on assets in year *t*.

LEV = the ratio of year-end total liabilities to total assets in year *t*.

ISSUE = one when long-term debt increased by 20 percent or more, or the number of common shares outstanding increased by 10 percent or more, in the three years prior to year *t*, 0 otherwise.

NBS = one plus the number of business segments of company *i* in year *t*.

lnNBS = the natural log of one plus the number of business segments of company *i* in year *t*.

NGS = one plus the number of geographical segments of company *i* in year *t*.

lnNGS = the natural log of one plus the number of geographical segments of company *i* in year *t*.

BIGN = one if the company's auditor is a Big N firm or international affiliate of a Big N firm, zero otherwise.

GDP_PER_CAP = the gross domestic product scaled by population in year *t*.

FDI_GDP = foreign direct investment scaled by GDP in year *t*.

EQUITY = comes from La Porta et al. (1997) and takes into account the stock market capitalization held by noncontrolling shareholders relative to GDP, the number of listed companies relative to the population, and the number of initial public offerings relative to the population.

DISCL = is a country's disclosure level measured by the Center for International Financial Analysis and Research (CIFAR) index.

BNSHARE = the Big N market share (as a group) relative to non-Big N accounting firms in a country, measured by the percentage of total clients audited by the Big N firms.

INMR = the inverse Mills ratio for endogenous auditor choice.

Appendix B

PCAOB Inspection Delays

The deadline for registration of foreign public accounting firms was July 19, 2004 (PCAOB, 2004a). Inspections of non-U.S. firms began in 2005. Under PCAOB Rule 4003, a non-U.S. public accounting firm that became registered in 2004 and while registered, issued an audit report or played a substantial role in the preparation or furnishing of an audit report, would have a deadline of 2008 for the first Board inspection.[66] As of December 4, 2008, the Board had conducted 123 inspections of non-U.S. registered firms located in approximately 24 jurisdictions (PCAOB, 2008b). Under Rule 4003's originally stated inspection frequency requirements, an additional 52 non-U.S. firms in 22 jurisdictions were subject to the 2008 inspection deadline but had not yet been inspected as of December 4, 2008 (PCAOB, 2008b). As of December 4, 2008, the PCAOB expected to conduct 31 of these inspections in 13 jurisdictions by the end of 2008. Eighteen inspections involving nine jurisdictions faced challenges to being conducted in 2008, including inspection schedule timing of the home country, sovereignty concerns, or potential legal conflicts.[67,68] The Board remained hopeful that ongoing discussions with authorities in these jurisdictions would lead to resolution of outstanding issues; however, this would not occur in time to conduct the inspections in 2008 (PCAOB, 2008b).

Thus, on December 4, 2008, the Board adopted Rule 4003(f), an amendment to the inspection frequency requirements of Rule 4003 that gave the Board the ability to postpone, for up to one

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[66] PCAOB Rule 4003 set the deadline for the first inspection of a triennially-inspected firm no later than the fourth calendar year following the first calendar year in which the firm, while registered, issued an audit report or played a substantial role in the preparation or furnishing of an audit report (PCAOB, 2010a).
[67] See footnote 1 for further information on inspection schedule timing.
[68] In addition, the Board would use Rule 4003(f) to postpone three other required 2008 inspections. Rule 4003 was amended in 2007 to give the Board discretion not to conduct any otherwise required inspection of a firm if, after the firm issued the audit report that triggered the inspection requirement, the firm went two consecutive years without issuing an audit report. These firms fall into that category (PCAOB, 2008b).

year, certain inspections of non-U.S. registered public accounting firms that the Board was otherwise required to conduct before the end of 2008 (PCAOB, 2008b). The Board also sought comment on a proposed second amendment to Rule 4003, Rule 4003(g), that would give the Board the ability to postpone, for up to three years, certain inspections of non-U.S. registered public accounting firms that the Board was otherwise required to conduct before the end of 2009 (PCAOB, 2008b). In the Board's view, there was long-term value in accepting a limited delay in inspections in order to continue working toward cooperative agreements where there was a reasonable chance of reaching them (PCAOB, 2008b). After public comment, Rule 4003(g) was adopted by the Board on June 25, 2009.[69]

The Board also announced on June 25, 2009 that it would implement transparency measures related to the PCAOB's international inspections program. To provide transparency, the Board would publicly announce, at the beginning of each year until 2012, all of the non-U.S. jurisdictions in which there are firms subject to inspection in that year. The Board would not remove a jurisdiction from the list unless a public explanation of why the schedule had changed was given (PCAOB, 2009a). In addition, the Board announced its intention to implement its proposal to maintain on its website an up-to-date list of all registered firms that had not yet had their first inspection, even though more than four years had passed since the end of the calendar year in which they first issued an audit report while registered with the Board, in order to provide transparency to the public with regard to delayed inspections (PCAOB, 2009a).

On August 12, 2009, the PCAOB published two lists, both as of July 31, 2009: a list of registered firms that had not yet been inspected by the PCAOB, even though more than four years

[69] Rule 4003 (g) gave the Board the ability to postpone, for up to three years, the first inspection of any non-U.S. registered public accounting firms that the Board was otherwise required to conduct before the end of 2009 and that were in a jurisdiction where the Board had not conducted an inspection before 2009 (PCAOB, 2009a).

had passed since the end of the calendar year in which the firm first issued an audit report while registered with the Board; and an updated list of jurisdictions in which the Board had conducted inspections of registered non-U.S. firms.[70] On February 3, 2010, the PCAOB published updates to three lists, all as of December 31, 2009: a list of jurisdictions in which the Board had conducted inspections of registered non-U.S. firms; a list of jurisdictions that the PCAOB intended to inspect in 2010; and a list of registered firms that, as of December 31, 2009, had not yet had their first inspection, even though more than four years had passed since the end of the calendar year in which they first issued an audit report while registered with the Board (PCAOB, 2009b). The update also provided disclosure and explanation of differences between announced plans for 2009 inspections and inspections conducted. On April 7, 2009, the Board had announced plans to conduct inspections in 27 jurisdictions in 2009 (PCAOB, 2009c). However, no PCAOB inspections were conducted in 2009 for 12 of the 27 jurisdictions. Specifically, because of asserted restrictions under non-U.S. law or objections based on national sovereignty, access to the information necessary to conduct inspections of registered firms was, and continued to be, denied in China, Finland, France, Germany, Greece, Ireland, the Netherlands, Norway, Portugal, Sweden, Switzerland, and the United Kingdom (PCAOB, 2009b). The PCAOB was in continued discussions with the relevant authorities in those jurisdictions in order to try to resolve the objections to PCAOB inspections. Pursuant to the transparency measures announced on June 25, 2009, the PCAOB continued to post on their website semi-annual updates on the status of international inspections.

[70] This list was first published on April 7, 2009 (PCAOB 2009c).

Appendix C

Measurement of Audit Profession Development and Description of Data Sources

The 11 components are coded by answering the following 11 questions (data source is in parentheses).[71]

A. Auditor Education:

1. Are individuals required to complete a program of professional accountancy in order to be admitted as members in your organization (IFAC MBC Part 2)?
2. Are individuals required to complete a practical experience requirement in order to be admitted as members in your organization (IFAC MBC Part 2)?
3. Are individuals required to complete a final assessment of the individual's professional capabilities and competencies in order to be admitted as members in your organization (IFAC MBC Part 2)?
4. Is there a requirement for your members to develop and maintain competence through continuous professional development (CPD) (IFAC MBC Part 2)?

B. Auditing Standards:

5. To what extent are the country's auditing standards consistent with International Standards on Auditing? This variable is coded 0 if there is low consistency, .33 if medium, .67 if high, and 1.00 if they are exactly the same except for very minor differences (IFAC Basis of ISA Adoption[72]).

[71] Unless otherwise noted, the questions are coded 1 when the answer is yes and 0 otherwise.
[72] One data source for IFAC's Basis of ISA Adoption by Jurisdiction is the World Bank ROSC Reports. I referred to the ROSC Report for certain of the countries in order to obtain a more detailed understanding of a country's auditing standards.

C. Auditor Independence:

6. What is the "risk of doing business as an auditor" in a particular country? This variable is a risk rating developed by an international insurance underwriter for one of the Big 6 audit firms; the variable may take on values from 0.10 to 1.5 (Wingate 1997).
7. Who is responsible for appointing listed companies' external auditors? This variable is coded 0 if the Board of Directors is involved, .50 if shareholders or government make the appointment, and 1.00 if the Audit Committee is involved (IFAC MBC Part 1).
8. Is auditor rotation required for external auditors of listed companies? This variable is coded 0 if no rotation, .50 if partner rotation, and 1.00 if firm rotation is required (IFAC MBC Part 1).
9. To what extent has the audit profession adopted the ethics code of the International Federation of Accountants? This variable is coded 0 if the country has its own code of ethics, .50 if the country has adopted the IFAC code with modification or has developed their own ethical requirements with a process to eliminate differences between their ethical requirements and the IFAC code, and 1.00 if they have adopted the IFAC code as issued (IFAC MBC Part 2).

D. Auditor Oversight:

10. Has an audit profession oversight body been established (IFAC MBC Part 1)?
11. What type of auditor practice reviews are mandatory within the country? This variable is coded 0 if none are required, .50 if a peer firm or peer auditor

(contractor) conducts the review, and 1.00 if an independent, professional audit organization conducts the review (IFAC MBC Part 1).

International Federation of Accountants Member Body Compliance Program (IFAC MBC)

The International Federation of Accountants (IFAC) is the worldwide organization for the accountancy profession. Its current membership consists of 167 professional accountancy bodies in 127 countries, representing more than 2.5 million accountants employed in public practice, industry and commerce, government, and academe (IFAC, 2012a). IFAC's boards set international standards for auditing, quality control, review, other assurance, and related services; education; ethics; and public sector accounting.[73]

Members and associates are required to participate in the IFAC Member Body Compliance Program (the Program) to demonstrate how they are addressing the Statements of Membership Obligations (SMOs). SMOs are issued by the IFAC Board and establish requirements for members to promote, incorporate, and assist in implementing international standards issued by IFAC and the International Accounting Standards Board (IASB) and establish requirements for quality assurance and investigation and discipline activities (IFAC, 2012b). The Program provides a means for improving the quality of practice by accountants worldwide and achieving convergence to international standards.

The Program is made up of three parts: (1) Assessment of the Regulatory and Standard-Setting Framework; (2) SMO Self-Assessment; and (3) Action Plans. Part I (IFAC MBC Part 1)

[73] The international standard-setting boards include the International Auditing and Assurance Standards Board (IAASB), the International Accounting Education Standards Board, the International Ethics Standards Board for Accountants (IESBA), and the International Public Sector Accounting Standards Board (IPSASB).

consists of a fact-based questionnaire requiring members and associates to provide information about the regulatory and standard-setting framework in their country. It was distributed in March 2004 with a response date of June 1, 2004. The questionnaire includes 10 sections and 138 questions and seeks to collect information on the roles of IFAC member bodies and other organizations (including government, regulatory or other appointed authorities) with respect to: (1) setting auditing, accounting, ethics, public sector and education standards; and (2) regulating the accountancy profession.

Part II (IFAC MBC Part 2) of the Program requires members to complete a self-assessment questionnaire about the incorporation of international standards and the establishment of quality assurance and investigation and discipline programs. It was distributed in November 2005 with a response date of May 1, 2006. The questionnaire includes 7 sections, each dealing with one of the SMOs as follows: (1) Quality Assurance; (2) International Education Standards for Professional Accountants and Other EDCOM (the Education Committee of IFAC) Guidance; (3) International Standards, Related Practice Statements and Other Papers Issued by the IAASB; (4) IFAC Code of Ethics for Professional Accountants; (5) International Public Sector Accounting Standards and Other PSC (the Public Sector Committee of IFAC) Guidance; (6) Investigation and Discipline; and (7) International Financial Reporting Standards.

Where potential areas for improvement are identified in Part II, Part III of the Program requires members and associates to develop Action Plans to address the areas requiring improvement, including identifying the necessary tools, resources, and regulatory changes. Action Plans are updated annually.

The information contained within the Part 1 Assessment of the Regulatory and Standard-Setting Framework Questionnaires, Part 2 SMO Self-Assessment Questionnaires, and Part 3

Action Plans are based on self-assessment by the IFAC member or associate to which the information relates. IFAC staff has reviewed the responses and, where necessary, validated them with external knowledgeable parties (IFAC, 2012c).

The Part I and Part II IFAC data were collected in 2004 and 2006, respectively. If there are changes in the measured components of APD over time, my calculated APD measure has error. As Part III of the Program suggests improvements to the Regulatory and Standard-Setting Framework may be made, my measure has potential error as it does not capture these possible improvements.

