PCAOB INSPECTIONS AND AUDIT QUALITY: EVIDENCE FROM CROSS-LISTED SECURITIES

by

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ABSTRACT

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In the period leading up to the early 2000s there were a series of large company failures attributed at least in part to audit failures. Consequently, the Sarbanes Oxley Act (SOX) was promulgated in July 2002 to restore confidence in public company financial reporting and the work of auditors. The Public Company Accounting Oversight Board (PCAOB) was established by SOX and appointed as the regulator of the accounting firms that audit the financial statements of public companies. The PCAOB is required to routinely inspect the operations of these accounting firms in an effort to satisfy its mandate to bring about an improvement in the audit quality of these companies. These inspections extend to the non-US auditors of companies that are cross-listed in the US. Despite various mainly US studies on inspections, there is limited evidence that the inspections have resulted in improved audit quality.

Some governments have not permitted PCAOB inspections in their countries. The variation in the feasibility of inspections internationally provides a unique opportunity to study whether inspections have resulted in improved audit quality. The variation overcomes the problem of lack of a control sample that is encountered when examining US companies. Accordingly, I examine companies whose securities are cross-listed in the US in the periods before and after inspection in order to provide evidence on the benefits of inspections.

I find some evidence that inspections improve the audit quality of companies that are cross-listed in the US. This suggests the audit quality of companies from countries that do not permit inspections may be positively affected should inspections be permitted.

DEDICATION

I dedicate my dissertation to my parents, Leonard and Brenda, and my wife, Marcia, for their love, encouragement, and sacrifice, without which this would not be a reality.

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CHAPTER 1: INTRODUCTION

In response to a series of large company failures, attributed at least in part to audit failures, the Sarbanes Oxley Act (SOX) was promulgated in July 2002 to improve public company financial reporting quality and restore confidence in the work of auditors. The Public Company Accounting Oversight Board (PCAOB) was established by SOX as the regulator of the accounting firms that audit the financial statements of companies that issue securities on US exchanges. I use the PCAOB requirement that auditors of cross-listed companies be included in its inspection program for auditors of listed companies to provide evidence on the overall benefits of inspections. The inspection of these auditors is a major component of the PCAOB's activities; however, there has been limited research on whether audit quality has been improved as a consequence of these inspections.

The PCAOB is required to inspect the foreign auditors of cross-listed companies but these inspections are prohibited by certain countries. The PCAOB publicly states its belief that US investors in these non-US securities cross-listed on US exchanges are deprived of the benefit that investors in domestic securities are provided through the inspection of auditors of domestic companies (PCAOB 2010a). The PCAOB views inspections as important to improving audit quality and is vigorously pursuing full international inspection despite strong objection from some countries (PCAOB 2010a). PCAOB insiders are confident that audit quality has improved as a consequence of

Inspections, and call for research that would provide empirical evidence of this result (Gradison 2011).

The variation in PCAOB inspection capability internationally provides a rich setting to conduct an analysis of the importance of inspections. It overcomes the problem of lack of a control sample that is encountered when examining US companies. I consider differences in various attributes of the cross-listed companies, their country of incorporation, and their auditors to provide evidence on the benefits of inspections.

I rely on regulatory theory, and the auditor's response to incentives to develop hypotheses for the impact of inspections on audit quality. The primary mechanisms through which inspections affect audit quality are the incentives and pressures accompanying PCAOB regulatory activities. In summary, auditors are incentivized to improve the quality of their work in order to exist and avoid financial losses. They may experience reputational damage from an unfavorable inspection report, or face penalties or revocation of their licenses. In spite of these concerns, whether inspections improve audit quality remains an empirical question. The outcome depends on several factors that can be summarized as the quality of the inspection and the capability of the auditor to implement corrective action.

I develop and test three hypotheses to address my research question concerning the effect of inspections on audit quality. First, for the countries that permit inspections, audit quality will be greater in the post-inspection period compared to the pre-inspection period. Second, the audit quality of companies in countries where auditors are inspected will, subsequent to inspection, improve more relative to the audit quality of the companies from countries where auditors are not inspected. Finally, for countries that

permit inspections, the improvement in audit quality will be greater where the reporting environment was not as developed compared to the more developed environments.