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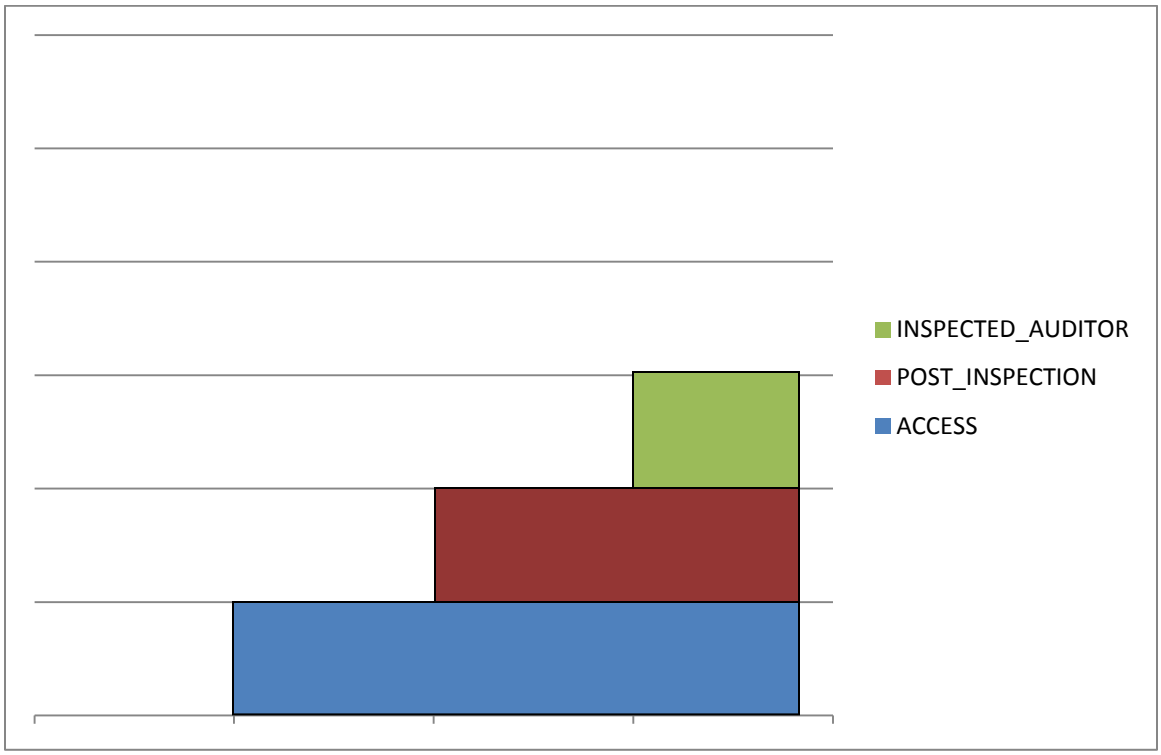
Figure 1. Graphical Representation of Hypotheses

This figure provides a graphical representation of hypotheses one through three.



Where:

ACCESS = 1 for all company-years that the PCAOB has access to inspect, 0 otherwise. For audit firms which registered with the PCAOB by July 19, 2004, ACCESS equals one beginning with 2004 year-end reports.

POST_INSPECTION = 1 for all company-years after the first PCAOB inspections are conducted in a country, 0 otherwise.

INSPECTED_AUDITOR = 1 for all company-years after the first PCAOB inspection of the company's auditor in a country, 0 otherwise.

Table 1. Sample Selection

Accruals Sample:	**N**
No. of observations with no missing values on dependent and independent variables from 2000-2012	3,844
Less:	
No. of financial institutions (SIC 6000-6999)	(328)
No. of observations from Greece, Hong Kong and Ireland	(541)
Final no. of observations used in the Total Accruals tests	2,975
No. of observations with no missing values on dependent and independent variables from 2000-2012	3,047
Less:	
No. of financial institutions (SIC 6000-6999)	(97)
No. of observations from Greece, Hong Kong and Ireland	(445)
Final no. of observations used in the Abnormal Accruals tests	2,505
Going Concern Sample:	
No. of observations with no missing values on dependent and independent variables from 2000-2012	2,997
Less:	
No. of financial institutions (SIC 6000-6999)	(125)
No. of observations from Greece, Hong Kong and Ireland	(438)
Final no. of observations used in the Going Concern tests	2,434

Table 2. Company-year Observations by Auditor Location and PCAOB Inspection Access

PCAOB INSPECTION ACCESS PERMITTED (PERMITTED COUNTRY SAMPLE)					PCAOB INSPECTION ACCESS NOT PERMITTED (NOT PERMITTED SAMPLE)				
AUDITOR COUNTRY	**TOT_ACC**	**AB_ACC**	**GC**	**GC=1**	**AUDITOR COUNTRY**	**TOT_ACC**	**AB_ACC**	**GC**	**GC=1**
Argentina	68	56	20	3	Belgium	17	14	17	0
Australia	48	39	35	5	China	251	188		
Brazil	137	121	69	0	Denmark	18	16	19	1
Canada	680	583	692	34	Finland	9	8	10	0
Chile	54	46	49	0	France	59	48	40	2
Colombia	3	2	3	0	Italy	37	32	42	1
Germany	34	29	29	0	Portugal	8	7	9	0
India	63	51	71	0	Sweden	18	15	9	0
Indonesia	8	7	9	0					
Israel	391	338	403	6					
Japan	110	98	132	0					
Mexico	95	82	82	2					
Netherlands	37	29	40	0					
Norway	32	30	36	1					
Peru	9	7	9	0					
Philippines	8	7	9	0					
Singapore	19	16	19	0					
South Africa	46	39	34	0					
South Korea	43	36	39	0					
Spain	7	6	8	0					
Switzerland	43	39	35	0					
Taiwan	62	52							
Turkey	8	7	9	0					
UK	190	169	121	0					
USA	363	288	335	3					
N	**2,558**	**2,177**	**2,288**	**54**		**417**	**328**	**146**	**4**
% of GC sample				**2.36%**					**2.74%**

My sample includes company-years of foreign companies listed in the U.S. during the period 2000-2012. I identify companies as foreign if they are headquartered outside of the U.S. (Compustat LOC). A company's auditor may or may not be resident in the same country in which the company is headquartered. In particular, AUDITOR COUNTRY = USA in table 2 refers to U.S. auditors of companies headquartered outside of the U.S. A country is categorized as "PCAOB Inspection Access Permitted" if, as of December 31, 2012, PCAOB inspections are permitted in that country. The TOT_ACC (AB_ACC) column reports company-year observations for the total (abnormal) accruals sample. The GC column reports company-year observations for the going concern sample. GC=1 reports the number of going concern audit opinions in the going concern sample.

Table 3. Descriptive Statistics

Panel A: Total Accruals Sample Variables by PCAOB Inspection Access

INSPECTION ACCESS PERMITTED

Variable	N	Mean	Median	P2.5	P25	P75	P97.5
TOT_ACC	2,558	-.070	-.060	-.338	-.116	-.019	.166
AB_ACC	2,177	-.022	-.015	-.363	-.067	.029	.254
SALES (in billions)	2,558	7.633	1.054	.005	.118	6.123	78.792
LSALES	2,558	6.743	6.961	1.518	4.771	8.720	11.275
CFO	2,558	.099	.102	-.283	.041	.169	.384
LEV	2,558	.464	.475	.088	.296	.603	.937
GROWTH	2,558	.183	.135	-.425	-.009	.302	1.423
ΔPPE	2,558	.157	.103	-.264	.019	.217	1.147
LAG_LOSS	2,558	.251	0	0	0	1	1
INVPRO	2,558	.686	1	0	0	1	1
ACCESS	2,558	.890	1	0	1	1	1
POST_INSPECTION	2,558	.787	1	0	1	1	1
INSPECTED_AUDITOR	2,558	.670	1	0	0	1	1
LOW_APD	2,558	.371	0	0	0	1	1

INSPECTION ACCESS NOT PERMITTED

Variable	N	Mean	Median	P2.5	P25	P75	P97.5	Diff in Means p-value
TOT_ACC	417	-.056	-.054	-.305	-.104	-.006	.176	.006
AB_ACC	328	-.017	-.012	-.501	-.060	.038	.353	.447
SALES (in billions)	417	9.329	.403	.021	.120	5.284	80.795	.060
LSALES	417	6.607	5.998	3.020	4.784	8.572	11.300	.306
CFO	417	.113	.104	-.215	.035	.181	.434	.040
LEV	417	.414	.410	.083	.240	.581	.831	.000
GROWTH	417	.269	.179	-.308	.004	.420	1.606	.000
ΔPPE	417	.310	.176	-.135	.048	.426	1.516	.000
LAG_LOSS	417	.240	0	0	0	0	1	.625
INVPRO	417	0	0	0	0	0	0	.000
ACCESS	417	0	0	0	0	0	0	.000
POST_INSPECTION	417	0	0	0	0	0	0	.000
INSPECTED_AUDITOR	417	0	0	0	0	0	0	.000
LOW_APD	417	.060	0	0	0	0	1	.000

Panel B: Total Accruals Sample Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	TOT_ACC	1.00												
(2)	AB_ACC	0.63	1.00											
		(0.00)												
(3)	LSALES	-0.13	-0.11	1.00										
		(0.00)	(0.00)											
(4)	CFO	-0.32	-0.07	0.37	1.00									
		(0.00)	(0.00)	(0.00)										
(5)	LEV	-0.14	-0.03	0.36	-0.05	1.00								
		(0.00)	(0.05)	(0.00)	(0.00)									
(6)	GROWTH	-0.06	0.03	-0.14	0.12	-0.13	1.00							
		(0.00)	(0.05)	(0.00)	(0.00)	(0.00)								
(7)	ΔPPE	-0.11	0.02	-0.15	0.12	-0.19	0.45	1.00						
		(0.00)	(0.19)	(0.00)	(0.00)	(0.00)	(0.00)							
(8)	LAG_LOSS	-0.00	0.08	-0.41	-0.42	0.03	0.08	-0.07	1.00					
		(0.88)	(0.00)	(0.00)	(0.00)	(0.09)	(0.00)	(0.00)						
(9)	INVPRO	0.09	-0.00	-0.34	-0.18	-0.00	0.01	-0.04	0.19	1.00				
		(0.00)	(0.97)	(0.00)	(0.00)	(0.83)	(0.48)	(0.01)	(0.00)					
(10)	ACCESS	-0.04	-0.24	-0.04	-0.04	0.02	-0.05	-0.12	-0.01	0.40	1.00			
		(0.05)	(0.00)	(0.02)	(0.01)	(0.14)	(0.00)	(0.00)	(0.64)	(0.00)				
(11)	POST_INSPECTION	0.02	-0.22	-0.04	-0.06	0.05	-0.07	-0.12	-0.02	0.46	0.73	1.00		
		(0.23)	(0.00)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)	(0.00)			
(12)	INSPECTED_AUDITOR	0.03	-0.18	-0.03	-0.04	0.04	-0.07	-0.11	0.00	0.39	0.61	0.83	1.00	
		(0.12)	(0.00)	(0.12)	(0.01)	(0.02)	(0.00)	(0.00)	(0.82)	(0.00)	(0.00)	(0.00)		
(13)	LOW_APD	-0.06	-0.05	-0.02	0.01	0.05	-0.07	-0.12	0.02	-0.17	0.18	0.06	0.04	1.00
		(0.00)	(0.00)	(0.15)	(0.51)	(0.00)	(0.00)	(0.00)	(0.25)	(0.00)	(0.00)	(0.00)	(0.02)	

All variables are as defined in Appendix A.

Panel C: Going Concern Sample Variables by PCAOB Inspection Access

INSPECTION ACCESS PERMITTED – FULL SAMPLE

Variable	N	Mean	Median	P2.5	P25	P75	P97.5
GOING _CONCERN	2,288	.024	0	0	0	0	1
ASSETS (in billions)	2,288	11.158	1.567	.014	.149	9.266	125.916
SIZE	2,288	7.101	7.357	2.656	5.008	9.134	11.743
AGE	2,288	15.167	13.419	3.066	9.721	18.195	40.074
lnAGE	2,288	2.562	2.597	1.120	2.274	2.901	3.691
RET	2,288	.195	.051	-.766	-.274	.436	2.754
VAR	2,288	1.23e-03	6.50e-04	1.06e-04	3.12e-04	1.51e-03	6.85e-03
ZMIJ	2,288	5.263	5.346	1.233	4.674	6.096	7.841
LEV	2,288	.441	.451	.040	.267	.596	.885
CLEV	2,288	.067	-.001	-.469	-.083	.112	1.417
LLOSS	2,288	.298	0	0	0	1	1
INVESTMENTS	2,288	.198	.132	.002	.058	.279	.757
OCF	2,288	.063	.083	-.418	.024	.136	.289
BIGN	2,288	.891	1	0	1	1	1
RLAG	2,288	86.186	77	25	56.5	98	181
PRIORGC	2,288	.025	0	0	0	0	1
HIGHLIT	2,288	.297	0	0	0	1	1
RULE_OF_LAW	2,288	1.271	1.599	-.560	.981	1.755	1.892
INV_PROT	2,288	4.093	5	1	3	5	5
lnGDP	2,288	27.808	27.922	25.433	26.660	28.462	30.384
GDP_PER_CAP (in thousands)	2,288	33.371	36.695	.830	23.017	45.305	78.457
GDP_GROWTH	2,288	2.541	2.528	-5.527	1.512	3.961	9.285
ACCESS	2,288	.846	1	0	1	1	1
POST_INSPECTION	2,288	.753	1	0	1	1	1
INSPECTED_AUDITOR	2,288	.646	1	0	0	1	1
LOW_APD	2,288	.341	0	0	0	1	1

INSPECTION ACCESS NOT PERMITTED – FULL SAMPLE

Variable	N	Mean	Median	P2.5	P25	P75	P97.5	Diff in Means p-value
GOING_CONCERN	146	.027	0	0	0	0	1	.771
ASSETS (in billions)	146	32.729	11.328	.032	.901	51.220	125.916	.000
SIZE	146	8.640	9.335	3.489	6.804	10.844	11.743	.000
AGE	146	16.228	15.907	3.293	10.715	17.700	40.074	.146
lnAGE	146	2.670	2.767	1.192	2.372	2.873	3.691	.029
RET	146	.120	.025	-.766	-.285	.275	2.754	.226
VAR	146	8.68e-04	4.01e-04	1.06e-04	1.91e-04	8.93e-03	6.85e-03	.004
ZMIJ	146	5.743	5.618	2.703	5.144	6.625	7.640	.000
LEV	146	.549	.577	.255	.397	.661	.845	.000
CLEV	146	.033	-.001	-.284	-.039	.076	.671	.234
LLOSS	146	.233	0	0	0	0	1	.094
INVESTMENTS	146	.170	.102	.002	.053	.263	.724	.089
OCF	146	.077	.092	-.343	.058	.126	.289	.232
BIGN	146	1	1	1	1	1	1	.000
RLAG	146	113.041	110	25	87	157	181	.000
PRIORGC	146	.021	0	0	0	0	1	.742
HIGHLIT	146	.397	0	0	0	1	1	.010
RULE_OF_LAW	146	1.262	1.495	0.410	0.410	1.916	1.959	.883
INV_PROT	146	1.945	2	0	1	3	3	.000
lnGDP	146	27.542	28.182	25.810	26.471	28.416	28.672	.027

GDP_PER_CAP (in thousands)	146	38.245	37.619	17.654	31.777	43.864	62.596	.000
GDP_GROWTH	146	.833	1.683	-5.666	-.047	2.199	5.335	.000
ACCESS	146	0	0	0	0	0	0	.000
POST_INSPECTION	146	0	0	0	0	0	0	.000
INSPECTED_AUDITOR	146	0	0	0	0	0	0	.000
LOW_APD	146	.178	0	0	0	0	1	.000

INSPECTION ACCESS PERMITTED – DISTRESSED SAMPLE

Variable	N	Mean	Median	P2.5	P25	P75	P97.5
GOING_CONCERN	749	.065	0	0	0	0	1
ASSETS (in billions)	749	2.726	.118	.006	.036	.788	41.599
SIZE	749	5.287	4.766	1.727	3.593	6.670	10.803
AGE	749	12.703	12.436	2.756	7.460	16.175	30.186
lnAGE	749	2.399	2.521	1.014	2.010	2.783	3.407
RET	749	.177	-.122	-.843	-.460	.454	3.843
VAR	749	2.27e-03	1.50e-03	2.56e-04	8.06e-04	2.70e-03	1.10e-02
ZMIJ	749	4.155	4.417	-1.557	3.385	5.319	7.525
LEV	749	.406	.368	.019	.179	.587	1.054
CLEV	749	.216	.084	-.594	-.074	.297	2.502
LLOSS	749	.686	1	0	0	1	1
INVESTMENTS	749	.272	.199	.005	.084	.405	.922
OCF	749	-.088	-.026	-.983	-.106	.042	.157
BIGN	749	.834	1	0	1	1	1
RLAG	749	89.69	84	27	63	96	187
PRIORGC	749	.063	0	0	0	0	1
HIGHLIT	749	.409	0	0	0	1	1
RULE_OF_LAW	749	1.355	1.599	-.489	.981	1.755	1.824
INV_PROT	749	4.166	5	1	3	5	5
lnGDP	749	27.617	27.877	25.500	26.105	28.206	30.338
GDP_PER_CAP (in thousands)	749	34.649	36.819	.740	26.032	45.305	67.036
GDP_GROWTH	749	2.429	2.528	-3.974	1.512	4.028	9.030
ACCESS	749	.866	1	0	1	1	1
POST_INSPECTION	749	.797	1	0	1	1	1
INSPECTED_AUDITOR	749	.704	1	0	0	1	1
LOW_APD	749	.359	0	0	0	1	1

INSPECTION ACCESS NOT PERMITTED – DISTRESSED SAMPLE

Variable	N	Mean	Median	P2.5	P25	P75	P97.5	Diff in Means p-value
GOING_CONCERN	39	.077	0	0	0	0	1	.778
ASSETS (in billions)	39	5.469	.115	.026	.048	.967	49.154	.063
SIZE	39	5.719	4.744	3.260	3.865	6.874	10.803	.236
AGE	39	14.135	15.427	5.422	10.715	16.578	19.649	.170
lnAGE	39	2.590	2.736	1.690	2.372	2.808	2.978	.037
RET	39	.212	-.177	-.843	-.479	.586	3.843	.831
VAR	39	2.20e-03	1.50e-03	3.11e-04	7.17e-04	2.43e-03	.011	.847
ZMIJ	39	4.810	4.482	2.616	4.177	5.325	7.525	.037
LEV	39	.515	.513	.198	.364	.661	.839	.013
CLEV	39	.151	.076	-.409	-.008	.163	2.502	.502
LLOSS	39	.641	1	0	0	1	1	.554
INVESTMENTS	39	.284	.301	.030	.096	.405	.861	.755
OCF	39	-.067	-.041	-.475	-.125	.035	.102	.570
BIGN	39	1	1	1	1	1	1	.006

RLAG	39	125.282	118	48	91	160	179	.000
PRIORGC	39	.051	0	0	0	0	1	.773
HIGHLIT	39	.359	0	0	0	1	1	.539
RULE_OF_LAW	39	1.232	1.495	.410	.410	1.495	1.959	.184
INV_PROT	39	2.282	3	0	1	3	3	.000
lnGDP	39	28.200	28.390	26.296	28.214	28.580	28.672	.010
GDP_PER_CAP (in thousands)	39	38.573	38.563	23.494	33.819	42.522	59.889	.089
GDP_GROWTH	39	.627	1.683	-5.666	-.081	2.027	2.777	.000
ACCESS	39	0	0	0	0	0	0	.000
POST_INSPECTION	39	0	0	0	0	0	0	.000
INSPECTED_AUDITOR	39	0	0	0	0	0	0	.000
LOW_APD	39	.026	0	0	0	0	1	.000

Panel D: Going Concern Sample Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)	GC	1.00																			
(2)	SIZE	-0.17	1.00																		
		(0.00)																			
(3)	lnAGE	-0.13	0.29	1.00																	
		(0.00)	(0.00)																		
(4)	RET	0.07	-0.24	-0.11	1.00																
		(0.00)	(0.00)	(0.00)																	
(5)	VAR	0.14	-0.54	-0.19	0.35	1.00															
		(0.00)	(0.00)	(0.00)	(0.00)																
(6)	ZMIJ	-0.16	0.57	0.16	-0.09	-0.35	1.00														
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)															
(7)	LEV	-0.03	0.38	0.17	-0.02	-0.11	0.61	1.00													
		(0.21)	(0.00)	(0.00)	(0.23)	(0.00)	(0.00)														
(8)	CLEV	0.16	-0.34	-0.21	0.11	0.20	-0.32	-0.23	1.00												
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)													
(9)	LLOSS	0.19	-0.48	-0.15	0.22	0.40	-0.42	-0.12	0.25	1.00											
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)												
(10)	INVESTMENTS	0.03	-0.51	-0.14	0.14	0.24	-0.58	-0.42	0.24	0.30	1.00										
		(0.14)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)											
(11)	OCF	0.12	-0.24	-0.10	0.02	0.18	-0.29	-0.02	0.18	0.12	0.33	1.00									
		(0.00)	(0.00)	(0.00)	(0.27)	(0.00)	(0.00)	(0.36)	(0.00)	(0.00)	(0.00)										
(12)	BIGN	-0.11	0.30	0.26	-0.07	-0.22	0.22	0.25	-0.13	-0.06	-0.08	0.01	1.00								
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.75)									
(13)	RLAG	0.04	-0.05	-0.04	0.02	0.05	0.04	0.06	-0.02	-0.01	-0.04	-0.06	-0.07	1.00							
		(0.08)	(0.01)	(0.05)	(0.36)	(0.02)	(0.06)	(0.00)	(0.45)	(0.68)	(0.06)	(0.00)	(0.00)								
(14)	PRIORGC	0.46	-0.15	-0.14	0.13	0.18	-0.12	-0.03	0.09	0.22	0.03	0.07	-0.09	0.02	1.00						
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.08)	(0.00)	(0.00)	(0.11)	(0.00)	(0.00)	(0.22)							
(15)	HIGHLIT	0.00	-0.26	0.05	0.04	0.16	-0.29	-0.08	0.06	0.18	0.36	0.17	0.03	-0.11	-0.00	1.00					
		(0.90)	(0.00)	(0.02)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.17)	(0.00)	(0.96)						
(16)	RULE_OF_LAW	0.04	-0.10	-0.05	-0.03	0.04	-0.09	-0.07	0.10	0.08	0.02	0.02	-0.13	-0.42	0.01	0.02	1.00				
		(0.04)	(0.00)	(0.01)	(0.19)	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)	(0.26)	(0.41)	(0.00)	(0.00)	(0.54)	(0.22)					
(17)	INV_PROT	0.04	-0.14	-0.10	0.01	0.07	-0.08	-0.13	0.13	0.05	-0.02	0.00	-0.19	-0.31	0.05	-0.15	0.50	1.00			
		(0.04)	(0.00)	(0.00)	(0.76)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.30)	(0.89)	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)				
(18)	lnGDP	-0.01	0.18	-0.17	-0.05	-0.03	0.06	-0.01	0.02	-0.13	-0.14	-0.05	-0.29	-0.17	-0.00	-0.22	0.31	0.42	1.00		
		(0.75)	(0.00)	(0.00)	(0.01)	(0.09)	(0.01)	(0.80)	(0.29)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.81)	(0.00)	(0.00)	(0.00)			
(19)	GDP_PER_CAP	0.06	-0.01	-0.14	-0.05	0.01	-0.04	-0.04	0.10	0.01	-0.03	0.02	-0.17	-0.32	0.04	-0.03	0.80	0.31	0.46	1.00	
		(0.00)	(0.53)	(0.00)	(0.01)	(0.70)	(0.04)	(0.04)	(0.00)	(0.69)	(0.19)	(0.26)	(0.00)	(0.00)	(0.07)	(0.20)	(0.00)	(0.00)	(0.00)		
(20)	GDP_GROWTH	-0.03	-0.10	0.04	-0.13	-0.11	-0.01	-0.01	-0.03	-0.02	0.09	0.02	0.10	0.18	-0.04	0.08	-0.38	-0.07	-0.35	-0.42	1.00
		(0.15)	(0.00)	(0.07)	(0.00)	(0.00)	(0.48)	(0.72)	(0.18)	(0.45)	(0.00)	(0.44)	(0.00)	(0.00)	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(21)	ACCESS	0.03	-0.16	-0.13	-0.04	0.01	-0.09	-0.11	0.06	0.01	0.04	0.01	-0.14	0.10	0.03	-0.07	-0.07	0.34	0.14	0.00	0.21
		(0.20)	(0.00)	(0.00)	(0.04)	(0.49)	(0.00)	(0.00)	(0.00)	(0.78)	(0.04)	(0.65)	(0.00)	(0.00)	(0.09)	(0.00)	(0.00)	(0.00)	(0.00)	(0.99)	(0.00)
(22)	POST_INSPECTION	0.04	-0.15	-0.19	0.00	0.04	-0.06	-0.07	0.08	0.01	0.01	-0.01	-0.18	0.05	0.03	-0.06	0.08	0.37	0.25	0.19	-0.04
		(0.08)	(0.00)	(0.00)	(0.98)	(0.03)	(0.00)	(0.00)	(0.00)	(0.68)	(0.77)	(0.57)	(0.00)	(0.01)	(0.11)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.07)
(23)	INSPECTED_AUDITOR	0.04	-0.12	-0.22	0.03	0.06	-0.05	-0.06	0.07	0.03	-0.00	-0.01	-0.09	0.00	0.06	-0.07	0.07	0.33	0.27	0.20	-0.10
		(0.03)	(0.00)	(0.00)	(0.14)	(0.00)	(0.02)	(0.00)	(0.00)	(0.12)	(1.00)	(0.57)	(0.00)	(0.82)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(24)	LOW_APD	-0.05	-0.13	0.05	0.08	0.04	0.03	0.09	-0.07	0.03	0.13	-0.01	0.15	0.29	-0.03	0.20	-0.68	-0.53	-0.64	-0.69	0.42
		(0.02)	(0.00)	(0.02)	(0.00)	(0.07)	(0.11)	(0.00)	(0.00)	(0.14)	(0.00)	(0.78)	(0.00)	(0.00)	(0.10)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

		(21)	(22)	(23)	(24)
(21)	ACCESS	1.00			
(22)	POST_INSPECTION	0.68	1.00		
		(0.00)			
(23)	INSPECTED_AUDITOR	0.56	0.80	1.00	
		(0.00)	(0.00)		
(24)	LOW_APD	0.03	-0.06	-0.07	1.00
		(0.13)	(0.01)	(0.00)	

All variables are as defined in Appendix A.