I study whether inspections affect audit quality using foreign companies that are cross-listed in the United States on the New York Stock Exchange, American Stock Exchange, and National Association of Securities Dealers Automated Quotations. These are the most regulated share trading exchanges in the US and the companies and their auditors are exposed to the full supervisory powers of the PCAOB. My data cover pre- and post-inspection periods from 2003 to 2009. The periods are separated by the transition year, which, for each inspection country, is the year that the first inspection commenced. The transition year for all countries that prohibit inspections is deemed to be 2005. To be included in the sample, I require companies with data in both the pre- and post-inspection periods. I also require the auditor of the company to be located in the country in which the company is incorporated. The results of my hypothesis testing provide evidence of the association between inspections and audit quality.

I use financial reporting metrics as proxies for audit quality. Auditors are engaged as a result of the information asymmetry between the users and preparers of financial statements and the audited statements are expected to be free from material error or misstatement. Thus, financial reporting metrics are valid representations of audit quality. I use two such metrics in this study, total current accruals and accrual quality. These measures directly relate to the validity of the financial statements.

I find some evidence that inspections improve the audit quality of companies that are cross-listed in the US. My first two hypotheses are supported when the audit quality proxy is the total current accruals measure, but not accrual quality. The third hypothesis

is not supported for either audit quality proxy. However, evidence on the first two hypotheses provides primary insight into the benefit of inspections. The results therefore suggest that the audit quality of companies from countries that do not permit inspections may improve should inspections be permitted.

My study is important for a number of reasons. First, the cost of inspections is very large. Up to January 2010 these costs are estimated at over three-quarters of a billion dollars, mainly paid for by the larger listed companies (Gradison and Boster 2010). This is potentially a wealth loss to shareholders with little empirical evidence of consequential audit quality improvement. A reasonable expectation is that the cost of the extant inspection activities will not decrease given the pressure to avoid audit failures.

Second, others question the ability of the PCAOB to be effective (e.g., Glover et al. 2009) and identify the need for a fundamental change to its staffing policies to better equip the PCAOB with the experience that is required to conduct inspections effectively (Glover et al. 2009; Palmrose 2010). Such concerns are intensified in the context of inspection of foreign auditors since there is the additional knowledge requirement of international financial reporting standards, international standards on auditing, and local laws, regulations and institutions. To the extent that these concerns are widely held the market confidence in the work of the PCAOB is likely to be negatively affected. In particular, investors will not experience a positive wealth effect to compensate for the wealth loss from the cost of inspection that is borne by the companies. It would also support calls for the PCAOB to educate the public about its work (Robertson and Houston 2010).

Third, Gradison (2011) identifies the risk that countries which currently allow inspections might stop doing so if other countries continue to prevent inspections. If, as the PCAOB asserts, inspections are of value to investors in cross-listed securities, such a development is likely to be damaging to these investors unless the regulatory systems of the foreign countries are strong enough to achieve audit quality improvement without PCAOB inspections. On the other hand, a finding that inspections are beneficial could convince countries to continue to keep inspections and also increase pressure on countries not permitting inspections to change their policy.

Finally, it is noted that previous regulatory tightening resulted in the withdrawal of some foreign companies from US exchanges (Leuz et al. 2008). Arguably, such actions decrease the relative importance of the US capital market internationally. This potential negatively affects capital flows into the US if international suppliers of capital divert their funds to other exchanges that may attract 'inspection-avoiding' companies. Prior to inspections being required, changes in securities regulations often directly affected the companies. Inspections materially and directly affect the auditors, however. The question of whether inspections create value for companies is still important to these companies. At one level, should inspections demonstrably add value, a company from a country where PCAOB inspections are not permitted may be less attracted to the US exchanges due to the consequent stock price penalty that it would experience. On the other hand, if there is no demonstrable value from inspections, these companies may regard US regulation as costly. Both possibilities reduce the attractiveness of the US capital market to companies from countries that do not permit PCAOB inspections and

may encourage new and current companies to use the increasingly available and attractive stock exchanges in other countries.

Although I do not consider a cost-benefit analysis, empirical evidence of the effect of inspections on audit quality is likely to be important to regulators and other parties in shaping the evolution of regulatory mechanisms. The study determines whether and where there is benefit in the PCAOB inspecting firms internationally. Further, the variability in the sample increases the likelihood of unearthing evidence of the benefits of inspections. This is because the research design overcomes the difficulty of ascertaining effect when the sample is fairly homogenous.