Panel E: Descriptive Statistics for the Four Aspects of Audit Profession Development (APD)

	Education					Standards	Independence					Oversight			
Country	**1.**	**2.**	**3.**	**4.**	**Avg**	**5.**	**6.**	**7.**	**8.**	**9.**	**Avg**	**10.**	**11.**	**Avg**	**SUM [a]**
Argentina	1	0	0	0	0.25	0	0.36	0.50	0	0.50	0.34	0	0	0	2.36
Australia	1	1	1	1	1.00	1.00	1.00	0.50	0.50	0.50	0.63	1	0.50	0.75	9.00
Belgium	0	1	1	1	0.75	.67	0.48	0.50	0	0.50	0.37	1	0.50	0.75	6.65
Brazil	1	1	0	1	0.75	.67	0.48	1.00	1.00	0	0.62	0	0.50	0.25	6.65
Canada	1	1	1	1	1.00	1.00	0.81	0.50	0.50	0.50	0.58	1	0.50	0.75	8.81
Chile	1	0	0	0	0.25	.33	0.24	0	0	0.50	0.19	0	0	0	2.07
China	0	1	1	1	0.75	.67	0.62[b]	0	0.50	0.50	0.41	1	1.00	1.00	7.29
Colombia	1	0	0	0	0.25	0	0.24	0.50	0	1.00	0.44	0	0	0	2.74
Denmark	1	1	1	1	1.00	1.00	0.48	0.50	0.50	0.50	0.50	1	0.50	0.75	8.48
Finland	1	1	1	1	1.00	1.00	0.36	0.50	0	0.50	0.34	1	0.50	0.75	7.86
France	1	1	1	1	1.00	1.00	0.62	0.50	0.50	0	0.41	1	0.50	0.75	8.12
Germany	0	1	1	1	0.75	1.00	0.62	0.50	0.50	0.50	0.53	1	0.50	0.75	7.62
India	1	1	1	1	1.00	.67	0.24	0.50	0	0	0.19	0	0.50	0.25	5.91
Indonesia	1	0	1	1	0.75	0	0.36	1.00	1.00	0	0.59	0	1.00	0.50	6.36
Israel	1	1	1	1	1.00	.67	NA[c]	0	0.50	0.50	0.33	1	0.50	0.75	7.17
Italy	1	1	1	1	1.00	1.00	0.62	0.50	1.00	0	0.53	1	0	0.50	8.12
Japan	1	1	1	1	1.00	.67	0.48	0.50	0.50	0.50	0.50	1	1.00	1.00	8.65
Mexico	1	0	0	1	0.50	.67	0.48	1.00	0.50	0.50	0.62	0	0	0	5.15
Netherlands	1	1	0	1	0.75	1.00	0.62	0.50	0.50	0.50	0.53	0	0.50	0.25	6.62
Norway	1	1	1	1	1.00	1.00	0.62	0.50	0	0.50	0.41	1	0.50	0.75	8.12
Peru	0	0	0	0	0	0	0.24	0.50	0	0	0.19	0	0	0	0.74
Philippines	1	1	1	1	1.00	1.00	0.36	0	0.50	0.50	0.34	0	0	0	6.36
Portugal	0	1	1	1	0.75	1.00	0.36	0.50	0	0	0.22	1	0.50	0.75	6.36
Singapore	1	1	1	1	1.00	1.00	0.48	0.50	0.50	0.50	0.50	1	1.00	1.00	8.98
South Africa	1	1	1	1	1.00	1.00	0.48	1.00	0	1.00	0.62	0	1.00	0.50	8.48
South Korea	1	1	1	1	1.00	1.00	0.36	1.00	1.00	0.50	0.72	1	1.00	1.00	9.86
Spain	1	1	1	1	1.00	.67	0.48	0.50	0.50	0	0.37	0	0.50	0.25	6.65
Sweden	1	1	1	1	1.00	1.00	0.48	0.50	0	1.00	0.50	1	1.00	1.00	8.98
Switzerland	1	1	1	1	1.00	1.00	0.62	0.50	0.50	0	0.41	1	0	0.50	7.62
Taiwan	1	1	1	1	1.00	0	0.36	0	0.50	0.50	0.34	0	0.50	0.25	5.86
Turkey	1	1	1	1	1.00	.67	0.24	0	1.00	1.00	0.56	0	0	0	6.91
United Kingdom	1	1	1	1	1.00	1.00	1.00	0	0.50	0.50	0.50	1	1.00	1.00	9.00
USA	1	1	1	1	1.00	.67	1.50	1.00	0.50	0.50	0.88	1	0.50	0.75	9.67
Means	**0.85**	**0.82**	**0.79**	**0.88**	**0.83**	**0.73**	**0.52**	**0.48**	**0.41**	**0.42**	**0.46**	**0.58**	**0.48**	**0.53**	**6.95**

[a] SUM is the sum of the 11 individual questions that comprise Audit Profession Development in a country and is presented in this form in this table for descriptive purposes. The value of APD in all subsequent analyses ranges from a theoretical low of 0.0 to a high of 1.0.
[b] Data for China for the variable LITIGATE was not reported in Wingate (1997). Based on the description provided in the World Bank ROSC report for China, I assessed the level of legal liability for auditors to be mid-level. I assigned a value of 0.62 for the variable LITIGATE, which represents the third quartile for this variable for the sample countries.
[c] Data for Israel not available (Wingate 1997).

The coding of all components is determined by answering the following questions which are divided into four basic aspects of country's audit professions: (A) Auditor Education – (1) Are individuals required to complete a program of professional accountancy in order to be admitted as members in your organization? (2) Are individuals required to complete a practical experience requirement in order to be admitted as members in your organization? (3) Are individuals required to complete a final assessment of the individual's professional capabilities and competencies in order to be admitted as members in your organization? (4) Is there a requirement for your members to develop and maintain competence through continuous professional development? B) Auditing Standards – (5) To what extent are the country's auditing standards consistent with International Standards on Auditing? This variable is coded 0 if there is low consistency, .33 if medium, .67 if high, and 1.00 if they are exactly the same except for very minor differences. (C) Auditor Independence – (6) What is the "risk of doing business as an auditor" in a particular country? This variable is a risk rating developed by an international insurance underwriter for one of the Big 6 audit firms; the variable may take on values from 0.10 to 1.5. (7) Who is responsible for appointing listed companies' external auditors? This variable is coded 0 if the Board of Directors is involved, .50 if shareholders or government make the appointment, and 1.00 if the Audit Committee is involved. (8) Is auditor rotation required for external auditors of listed companies? This variable is coded 0 if no rotation, .50 if partner rotation, and 1.00 if firm rotation is required. (9) To what extent has the audit profession adopted the ethics code of the International Federation of Accountants? This variable is coded 0 if the country has its own code of ethics, .50 if the country has adopted the IFAC code with modification or has developed their own ethical requirements with a process to eliminate differences between their ethical requirements and the IFAC code, and 1.00 if they have adopted the IFAC code as issued. (D) Auditor Oversight – (10) Has an audit profession oversight body been established? (11) What type of auditor practice reviews are mandatory within the country? This variable is coded 0 if none are required, .50 if a peer firm or peer auditor (contractor) conduct the review, and 1.00 if an independent, professional audit organization conducts the review. Unless otherwise indicated, variables are coded 1 when the answer is "yes," and 0 otherwise. The final measure of audit profession development is calculated by first averaging the components within each of the four aspects within each country, and then taking the average of the four aspects. See Appendix B for more details on each of the questions.

Table 4. Accruals Analysis

Panel A

This panel reports the results of estimating equations (1) and (2) using the FULL sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		Dependent Variable is TOT_ACC			Dependent Variable is AB_ACC		
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Test variables							
ACCESS	-	-0.034***	-0.002	-0.036***	-0.011	0.001	-0.008
		(0.001)	(0.860)	(0.002)	(0.173)	(0.889)	(0.354)
POST_INSPECTION	-	-0.007	-0.004	-0.015**	-0.011	-0.005	-0.018**
		(0.286)	(0.517)	(0.016)	(0.149)	(0.550)	(0.033)
INSPECTED_AUDITOR	-	0.006	0.007	0.016**	0.007	0.007	0.012
		(0.367)	(0.232)	(0.031)	(0.288)	(0.215)	(0.109)
LOW_APD	?			-0.016			-0.003
				(0.171)			(0.652)
ACCESS*LOW_APD	-			0.017			-0.009
				(0.148)			(0.420)
POST_INSPECTION*LOW_APD	-			0.021*			0.020*
				(0.078)			(0.055)
INSPECTED_AUDITOR*LOW_APD	-			-0.027***			-0.012*
				(0.004)			(0.091)
ACCESS + POST_INSPECTION	-	-0.041***	-0.006	-0.051***	-0.022***	-0.004	-0.026**
		(0.000)	(0.627)	(0.000)	(0.008)	(0.712)	(0.017)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	-	-0.035***	0.001	-0.035***	-0.015**	0.003	-0.014*
		(0.001)	(0.947)	(0.007)	(0.022)	(0.796)	(0.056)
SUM_ACCESS_LOW_APD	-			-0.019*			-0.017
				(0.096)			(0.122)
SUM_ POST_INSPECTION_LOW_APD	-			-0.013			-0.015*
				(0.249)			(0.059)
SUM_ INSPECTED_AUDITOR_LOW_APD	-			-0.024**			-0.015*
				(0.030)			(0.076)

Control variables							
LSALES	?	0.002*	0.003*	0.002*	0.003**	0.004*	0.003*
		(0.072)	(0.084)	(0.097)	(0.034)	(0.063)	(0.066)
CFO	-	-0.253***	-0.252***	-0.253***	-0.084*	-0.087*	-0.081*
		(0.000)	(0.000)	(0.000)	(0.052)	(0.057)	(0.068)
LEV	?	-0.087***	-0.087***	-0.087***	-0.050***	-0.046***	-0.050***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	?	0.009	0.007	0.009	-0.020*	-0.021*	-0.020*
		(0.193)	(0.310)	(0.220)	(0.082)	(0.084)	(0.085)
ΔPPE	?	-0.042***	-0.051***	-0.042***	-0.056***	-0.060***	-0.057***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LAG_LOSS	?	-0.033***	-0.031***	-0.032***	0.012**	0.013**	0.013**
		(0.000)	(0.000)	(0.000)	(0.013)	(0.015)	(0.012)
INVPRO	?	0.032***		0.031***	0.010*		0.009
		(0.000)		(0.000)	(0.063)		(0.118)
INTERCEPT	?	-0.068**	-0.125***	-0.066**	-0.026	-0.058***	-0.026
		(0.019)	(0.000)	(0.028)	(0.183)	(0.009)	(0.178)
Country fixed effects		NO	YES	NO	NO	YES	NO
Industry fixed effects		YES	YES	YES	YES	YES	YES
Year fixed effects		YES	YES	YES	YES	YES	YES
N		2,975	2,975	2,975	2,505	2,505	2,505
R^2		0.224	0.256	0.226	0.074	0.083	0.075

Panel B

This panel reports the results of estimating equations (1) and (2) using the PERMITTED COUNTRY sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		Dependent Variable is TOT_ACC			Dependent Variable is AB_ACC		
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Test variables							
ACCESS	-	-0.018**	0.001	-0.021**	-0.002	0.003	-0.001
		(0.020)	(0.952)	(0.018)	(0.815)	(0.698)	(0.949)
POST_INSPECTION	-	-0.004	-0.005	-0.010	-0.010	-0.008	-0.016*
		(0.615)	(0.455)	(0.161)	(0.170)	(0.339)	(0.069)
INSPECTED_AUDITOR	-	0.006	0.006	0.018**	0.005	0.004	0.009
		(0.328)	(0.290)	(0.015)	(0.461)	(0.465)	(0.228)
LOW_APD	?			0.001			0.002
				(0.942)			(0.865)
ACCESS*LOW_APD	-			0.010			-0.009
				(0.459)			(0.553)
POST_INSPECTION*LOW_APD	-			0.018			0.015
				(0.159)			(0.140)
INSPECTED_AUDITOR*LOW_APD	-			-0.029***			-0.010
				(0.001)			(0.127)
ACCESS + POST_INSPECTION	-	-0.022**	-0.005	-0.031**	-0.012	-0.005	-0.017
		(0.026)	(0.707)	(0.015)	(0.251)	(0.680)	(0.235)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	-	-0.015	0.001	-0.013	-0.008	-0.001	-0.008
		(0.103)	(0.931)	(0.255)	(0.445)	(0.953)	(0.511)
SUM_ACCESS_LOW_APD	-			-0.012			-0.010
				(0.375)			(0.517)
SUM_ POST_INSPECTION_LOW_APD	-			-0.004			-0.010
				(0.753)			(0.423)
SUM_ INSPECTED_AUDITOR_LOW_APD	-			-0.016			-0.012
				(0.216)			(0.415)

Control variables							
LSALES	?	0.004**	0.003*	0.004**	0.005***	0.005**	0.005***
		(0.023)	(0.092)	(0.019)	(0.003)	(0.012)	(0.008)
CFO	-	-0.233***	-0.227***	-0.234***	-0.110***	-0.114***	-0.108***
		(0.000)	(0.000)	(0.000)	(0.007)	(0.008)	(0.010)
LEV	?	-0.087***	-0.090***	-0.088***	-0.049***	-0.047***	-0.049***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	?	0.005	0.003	0.004	-0.022*	-0.022*	-0.022*
		(0.512)	(0.636)	(0.599)	(0.060)	(0.072)	(0.058)
ΔPPE	?	-0.054***	-0.060***	-0.054***	-0.046***	-0.048***	-0.046***
		(0.000)	(0.000)	(0.000)	(0.002)	(0.002)	(0.002)
LAG_LOSS	?	-0.031***	-0.030***	-0.031***	0.010**	0.010*	0.010**
		(0.000)	(0.000)	(0.000)	(0.044)	(0.058)	(0.043)
INVPRO	?	0.035***		0.036***	0.014**		0.014**
		(0.000)		(0.000)	(0.018)		(0.025)
INTERCEPT	?	-0.088***	-0.108***	-0.090***	0.004	-0.010	0.003
		(0.000)	(0.000)	(0.000)	(0.796)	(0.560)	(0.851)
Country fixed effects		NO	YES	NO	NO	YES	NO
Industry fixed effects		YES	YES	YES	YES	YES	YES
Year fixed effects		YES	YES	YES	YES	YES	YES
N		2,558	2,558	2,558	2,177	2,177	2,177
R^2		0.217	0.248	0.219	0.075	0.083	0.075

Table 5. Going Concern Analysis

Panel A

This panel reports the results of estimating equations (3) and (4) using the FULL sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		All cos.	Distressed cos. only	All cos.	Distressed cos. only
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**
Test variables					
ACCESS	+	0.209	1.265	0.081	1.084
		(0.751)	(0.373)	(0.918)	(0.492)
POST_INSPECTION	+	-0.414	-1.618***	-0.535	-0.824
		(0.621)	(0.002)	(0.365)	(0.378)
INSPECTED_AUDITOR	+	-0.851	-0.997**	-0.083	-0.440**
		(0.117)	(0.012)	(0.743)	(0.044)
LOW_APD	?			-2.416**	-15.787***
				(0.040)	(0.000)
ACCESS*LOW_APD	+			0.473	14.181***
				(0.592)	(0.000)
POST_INSPECTION*LOW_APD	+			2.086	0.764
				(0.119)	(0.593)
INSPECTED_AUDITOR*LOW_APD	+			-1.890**	-1.492**
				(0.019)	(0.031)
ACCESS + POST_INSPECTION	+	-0.204	-0.353	-0.453	0.260
		(0.787)	(0.787)	(0.514)	(0.822)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	+	-1.055	-1.350	-0.536	-0.180
		(0.121)	(0.281)	(0.475)	(0.868)
SUM_ACCESS_LOW_APD	+			0.554	15.265***
				(0.551)	(0.000)
SUM_POST_INSPECTION_LOW_APD	+			2.106*	15.205***
				(0.068)	(0.000)
SUM_INSPECTED_AUDITOR_LOW_APD	+			0.133	13.273***
				(0.900)	(0.000)

Control variables

SIZE	-	-0.201	-0.315**	-0.195	-0.305*
		(0.221)	(0.031)	(0.253)	(0.067)
lnAGE	-	-0.761**	-0.692**	-0.845**	-0.783**
		(0.023)	(0.025)	(0.017)	(0.012)
RET	-	-0.185	-0.144	-0.165	-0.096
		(0.399)	(0.536)	(0.479)	(0.679)
VAR	+	-95.301	-103.634*	-88.862	-110.004
		(0.160)	(0.091)	(0.259)	(0.118)
ZMIJ	+	-0.476***	-0.330***	-0.445***	-0.323***
		(0.005)	(0.000)	(0.007)	(0.000)
LEV	?	2.282***	1.904***	2.540***	2.109***
		(0.001)	(0.000)	(0.001)	(0.000)
CLEV	?	0.725***	0.548***	0.780***	0.564***
		(0.002)	(0.000)	(0.001)	(0.000)
LLOSS	+	1.119**	0.586	1.089*	0.456
		(0.040)	(0.361)	(0.064)	(0.518)
INVESTMENTS	-	-2.524***	-2.650***	-2.358***	-2.682***
		(0.000)	(0.000)	(0.007)	(0.000)
OCF	-	-1.165	0.372	-1.335	0.308
		(0.578)	(0.790)	(0.565)	(0.850)
BIGN	+	-0.423	-0.376	-0.664*	-0.616*
		(0.356)	(0.414)	(0.062)	(0.070)
RLAG	+	0.010***	0.004	0.009**	0.003
		(0.004)	(0.247)	(0.011)	(0.460)
PRIORGC	+	3.420***	3.185***	3.413***	3.112***
		(0.000)	(0.000)	(0.000)	(0.000)
HIGHLIT	?	-0.713*	-0.345	-0.610	-0.216
		(0.079)	(0.478)	(0.102)	(0.654)
RULE_OF_LAW	?	-0.604	-0.841	-0.988*	-0.848
		(0.288)	(0.230)	(0.053)	(0.266)
INV_PROT	?	0.229	0.372	0.067	-0.049
		(0.299)	(0.296)	(0.770)	(0.885)
lnGDP	?	-0.393**	-0.526***	-0.631***	-0.782***
		(0.011)	(0.000)	(0.000)	(0.000)
GDP_PER_CAP	?	0.000*	0.000	0.000	0.000
		(0.054)	(0.133)	(0.124)	(0.506)
GDP_GROWTH	?	-0.132	-0.288	-0.079	-0.235
		(0.170)	(0.114)	(0.508)	(0.216)
INTERCEPT	?	9.897**	15.604***	18.698***	25.368***
		(0.016)	(0.000)	(0.000)	(0.000)
Year fixed effects		YES	YES	YES	YES
N		2,369	737	2,369	737
Pseudo R^2		0.461	0.383	0.472	0.393

Panel B

This panel reports the results of estimating equations (3) and (4) using the PERMITTED COUNTRY sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

Variable	Pred	All cos. (1)	Distressed cos. only (2)	All cos. (3)	Distressed cos. only (4)
Test variables					
ACCESS	+	0.831	0.834	0.327	0.109
		(0.226)	(0.529)	(0.647)	(0.929)
POST_INSPECTION	+	0.089	-1.841**	-0.127	-1.047
		(0.948)	(0.016)	(0.895)	(0.278)
INSPECTED_AUDITOR	+	-0.729	-1.064***	0.159	-0.451
		(0.138)	(0.004)	(0.564)	(0.157)
LOW_APD	?			-3.077**	-17.386***
				(0.020)	(0.000)
ACCESS*LOW_APD	+			0.628	14.949***
				(0.493)	(0.000)
POST_INSPECTION*LOW_APD	+			2.016	1.007
				(0.128)	(0.501)
INSPECTED_AUDITOR*LOW_APD	+			-1.971***	-1.635**
				(0.009)	(0.013)
ACCESS + POST_INSPECTION	+	0.921	-1.007	0.200	-0.937
		(0.585)	(0.505)	(0.842)	(0.343)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	+	0.192	-2.071	0.359	-1.389
		(0.897)	(0.149)	(0.769)	(0.237)
SUM_ACCESS_LOW_APD	+			0.955	15.058***
				(0.184)	(0.000)
SUM_POST_INSPECTION_LOW_APD	+			2.845	15.019***
				(0.113)	(0.000)
SUM_INSPECTED_AUDITOR_LOW_APD	+			1.032	12.932***
				(0.517)	(0.000)

Control variables

SIZE	-	-0.202	-0.428**	-0.237	-0.463**
		(0.318)	(0.013)	(0.232)	(0.012)
lnAGE	-	-0.608*	-0.485*	-0.700**	-0.580**
		(0.052)	(0.069)	(0.028)	(0.045)
RET	-	-0.062	-0.067	-0.031	-0.007
		(0.676)	(0.677)	(0.842)	(0.970)
VAR	+	-103.231*	-114.832**	-86.201	-109.142*
		(0.078)	(0.029)	(0.235)	(0.093)
ZMIJ	+	-0.495***	-0.319***	-0.466***	-0.325***
		(0.004)	(0.001)	(0.005)	(0.001)
LEV	?	2.037***	1.839***	2.328***	2.140***
		(0.002)	(0.000)	(0.001)	(0.000)
CLEV	?	0.610**	0.480***	0.655***	0.486***
		(0.010)	(0.000)	(0.005)	(0.001)
LLOSS	+	1.058*	0.620	1.059	0.555
		(0.085)	(0.360)	(0.111)	(0.445)
INVESTMENTS	-	-2.532***	-2.558***	-2.441***	-2.610***
		(0.000)	(0.000)	(0.001)	(0.000)
OCF	-	-0.688	0.555	-0.859	0.660
		(0.733)	(0.682)	(0.706)	(0.663)
BIGN	+	-0.492	-0.254	-0.748**	-0.529*
		(0.214)	(0.578)	(0.013)	(0.096)
RLAG	+	0.010**	0.003	0.007*	0.001
		(0.013)	(0.367)	(0.056)	(0.869)
PRIORGC	+	3.328***	3.301***	3.292***	3.225***
		(0.000)	(0.000)	(0.000)	(0.000)
HIGHLIT	?	-0.561	-0.466	-0.424	-0.330
		(0.142)	(0.299)	(0.206)	(0.449)
RULE_OF_LAW	?	-0.872	-1.243*	-1.511**	-1.610*
		(0.207)	(0.098)	(0.018)	(0.073)
INV_PROT	?	0.258	0.323	-0.079	-0.280
		(0.305)	(0.328)	(0.665)	(0.295)
lnGDP	?	-0.403**	-0.363*	-0.627***	-0.640***
		(0.018)	(0.060)	(0.000)	(0.000)
GDP_PER_CAP	?	0.000**	0.000	0.000*	0.000
		(0.040)	(0.100)	(0.078)	(0.452)
GDP_GROWTH	?	-0.147	-0.329**	-0.088	-0.290*
		(0.112)	(0.021)	(0.441)	(0.084)
INTERCEPT	?	10.236**	12.651***	20.195***	25.372***
		(0.029)	(0.002)	(0.000)	(0.000)
Year fixed effects		YES	YES	YES	YES
N		2,228	699	2,228	699
Pseudo R^2		0.459	0.392	0.472	0.406

Table 6. Audit Fee Analysis Sample Selection and Descriptive Statistics

Panel A. Sample Construction

No. of observations with no missing values on dependent and independent variables from 2000-2012	2,128
Less:	
No. of financial institutions (SIC 6000-6999)	(190)
No. of observations from Greece, Hong Kong and Ireland	(180)
Final no. of observations used in the Audit Fees tests	1,758

Panel B. Company-year Observations by Auditor Location and PCAOB Inspection Access

PCAOB INSPECTION ACCESS PERMITTED (PERMITTED COUNTRY SAMPLE)		PCAOB INSPECTION ACCESS NOT PERMITTED (NOT PERMITTED SAMPLE)	
AUDITOR COUNTRY	**FEES**	**AUDITOR COUNTRY**	**FEES**
Argentina	35	Belgium	9
Australia	39	Denmark	10
Brazil	130	Finland	9
Canada	414	France	63
Chile	54	Italy	27
Germany	34	Sweden	19
Israel	411		
Mexico	68		
Netherlands	33		
Peru	9		
Philippines	9		
Singapore	16		
South Africa	35		
Switzerland	37		
UK	129		
USA	168		
N	**1,621**		**137**

My sample includes company-years of foreign companies listed in the U.S. during the period 2000-2012. I identify companies as foreign if they are headquartered outside of the U.S. (Compustat LOC). A company's auditor may or may not be resident in the same country in which the company is headquartered. In particular, AUDITOR COUNTRY = USA in table 2 refers to U.S. auditors of companies headquartered outside of the U.S. A country is categorized as "PCAOB Inspection Access Permitted" if, as of December 31, 2012, PCAOB inspections are permitted in that country. The FEES column reports company-year observations for the audit fees sample.