The remainder of this study is organized as follows. Chapter 2 provides relevant background on inspections and the operation of global accounting firms. Chapter 3 contains a literature review of research that this is relevant to this study. In chapter 4 I develop my hypotheses. Chapter 5 outlines the research design. I discuss the construction of my sample and describe the data in chapter 6. Results are presented and discussed in chapter 7 followed by a conclusion in chapter 8.

CHAPTER 2: BACKGROUND

2.1 Inspections

With the promulgation of the Sarbanes Oxley Act ('SOX' or 'the Act') in July 2002 the PCAOB became the regulators of public company auditing profession in the US (Riley et al. 2008). The PCAOB is required to inspect these accounting firms and their audits, thus replacing the self-regulatory peer review system previously in place. The PCAOB inspection is potentially a better system primarily because of the independent nature of the inspectorate in comparison to the peer reviewers, which were often other accounting firms. There is an inherent trade-off of expertise and independence since inspectors cannot have recent ties to the accounting firms.

The Act also stipulated that the auditors of companies that are listed on US exchanges are required to be registered with the PCAOB. The requirement includes auditors of both domestic and non-US companies and also covers foreign auditors that audit the overseas portion of the business of US companies where that is significant. The peer review covered auditors of domestic companies only. The inspections of domestic auditors began in 2003 and the international inspections began in 2005.

Inspections of auditors who audit more than 100 public companies each year occur annually and the remaining auditors of public companies are inspected triennially. The main features of the inspection are (1) the risk-based selection of firms to be audited and the areas of a particular audit; (2) a top-down approach for the national office

procedures and practice office procedures for the large firms; (3) a sample of practice offices are inspected; (4) selected audit committee chairpersons are interviewed; (5) apart from facilitating their understanding the inspectors do not negotiate findings of deficiencies; (6) a private report is issued concerning findings of deficiencies in a firm's quality control, and a public report of engagement-specific deficiencies is issued, and (7) the private report is made public if the auditing firm does not ameliorate or provide plans to address the observed deficiencies within 12 months of the report (Riley et al. 2008). The same frequency policy for inspections is applied to international inspections. Some of these foreign inspections are conducted jointly with the foreign regulator or solely by PCAOB inspectors.

As of April 2010, 2,478 accounting firms were registered with the PCAOB. Of these, 938 (38%) are foreign (PCAOB-IAG 2010). Also as of that date, the PCAOB had conducted more than 1,300 inspections of accounting firms in the US and in 33 foreign jurisdictions (PCAOB 2010). Foreign companies audited by foreign auditors are significant to the US capital market, with the companies from the European Union, Norway, Switzerland, China, and Hong Kong alone having market capitalization of over $650 billion (PCAOB-IAG 2010).

The capability to expand the inspection program internationally was mixed. Some countries immediately allowed inspections, while some delayed. A few, but significant in terms of market capitalization, have not permitted inspections. The objections to US inspection can be classified as privacy law and sovereignty concerns (PCAOB 2011b). Further, since the advent of SOX, some countries have developed 'PCAOB-like' institutions and strategies and believe that there is a basis for reliance on their system.

The countries that developed or expanded the role of institutions with similar mandates to the PCAOB include Canada, the UK, the Netherlands, France, Germany, Italy, Brazil, and Japan. The UK regulators go a step further by regulating the professional bodies that train, license, and register individual qualified accountants and practice offices. The regulators from Japan, Germany, UK and Canada appear to be independent, but not so for Italy and Brazil (PCAOB-IAG 2010). At the same time the list of early international PCAOB inspections include countries with emerging reporting environments and / or more dependence on the US capital markets.

The PCAOB recently adopted measures to make inspections a condition of future registration of foreign auditors to pressure dissenting countries to allow access (PCAOB 2010b). Further, the PCAOB and UK and EU countries that withheld permission are closer to resolving their differences.[1] This was facilitated by the passing of the Dodd-Frank Act of 2010, which removed the legal barriers that previously restricted the scope of a foreign regulator's inspection of the US auditor of US based companies that are cross-listed in the foreign country (PCAOB 2011b). It is, however, still not clear whether PCAOB inspections will be routine for most EU countries or whether there will be more of a reliance on an overseas regulator's inspection with the involvement of the PCAOB in selecting particular inspections and details. Until the second quarter of 2011, China was the main standout in resisting attempts by the PCAOB to obtain permission to inspect foreign auditors. The US and China have now agreed to commence discussions to cooperate and extend the reach of inspections. Despite the ongoing efforts to undertake

[1] In the first quarter of 2011, the PCAOB, and UK and Switzerland agreed on joint inspections in their respective domains. A similar agreement was reached between the PCAOB and Germany in April, 2012.

inspections in all countries, there is significant variation in inspection reach that will facilitate this study.