Panel C: Audit Fee Sample Variables by PCAOB Inspection Access

INSPECTION ACCESS PERMITTED

Variable	N	Mean	Median	P2.5	P25	P75	P97.5
AUDIT_FEES (in millions)	1,621	3.470	.896	.056	.268	2.940	42.007
lnAUDIT_FEES	1,621	6.837	6.798	4.023	5.591	7.986	10.646
ASSETS (in billions)	1,621	9.804	1.365	.013	.174	8.781	129.1
SIZE	1,621	13.965	14.127	9.506	12.065	15.988	18.676
INV_REC	1,621	.208	.176	.016	.087	.296	.582
LOSS	1,621	.270	0	0	0	1	1
ROA	1,621	.009	.044	-.547	-.009	.089	.218
LEV	1,621	.475	.486	.094	.316	.620	.914
ISSUE	1,621	.494	0	0	0	1	1
NBS	1,621	2.507	1	1	1	4	10
lnNBS	1,621	1.117	.693	.693	.693	1.609	2.398
NGS	1,621	3.995	4	1	2	5	11
lnNGS	1,621	1.497	1.609	.693	1.099	1.792	2.485
BIGN	1,621	0.944	1	0	1	1	1
GDP_PER_CAP (in thousands)	1,621	30.148	31.153	3.040	18.589	43.249	65.790
FDI_GDP	1,621	.03556	.025	-.001	.018	.046	.133
EQUITY	1,621	23.320	26	6	24	27.333	29.667
DISCL	1,621	67.057	68	45	64	74	78
BNSHARE	1,621	.574	.610	.400	.420	.690	.820
INMR	1,621	.107	.067	.000	.010	.161	.457
ACCESS	1,621	.834	1	0	1	1	1
POST_INSPECTION	1,621	.727	1	0	0	1	1
INSPECTED _AUDITOR	1,621	.610	1	0	0	1	1
LOW_APD	1,621	.462	0	0	0	1	1

INSPECTION ACCESS NOT PERMITTED

Variable	N	Mean	Median	P2.5	P25	P75	P97.5	Diff in Means p-value
AUDIT_FEES (in millions)	137	16.287	7.774	.199	3.832	30.475	42.007	.000
lnAUDIT_FEES	137	8.972	8.959	5.293	8.251	10.325	10.646	.000
ASSETS (in billions)	137	44.640	25.77	.075	6.168	84.82	129.1	.000
SIZE	137	16.536	17.065	11.220	15.635	18.256	18.676	.000
INV_REC	137	.255	.265	.043	.185	.326	.466	.000
LOSS	137	.219	0	0	0	0	1	.193
ROA	137	.041	.048	-.306	.012	.086	.218	.018
LEV	137	.542	.546	.255	.446	.619	.843	.000
ISSUE	137	.474	0	0	0	1	1	.668
NBS	137	3.248	3	1	1	5	6	.000
lnNBS	137	1.355	1.386	.693	.693	1.792	1.946	.000
NGS	137	5.117	5	2	4	7	8	.000

lnNGS	137	1.766	1.792	1.099	1.609	2.079	2.197	.000
BIGN	137	1	1	1	1	1	1	.005
GDP_PER_CAP (in thousands)	137	39.497	39.186	26.291	33.819	43.843	59.889	.000
FDI_GDP	137	.033	.019	-.037	.011	.039	.210	.362
EQUITY	137	14.560	13	9.333	13	17.667	23.333	.000
DISCL	137	69.051	69	61	62	69	83	.006
BNSHARE	137	.631	.540	.450	.450	.830	.860	.000
INMR	137	.011	.005	.000	.002	.014	.071	.000
ACCESS	137	0	0	0	0	0	0	.000
POST_INSPECTION	137	0	0	0	0	0	0	.000
INSPECTED _AUDITOR	137	0	0	0	0	0	0	.000
LOW_APD	137	.066	0	0	0	0	1	.000

Panel D: Audit Fee Sample Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)	lnAUDIT_FEES	1.00																			
(2)	SIZE	0.89	1.00																		
		(0.00)																			
(3)	INV_REC	0.00	-0.13	1.00																	
		(0.88)	(0.00)																		
(4)	LOSS	-0.35	-0.46	0.03	1.00																
		(0.00)	(0.00)	(0.23)																	
(5)	ROA	0.34	0.47	0.04	-0.74	1.00															
		(0.00)	(0.00)	(0.06)	(0.00)																
(6)	LEV	0.35	0.31	0.18	0.01	-0.02	1.00														
		(0.00)	(0.00)	(0.00)	(0.76)	(0.32)															
(7)	ISSUE	0.10	0.07	-0.04	0.03	-0.02	0.07	1.00													
		(0.00)	(0.01)	(0.14)	(0.29)	(0.51)	(0.01)														
(8)	lnNBS	0.54	0.49	0.09	-0.22	0.23	0.19	-0.05	1.00												
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.04)													
(9)	lnNGS	0.20	0.07	0.25	0.04	0.04	0.02	-0.06	0.12	1.00											
		(0.00)	(0.00)	(0.00)	(0.11)	(0.07)	(0.35)	(0.01)	(0.00)												
(10)	BIGN	0.18	0.20	-0.01	-0.01	0.07	0.18	0.02	0.01	0.02	1.00										
		(0.00)	(0.00)	(0.55)	(0.80)	(0.00)	(0.00)	(0.35)	(0.54)	(0.35)											
(11)	GDP_PER_CAP	0.30	0.09	0.08	-0.00	-0.03	-0.07	0.08	0.12	0.15	-0.08	1.00									
		(0.00)	(0.00)	(0.00)	(0.97)	(0.26)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)										
(12)	FDI_GDP	-0.04	-0.07	0.08	-0.02	0.02	0.00	0.08	-0.05	0.07	0.00	0.03	1.00								
		(0.08)	(0.00)	(0.00)	(0.41)	(0.45)	(0.99)	(0.00)	(0.04)	(0.00)	(0.91)	(0.15)									
(13)	EQUITY	-0.17	-0.32	0.08	0.15	-0.14	-0.14	-0.07	-0.15	0.19	-0.12	0.58	0.20	1.00							
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)								
(14)	DISCL	0.18	-0.01	-0.01	0.09	-0.11	-0.05	-0.00	0.04	0.12	-0.07	0.71	0.03	0.68	1.00						
		(0.00)	(0.66)	(0.63)	(0.00)	(0.00)	(0.03)	(0.89)	(0.13)	(0.00)	(0.01)	(0.00)	(0.25)	(0.00)							
(15)	BNSHARE	0.24	0.23	-0.08	-0.11	0.05	-0.05	-0.03	0.14	-0.01	0.03	0.39	-0.02	0.12	0.26	1.00					
		(0.00)	(0.00)	(0.00)	(0.00)	(0.06)	(0.03)	(0.17)	(0.00)	(0.63)	(0.19)	(0.00)	(0.42)	(0.00)	(0.00)						
(16)	INMR	-0.56	-0.69	0.09	0.03	-0.12	-0.54	-0.04	-0.27	-0.03	-0.30	0.25	0.02	0.41	0.25	-0.08	1.00				
		(0.00)	(0.00)	(0.00)	(0.18)	(0.00)	(0.00)	(0.06)	(0.00)	(0.16)	(0.00)	(0.00)	(0.51)	(0.00)	(0.00)	(0.00)					
(17)	ACCESS	-0.27	-0.26	-0.11	0.04	-0.07	-0.06	0.19	-0.19	-0.15	-0.09	-0.11	0.08	0.18	-0.06	-0.08	0.25	1.00			
		(0.00)	(0.00)	(0.00)	(0.09)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)				
(18)	POST_INSPECTION	-0.11	-0.16	-0.05	0.01	-0.03	-0.04	0.34	-0.14	-0.08	-0.11	0.09	0.15	0.25	0.06	-0.09	0.26	0.66	1.00		
		(0.00)	(0.00)	(0.03)	(0.78)	(0.22)	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)			
(19)	INSPECTED_AUDITOR	-0.06	-0.10	-0.09	0.01	-0.04	-0.01	0.30	-0.12	-0.09	-0.02	0.15	0.05	0.19	0.05	-0.02	0.22	0.53	0.80	1.00	
		(0.01)	(0.00)	(0.00)	(0.53)	(0.10)	(0.54)	(0.00)	(0.00)	(0.00)	(0.34)	(0.00)	(0.03)	(0.00)	(0.03)	(0.48)	(0.00)	(0.00)	(0.00)		
(20)	LOW_APD	-0.38	-0.22	0.10	0.02	0.02	0.04	-0.00	-0.17	-0.05	0.04	-0.72	0.13	-0.37	-0.78	-0.45	-0.09	0.17	0.06	0.01	1.00
		(0.00)	(0.00)	(0.00)	(0.43)	(0.46)	(0.11)	(0.85)	(0.00)	(0.04)	(0.09)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.80)	

All variables are as defined in Appendix A.

Table 7. Audit Fee Analysis

Panel A

This panel reports the results of estimating equations (5) and (6) using the FULL sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

Variable	Pred	(1)	(2)	(3)
Test variables				
ACCESS	+	-0.164	-0.015	-0.057
		(0.173)	(0.862)	(0.634)
POST_INSPECTION	+	-0.025	0.107*	-0.088
		(0.853)	(0.085)	(0.448)
INSPECTED_AUDITOR	+	0.003	-0.018	-0.041
		(0.980)	(0.833)	(0.685)
LOW_APD	?			-0.495*
				(0.082)
ACCESS*LOW_APD	+			-0.389**
				(0.018)
POST_INSPECTION*LOW_APD	+			0.193
				(0.147)
INSPECTED_AUDITOR*LOW_APD	+			0.030
				(0.825)
ACCESS + POST_INSPECTION	+	-0.189	0.092	-0.145
		(0.272)	(0.341)	(0.210)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	+	-0.186	0.074	-0.186
		(0.331)	(0.505)	(0.269)
SUM_ACCESS_LOW_APD	+			-0.446***
				(0.001)
SUM_POST_INSPECTION_LOW_APD	+			-0.341*
				(0.088)
SUM_INSPECTED_AUDITOR_LOW_APD	+			-0.352
				(0.112)

Control variables				
SIZE	+	0.611***	0.601***	0.601***
		(0.000)	(0.000)	(0.000)
INV_REC	+	0.634**	0.842***	0.755***
		(0.020)	(0.002)	(0.003)
LOSS	+	0.051	0.058	0.044
		(0.286)	(0.212)	(0.391)
ROA	-	-0.869***	-0.872***	-0.863***
		(0.000)	(0.000)	(0.000)
LEV	+	0.834***	0.774***	0.767***
		(0.000)	(0.000)	(0.000)
ISSUE	+	-0.028	0.019	-0.013
		(0.650)	(0.710)	(0.812)
NBS	+	0.306***	0.289***	0.295***
		(0.000)	(0.010)	(0.001)
NGS	+	0.248***	0.136**	0.249***
		(0.002)	(0.039)	(0.002)
BIGN	+	0.069	0.199	0.071
		(0.673)	(0.305)	(0.650)
INMR	?	1.243**	1.378***	1.174**
		(0.032)	(0.005)	(0.038)
GDP_PER_CAP	?	0.000		0.000
		(0.129)		(0.525)
FDI_GDP	?	-0.884		-0.329
		(0.378)		(0.624)
EQUITY	?	-0.012		-0.001
		(0.111)		(0.918)
DISCL	+	0.021**		-0.003
		(0.041)		(0.780)
BNSHARE	+	-0.323		-0.653
		(0.258)		(0.100)
INTERCEPT	?	-4.402***	-3.703***	-2.386**
		(0.000)	(0.000)	(0.020)
Country fixed effects		NO	YES	NO
Industry fixed effects		YES	YES	YES
Year fixed effects		YES	YES	YES
N		1,758	1,758	1,758
R^2		0.900	0.916	0.906

Panel B

This panel reports the results of estimating equations (5) and (6) using the PERMITTED COUNTRY sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

Variable	**Pred**	**(1)**	**(2)**	**(3)**
Test variables				
ACCESS	+	-0.100	0.030	-0.001
		(0.348)	(0.760)	(0.987)
POST_INSPECTION	+	0.013	0.149**	-0.030
		(0.935)	(0.025)	(0.811)
INSPECTED_AUDITOR	+	0.001	-0.010	-0.055
		(0.995)	(0.911)	(0.586)
LOW_APD	?			-0.450
				(0.107)
ACCESS*LOW_APD	+			-0.426**
				(0.014)
POST_INSPECTION*LOW_APD	+			0.158
				(0.252)
INSPECTED_AUDITOR*LOW_APD	+			0.048
				(0.711)
ACCESS + POST_INSPECTION	+	-0.088	0.179	-0.031
		(0.614)	(0.106)	(0.768)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	+	-0.087	0.169	-0.087
		(0.671)	(0.166)	(0.609)
SUM_ACCESS_LOW_APD	+			-0.428***
				(0.006)
SUM_POST_INSPECTION_LOW_APD	+			-0.300
				(0.185)
SUM_INSPECTED_AUDITOR_LOW_APD	+			-0.307
				(0.217)

Control variables				
SIZE	+	0.600***	0.582***	0.588***
		(0.000)	(0.000)	(0.000)
INV_REC	+	0.636**	0.786***	0.726***
		(0.011)	(0.002)	(0.003)
LOSS	+	0.029	0.044	0.026
		(0.564)	(0.407)	(0.643)
ROA	-	-0.800***	-0.810***	-0.798***
		(0.000)	(0.000)	(0.000)
LEV	+	0.765***	0.731***	0.716***
		(0.001)	(0.000)	(0.000)
ISSUE	+	-0.022	0.020	-0.007
		(0.762)	(0.734)	(0.918)
NBS	+	0.323***	0.302**	0.323***
		(0.001)	(0.013)	(0.001)
NGS	+	0.209***	0.140**	0.216**
		(0.008)	(0.041)	(0.013)
BIGN	+	0.064	0.191	0.072
		(0.702)	(0.310)	(0.651)
INMR	?	1.019*	1.124**	0.951
		(0.091)	(0.026)	(0.111)
GDP_PER_CAP	?	0.000		0.000
		(0.223)		(0.627)
FDI_GDP	?	-0.992		-0.569
		(0.388)		(0.477)
EQUITY	?	-0.008		0.002
		(0.287)		(0.833)
DISCL	+	0.020*		-0.006
		(0.088)		(0.614)
BNSHARE	+	-0.106		-0.519
		(0.752)		(0.306)
INTERCEPT	?	-4.215***	-3.350***	-2.069*
		(0.000)	(0.000)	(0.075)
Country fixed effects		NO	YES	NO
Industry fixed effects		YES	YES	YES
Year fixed effects		YES	YES	YES
N		1,758	1,758	1,758
R^2		0.884	0.902	0.891

Table 8. Going Concern Sensitivity Analysis

This panel reports the results of estimating equations (3) and (4) using the FULL sample, excluding observations from Canada. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

Variable	Pred	All cos. (1)	Distressed cos. only (2)	All cos. (3)	Distressed cos. only (4)
Test variables					
ACCESS	+	-0.060	1.698	0.042	2.048*
		(0.950)	(0.262)	(0.963)	(0.096)
POST_INSPECTION	+	0.492	-0.645	-0.574	-1.415
		(0.743)	(0.759)	(0.504)	(0.279)
INSPECTED_AUDITOR	+	-1.623	-1.726	-0.254	-0.089
		(0.196)	(0.272)	(0.796)	(0.931)
LOW_APD	?			-1.998	-14.224***
				(0.189)	(0.000)
ACCESS*LOW_APD	+			-1.066	13.837***
				(0.544)	(0.000)
POST_INSPECTION*LOW_APD	+			3.741*	1.349
				(0.095)	(0.575)
INSPECTED_AUDITOR*LOW_APD	+			-2.626**	-3.543**
				(0.021)	(0.020)
ACCESS + POST_INSPECTION	+	0.432	1.053	-0.532	0.633
		(0.686)	(0.392)	(0.641)	(0.569)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	+	-1.192	-0.673	-0.786	0.544
		(0.126)	(0.551)	(0.437)	(0.701)
SUM_ACCESS_LOW_APD	+			-1.023	15.885***
				(0.647)	(0.000)
SUM_POST_INSPECTION_LOW_APD	+			2.142	15.819***
				(0.142)	(0.000)
SUM_INSPECTED_AUDITOR_LOW_APD	+			-0.737	12.187***
				(0.601)	(0.000)

Control variables

SIZE	-	0.051	-0.025	0.076	0.024
		(0.758)	(0.946)	(0.692)	(0.958)
lnAGE	-	-1.188***	-1.096	-1.361***	-1.215**
		(0.002)	(0.106)	(0.001)	(0.031)
RET	-	-0.724*	-1.145***	-0.733**	-1.099***
		(0.068)	(0.003)	(0.041)	(0.001)
VAR	+	-17.312	65.579	-54.844	50.860
		(0.884)	(0.631)	(0.695)	(0.770)
ZMIJ	+	-0.478	-0.287	-0.439	-0.284
		(0.172)	(0.218)	(0.217)	(0.377)
LEV	?	3.583**	1.497	4.282**	2.067
		(0.022)	(0.256)	(0.016)	(0.169)
CLEV	?	0.501	0.803**	0.603	0.990**
		(0.378)	(0.042)	(0.322)	(0.013)
LLOSS	+	0.192	-0.336	0.078	-0.535
		(0.668)	(0.426)	(0.862)	(0.266)
INVESTMENTS	-	-0.592	-2.019	0.032	-1.498
		(0.532)	(0.224)	(0.975)	(0.380)
OCF	-	-6.171***	-3.529***	-6.760***	-4.106***
		(0.003)	(0.003)	(0.000)	(0.000)
BIGN	+	0.970	0.958	0.491	0.195
		(0.444)	(0.611)	(0.672)	(0.917)
RLAG	+	0.015**	0.005	0.014*	0.003
		(0.039)	(0.474)	(0.057)	(0.685)
PRIORGC	+	3.949***	3.699***	4.182***	3.777***
		(0.000)	(0.000)	(0.000)	(0.000)
HIGHLIT	?	-1.347	-1.441**	-1.239	-1.539**
		(0.128)	(0.011)	(0.133)	(0.016)
RULE_OF_LAW	?	-0.544	-0.692	-1.082**	-0.768
		(0.422)	(0.296)	(0.026)	(0.235)
INV_PROT	?	0.042	0.036	0.041	-0.206
		(0.910)	(0.906)	(0.900)	(0.552)
lnGDP	?	-0.251	-0.390**	-0.568***	-0.724***
		(0.266)	(0.040)	(0.008)	(0.004)
GDP_PER_CAP	?	0.000*	0.000	0.000	0.000
		(0.070)	(0.222)	(0.155)	(0.736)
GDP_GROWTH	?	-0.025	-0.414*	-0.001	-0.450**
		(0.894)	(0.060)	(0.996)	(0.032)
INTERCEPT	?	3.868	11.347*	14.499*	22.850**
		(0.591)	(0.078)	(0.079)	(0.012)
Year fixed effects		YES	YES	YES	YES
N		1,690	423	1,690	423
Pseudo R^2		0.444	0.437	0.466	0.457

Table 9. Sensitivity Analysis – Alternate APD Measure

Panel A

This panel reports the results of estimating equation (7) and equation (7) with a control, LOW_APD_ALT, using the FULL sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		Dependent Variable is TOT_ACC		Dependent Variable is AB_ACC	
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**
Test variables					
ACCESS	-	-0.037***	-0.037***	-0.013	-0.013
		(0.002)	(0.002)	(0.200)	(0.212)
POST_INSPECTION	-	-0.003	-0.004	-0.014	-0.014
		(0.719)	(0.690)	(0.146)	(0.132)
INSPECTED_AUDITOR	-	0.008	0.007	0.009	0.009
		(0.326)	(0.338)	(0.241)	(0.252)
NO_OVERSIGHT	?	-0.009	-0.009	-0.012	-0.012
		(0.459)	(0.452)	(0.287)	(0.250)
ACCESS*NO_OVERSIGHT	-	0.019	0.021	0.013	0.015
		(0.170)	(0.139)	(0.310)	(0.231)
POST_INSPECTION*NO_OVERSIGHT	-	-0.005	-0.004	0.013	0.014
		(0.717)	(0.769)	(0.257)	(0.216)
INSPECTED_AUDITOR*NO_OVERSIGHT	-	-0.011	-0.011	-0.011	-0.011
		(0.316)	(0.321)	(0.253)	(0.268)
ACCESS + POST_INSPECTION	-	-0.040***	-0.041***	-0.027***	-0.027***
		(0.004)	(0.004)	(0.010)	(0.009)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	-	-0.033***	-0.033***	-0.018**	-0.019**
		(0.010)	(0.007)	(0.025)	(0.022)
SUM_ACCESS_NO_OVERSIGHT	-	-0.018	-0.016	-0.000	0.002
		(0.182)	(0.254)	(0.983)	(0.833)
SUM_POST_INSPECTION_NO_OVERSIGHT	-	-0.026*	-0.023	-0.001	0.001
		(0.063)	(0.104)	(0.915)	(0.910)
SUM_INSPECTED_AUDITOR_NO_OVERSIGHT	-	-0.030**	-0.027*	-0.004	-0.001
		(0.045)	(0.069)	(0.740)	(0.932)

Control variables

LSALES	?	0.002*	0.002	0.004**	0.003*
		(0.080)	(0.154)	(0.030)	(0.051)
CFO	-	-0.254***	-0.252***	-0.085*	-0.083*
		(0.000)	(0.000)	(0.053)	(0.060)
LEV	?	-0.087***	-0.087***	-0.050***	-0.050***
		(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	?	0.009	0.009	-0.020*	-0.020*
		(0.193)	(0.196)	(0.085)	(0.088)
ΔPPE	?	-0.042***	-0.043***	-0.057***	-0.058***
		(0.000)	(0.000)	(0.000)	(0.000)
LAG_LOSS	?	-0.033***	-0.033***	0.012**	0.013**
		(0.000)	(0.000)	(0.012)	(0.013)
INVPRO	?	0.030***	0.031***	0.012	0.013*
		(0.001)	(0.001)	(0.113)	(0.093)
LOW_APD_ALT	?		-0.005		-0.005
			(0.432)		(0.152)
INTERCEPT	?	-0.065**	-0.065**	-0.026	-0.026
		(0.029)	(0.029)	(0.191)	(0.182)
Country fixed effects		NO	NO	NO	NO
Industry fixed effects		YES	YES	YES	YES
Year fixed effects		YES	YES	YES	YES
N		2,975	2,975	2,505	2,505
R^2		0.224	0.225	0.075	0.075

Panel B

This panel reports the results of estimating equation (7) and equation (7) with a control, LOW_APD_ALT, using the PERMITTED COUNTRY sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		Dependent Variable is TOT_ACC		**Dependent Variable is AB_ACC**	
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**
Test variables					
ACCESS	-	-0.022**	-0.022***	-0.006	-0.006
		(0.010)	(0.010)	(0.647)	(0.646)
POST_INSPECTION	-	0.004	0.004	-0.012	-0.012
		(0.664)	(0.651)	(0.220)	(0.206)
INSPECTED_AUDITOR	-	0.008	0.008	0.006	0.006
		(0.305)	(0.294)	(0.392)	(0.406)
NO_OVERSIGHT	?	0.009	0.009	-0.005	-0.006
		(0.537)	(0.531)	(0.675)	(0.647)
ACCESS*NO_OVERSIGHT	-	0.011	0.011	0.012	0.013
		(0.376)	(0.408)	(0.347)	(0.315)
POST_INSPECTION*NO_OVERSIGHT	-	-0.009	-0.010	0.010	0.010
		(0.470)	(0.454)	(0.423)	(0.401)
INSPECTED_AUDITOR*NO_OVERSIGHT	-	-0.013	-0.013	-0.010	-0.010
		(0.248)	(0.243)	(0.283)	(0.291)
ACCESS + POST_INSPECTION	-	-0.018	-0.018	-0.017	-0.018
		(0.147)	(0.144)	(0.221)	(0.214)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	-	-0.009	-0.009	-0.011	-0.011
		(0.397)	(0.392)	(0.383)	(0.375)
SUM_ACCESS_NO_OVERSIGHT	-	-0.010	-0.011	0.007	0.007
		(0.433)	(0.432)	(0.587)	(0.525)
SUM_POST_INSPECTION_NO_OVERSIGHT	-	-0.016	-0.016	0.005	0.005
		(0.240)	(0.231)	(0.740)	(0.681)
SUM_INSPECTED_AUDITOR_NO_OVERSIGHT	-	-0.021	-0.021	0.001	0.002
		(0.155)	(0.149)	(0.956)	(0.878)

Control variables

LSALES	?	0.004**	0.004**	0.005***	0.005***
		(0.016)	(0.027)	(0.002)	(0.004)
CFO	-	-0.235***	-0.236***	-0.113***	-0.112***
		(0.000)	(0.000)	(0.006)	(0.007)
LEV	?	-0.088***	-0.088***	-0.049***	-0.049***
		(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	?	0.004	0.004	-0.022*	-0.022*
		(0.527)	(0.528)	(0.060)	(0.062)
ΔPPE	?	-0.055***	-0.055***	-0.046***	-0.047***
		(0.000)	(0.000)	(0.002)	(0.001)
LAG_LOSS	?	-0.032***	-0.032***	0.010**	0.010**
		(0.000)	(0.000)	(0.043)	(0.044)
INVPRO	?	0.037***	0.036***	0.018**	0.019**
		(0.000)	(0.000)	(0.022)	(0.021)
LOW_APD_ALT	?		0.001		-0.002
			(0.874)		(0.620)
INTERCEPT	?	-0.091***	-0.091***	0.002	0.002
		(0.000)	(0.000)	(0.923)	(0.908)
Country fixed effects		NO	NO	NO	NO
Industry fixed effects		YES	YES	YES	YES
Year fixed effects		YES	YES	YES	YES
N		2,558	2,558	2,177	2,177
R^2		0.218	0.218	0.075	0.075

Panel C

This panel reports the results of estimating equation (8) and equation (8) with a control, LOW_APD_ALT, using the FULL sample. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		All cos.		Distressed cos. only	
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**
Test variables					
ACCESS	+	0.274	0.293	14.648***	14.513***
		(0.668)	(0.658)	(0.000)	(0.000)
POST_INSPECTION	+	-0.516	-0.325	-13.858***	-13.478***
		(0.486)	(0.665)	(0.000)	(0.000)
INSPECTED_AUDITOR	+	-0.924	-0.856	12.147***	12.063***
		(0.111)	(0.155)	(0.000)	(0.000)
NO_OVERSIGHT	?	0.913	0.148	11.129***	11.290***
		(0.241)	(0.860)	(0.000)	(0.000)
ACCESS*NO_OVERSIGHT	+	-0.758	-0.938	-13.945***	-13.548***
		(0.516)	(0.464)	(0.000)	(0.000)
POST_INSPECTION*NO_OVERSIGHT	+	-11.226***	-11.038***	12.810***	12.082***
		(0.000)	(0.000)	(0.000)	(0.000)
INSPECTED_AUDITOR* NO_OVERSIGHT	+	12.342***	11.958***	-13.082***	-13.053***
		(0.000)	(0.000)	(0.000)	(0.000)
ACCESS + POST_INSPECTION	+	-0.242	-0.032	-0.346	0.049
		(0.732)	(0.961)	(0.662)	(0.948)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	+	-1.166**	-0.887**	-1.281*	-0.812
		(0.028)	(0.042)	(0.098)	(0.297)
SUM_ACCESS_NO_OVERSIGHT	+	-0.484	-0.645	14.648***	14.526***
		(0.615)	(0.521)	(0.000)	(0.000)
SUM_POST_INSPECTION_NO_OVERSIGHT	+	-12.226***	-12.008***	0.790	1.162
		(0.000)	(0.000)	(0.592)	(0.415)
SUM_INSPECTED_AUDITOR_NO_OVERSIGHT	+	-0.809	-0.905	12.937***	12.808***
		(0.446)	(0.413)	(0.000)	(0.000)

Control variables					
SIZE	-	-0.234	-0.250*	-0.401***	-0.391***
		(0.146)	(0.090)	(0.004)	(0.008)
lnAGE	-	-0.771**	-0.806**	-0.714**	-0.672**
		(0.022)	(0.020)	(0.030)	(0.039)
RET	-	-0.196	-0.193	-0.131	-0.132
		(0.388)	(0.396)	(0.593)	(0.597)
VAR	+	-88.433	-98.998	-98.911	-78.770
		(0.189)	(0.127)	(0.102)	(0.238)
ZMIJ	+	-0.481***	-0.487***	-0.326***	-0.318***
		(0.005)	(0.005)	(0.000)	(0.000)
LEV	?	2.367***	2.456***	2.084***	1.997***
		(0.001)	(0.001)	(0.000)	(0.000)
CLEV	?	0.709***	0.716***	0.546***	0.541***
		(0.004)	(0.005)	(0.000)	(0.000)
LLOSS	+	1.116*	1.082*	0.674	0.761
		(0.051)	(0.062)	(0.303)	(0.228)
INVESTMENTS	-	-2.524***	-2.665***	-2.650***	-2.654***
		(0.000)	(0.000)	(0.000)	(0.000)
OCF	-	-1.039	-0.940	0.602	0.556
		(0.617)	(0.651)	(0.667)	(0.697)
BIGN	+	-0.457	-0.542	-0.433	-0.366
		(0.318)	(0.202)	(0.309)	(0.426)
RLAG	+	0.010**	0.009**	0.003	0.002
		(0.011)	(0.021)	(0.486)	(0.551)
PRIORGC	+	3.447***	3.418***	3.220***	3.175***
		(0.000)	(0.000)	(0.000)	(0.000)
HIGHLIT	?	-0.654	-0.529	-0.278	-0.271
		(0.104)	(0.178)	(0.564)	(0.573)
RULE_OF_LAW	?	-0.344	-1.204*	0.335	1.097
		(0.541)	(0.053)	(0.626)	(0.149)
INV_PROT	?	0.204	0.027	0.094	0.220
		(0.301)	(0.879)	(0.625)	(0.211)
lnGDP	?	-0.403***	-0.579***	-0.478***	-0.446***
		(0.003)	(0.000)	(0.000)	(0.000)
GDP_PER_CAP	?	0.000**	0.000*	0.000	0.000
		(0.044)	(0.079)	(0.113)	(0.205)
GDP_GROWTH	?	-0.118	-0.106	-0.243	-0.301**
		(0.246)	(0.328)	(0.128)	(0.028)
LOW_APD_ALT	?		-1.629**		-5.936***
			(0.011)		(0.006)
INTERCEPT	?	9.877***	17.640***	2.788	4.778*
		(0.006)	(0.000)	(0.341)	(0.075)
Year fixed effects		YES	YES	YES	YES
N		2,369	2,369	737	737
Pseudo R^2		0.465	0.466	0.392	0.395

Panel D

This panel reports the results of estimating equation (8) and equation (8) with a control, LOW_APD_ALT, using the PERMITTED COUNTRY sample. All other variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		All cos.		Distressed cos. only	
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**
Test variables					
ACCESS	+	1.152	1.015	0.510	0.271
		(0.226)	(0.318)	(0.668)	(0.833)
POST_INSPECTION	+	0.226	0.292	-1.054	-0.850
		(0.867)	(0.831)	(0.310)	(0.387)
INSPECTED_AUDITOR	+	-0.790	-0.733	-0.960***	-0.913***
		(0.112)	(0.158)	(0.005)	(0.007)
NO_OVERSIGHT	?	1.467	0.816	-11.525***	-11.659***
		(0.168)	(0.491)	(0.000)	(0.000)
ACCESS*NO_OVERSIGHT	+	-0.675	-0.752	14.523***	13.564***
		(0.636)	(0.609)	(0.000)	(0.000)
POST_INSPECTION*NO_OVERSIGHT	+	-13.021***	-12.824***	-13.305***	-12.161***
		(0.000)	(0.000)	(0.000)	(0.000)
INSPECTED_AUDITOR* NO_OVERSIGHT	+	13.725***	13.433***	13.548***	11.997***
		(0.000)	(0.000)	(0.000)	(0.000)
ACCESS + POST_INSPECTION	+	1.379	1.307	-0.544	-0.579
		(0.447)	(0.486)	(0.695)	(0.681)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	+	0.588	0.575	-1.504	-1.492
		(0.695)	(0.711)	(0.256)	(0.255)
SUM_ACCESS_NO_OVERSIGHT	+	0.477	0.264	15.032***	13.835***
		(0.530)	(0.735)	(0.000)	(0.000)
SUM_POST_INSPECTION_NO_OVERSIGHT	+	-12.317***	-12.269***	0.674	0.825
		(0.000)	(0.000)	(0.708)	(0.622)
SUM_INSPECTED_AUDITOR_NO_OVERSIGHT	+	0.617	0.432	13.262	11.909***
		(0.664)	(0.766)	(0.000)	(0.000)

Control variables					
SIZE	-	-0.233	-0.250	-0.472***	-0.480***
		(0.224)	(0.181)	(0.007)	(0.006)
lnAGE	-	-0.643**	-0.657**	-0.526*	-0.534*
		(0.049)	(0.046)	(0.072)	(0.065)
RET	-	-0.073	-0.072	-0.055	-0.050
		(0.643)	(0.641)	(0.753)	(0.775)
VAR	+	-102.369*	-107.031*	-114.861**	-121.889**
		(0.074)	(0.058)	(0.034)	(0.032)
ZMIJ	+	-0.502***	-0.496***	-0.317***	-0.324***
		(0.004)	(0.005)	(0.001)	(0.001)
LEV	?	2.156***	2.230***	2.079***	2.116***
		(0.001)	(0.001)	(0.000)	(0.000)
CLEV	?	0.591**	0.606**	0.469***	0.478***
		(0.025)	(0.022)	(0.000)	(0.000)
LLOSS	+	1.034	1.000	0.640	0.642
		(0.115)	(0.132)	(0.372)	(0.398)
INVESTMENTS	-	-2.551***	-2.620***	-2.563***	-2.640***
		(0.000)	(0.000)	(0.000)	(0.000)
OCF	-	-0.519	-0.475	0.697	0.784
		(0.795)	(0.812)	(0.606)	(0.566)
BIGN	+	-0.553	-0.612	-0.380	-0.428
		(0.155)	(0.104)	(0.385)	(0.309)
RLAG	+	0.009**	0.009**	0.002	0.001
		(0.023)	(0.031)	(0.659)	(0.751)
PRIORGC	+	3.331***	3.320***	3.290***	3.275***
		(0.000)	(0.000)	(0.000)	(0.000)
HIGHLIT	?	-0.452	-0.386	-0.379	-0.303
		(0.227)	(0.287)	(0.421)	(0.515)
RULE_OF_LAW	?	-0.369	-0.940	0.392	-0.509
		(0.569)	(0.166)	(0.637)	(0.580)
INV_PROT	?	0.194	0.045	0.054	-0.173
		(0.350)	(0.821)	(0.802)	(0.447)
lnGDP	?	-0.438***	-0.571***	-0.379***	-0.484***
		(0.005)	(0.000)	(0.002)	(0.000)
GDP_PER_CAP	?	0.000**	0.000*	0.000	0.000
		(0.022)	(0.067)	(0.162)	(0.274)
GDP_GROWTH	?	-0.127	-0.107	-0.235	-0.227
		(0.217)	(0.322)	(0.139)	(0.213)
LOW_APD_ALT	?		-1.312*		-1.582
			(0.063)		(0.103)
INTERCEPT	?	10.729***	16.629***	11.665***	17.879***
		(0.009)	(0.000)	(0.000)	(0.001)
Year fixed effects		YES	YES	YES	YES
N		2,228	2,228	699	699
Pseudo R^2		0.462	0.465	0.400	0.402

Table 10. Accruals Sensitivity Analysis

This panel reports the results of estimating equations (1) and (2) using the FULL sample, excluding observations from China. All variables are as defined in Appendix A. For all continuous variables, I winsorize observations that fall in the top and bottom 2.5 percent. Coefficient *p*-values are two-tailed and robust to heteroscedasticity and country clustering effects using the method in Rogers (1993). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

		Dependent Variable is TOT_ACC			Dependent Variable is AB_ACC		
Variable	**Pred**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Test variables							
ACCESS	-	-0.023***	-0.000	-0.026***	-0.006	0.002	-0.004
		(0.001)	(0.991)	(0.003)	(0.458)	(0.795)	(0.648)
POST_INSPECTION	-	-0.004	-0.005	-0.012*	-0.011	-0.007	-0.017**
		(0.517)	(0.509)	(0.060)	(0.145)	(0.414)	(0.032)
INSPECTED_AUDITOR	-	0.006	0.005	0.017**	0.007	0.006	0.011
		(0.379)	(0.386)	(0.014)	(0.317)	(0.296)	(0.133)
LOW_APD	?			-0.004			0.001
				(0.718)			(0.857)
ACCESS*LOW_APD	-			0.010			-0.009
				(0.312)			(0.452)
POST_INSPECTION*LOW_APD	-			0.019			0.017*
				(0.120)			(0.086)
INSPECTED_AUDITOR*LOW_APD	-			-0.028***			-0.012
				(0.001)			(0.104)
ACCESS + POST_INSPECTION	-	-0.028***	-0.005	-0.038***	-0.017**	-0.005	-0.021*
		(0.001)	(0.710)	(0.001)	(0.043)	(0.678)	(0.052)
ACCESS + POST_INSPECTION + INSPECTED_AUDITOR	-	-0.022***	0.000	-0.021**	-0.010	0.001	-0.010
		(0.005)	(0.986)	(0.034)	(0.138)	(0.906)	(0.232)
SUM_ACCESS_LOW_APD	-			-0.016			-0.013
				(0.136)			(0.236)
SUM_POST_INSPECTION_LOW_APD	-			-0.009			-0.013
				(0.436)			(0.111)
SUM_INSPECTED_AUDITOR_LOW_APD	-			-0.021*			-0.013
				(0.054)			(0.130)

Control variables							
LSALES	?	0.003**	0.002	0.003**	0.004***	0.004**	0.004***
		(0.034)	(0.143)	(0.039)	(0.004)	(0.011)	(0.010)
CFO	-	-0.220***	-0.216***	-0.221***	-0.117***	-0.123***	-0.115***
		(0.000)	(0.000)	(0.000)	(0.002)	(0.003)	(0.004)
LEV	?	-0.086***	-0.090***	-0.086***	-0.050***	-0.048***	-0.051***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	?	0.004	0.003	0.004	-0.022*	-0.022*	-0.022*
		(0.496)	(0.626)	(0.570)	(0.060)	(0.069)	(0.059)
ΔPPE	?	-0.051***	-0.057***	-0.051***	-0.050***	-0.052***	-0.050***
		(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
LAG_LOSS	?	-0.029***	-0.028***	-0.028***	0.009*	0.009*	0.010*
		(0.000)	(0.000)	(0.000)	(0.053)	(0.062)	(0.053)
INVPRO	?	0.034***		0.034***	0.012**		0.012**
		(0.000)		(0.000)	(0.036)		(0.046)
INTERCEPT	?	-0.039*	-0.101***	-0.040**	0.004	-0.017	0.003
		(0.050)	(0.000)	(0.047)	(0.685)	(0.200)	(0.812)
Country fixed effects		NO	YES	NO	NO	YES	NO
Industry fixed effects		YES	YES	YES	YES	YES	YES
Year fixed effects		YES	YES	YES	YES	YES	YES
N		2,724	2,724	2,724	2,317	2,317	2,317
R^2		0.219	0.252	0.221	0.080	0.090	0.081