2.2 Global accounting firms

The majority of the firms that audit companies whose securities are cross-listed in the US are affiliates of the Big 4 firms that operate in the US. As members of a global network the affiliated foreign audit firms are subject to internal review and other levels of supervision by their international organization. The objective of these measures is to promote the conduct of quality audits and therefore protect the reputation of the global firms. The internal reviewers from these firms may therefore have some access to audit areas that are out of scope to the PCAOB due to the prohibition of PCAOB inspections.

These affiliated foreign firms benefit from shared audit technologies and access to expertise throughout their entire network (Carson 2009). This knowledge, resource access and the fact that many also operate in jurisdictions that require compliance with international standards on auditing are positive factors for audit quality. Notwithstanding, there is variation in audit quality, at least in emerging market countries, where, for Big 4 auditors, Michas (2011) find audit quality to be higher where the audit profession is more developed.

CHAPTER 3: LITERATURE REVIEW

In this chapter I discuss research that is pertinent to my study. I begin with the relationship between regulation and auditors in order to establish the foundation for the ability of inspections to affect audit quality. This is followed by the literature on the measurement and assessment of audit quality, which provides the background for my choice of dependent variables. I then consider studies on the legal environment and the international audit environment. These illustrate the relevance of the mainly US-based audit and accounting quality research findings to the international environment and the differences in that environment that need to be incorporated in my research design. Finally, I describe the evidence on inspections and position my study.

3.1 Regulation and the auditor

A feature of the historical development of professions worldwide is a prolonged period of self-regulation. The common stance of the professions is that this is the best form of regulation. The auditing profession in the US is no different, with the profession steadfastly rejecting or adopting measures to deter independent regulation. The establishment of the American Institute of Certified Public Accountants' (AICPA) public practice division and creation of a peer review program to oversee the work of auditors, for example, is regarded as acquiescence to a growing demand for public regulators to govern auditors (Kinney, 2005).

A consideration of the economic theory of regulation, and how auditors respond to incentives is important to understanding how regulation can improve the quality of the work of auditors. Mulherin (2007) highlights two main regulatory models: the public interest theory and the special interest theory. In the public interest theory, regulation is viewed as a response to market failure with the intent of improving the public good. The special interest theory depicts regulation as being motivated by political pressure. Stigler (1971) observes that this pressure is more geared toward producer protection rather than consumer protection.

The history of auditor regulation demonstrates the operation of both theories. The creation of SOX, and its components, the PCAOB and inspections, are examples of the public interest theory at work. SOX was implemented in response to the failure of large companies that brought into question the quality of the auditors of these failed companies.

Earlier action to promote competition in the supply of audit services by removing the restrictions on solicitation of clients and fee quotations were seemingly consumer driven. The new policies resulted in an increase in audit firm size, however, fueled by the expansion in non-audit services, but the pressure on audit fees from competition negatively affected audit quality (Kinney 2005).

3.2 Auditor incentives

DeFond (2010) argues the case that the quality of the work of an auditor is directly associated with their incentives. Prior research provides insight for this view.

The Private Securities Litigation Reform Act of 1995 (PSLRA) effectively reduced auditor litigation liability by removing joint and several liability of audit partners

(Lee and Mande 2003; Muzatko et al. 2004). In response to the new legislation, underwriters of initial public offerings (IPO's), who use underpricing as a form of protection from litigation, increased the level of underpricing (Muzatko et al. 2004). According to Muzatko et al. (2004), there were two related contributing factors to their findings. First, the new limitation on auditor liability from PSLRA potentially increased underwriter's exposure by implicitly reducing the insurance previously provided by the auditing firm in the IPO. Second, there is the potential of reduced audit quality because, internally, partners would be less motivated to monitor the work of their colleagues with negative implications for the quality of the audits. Lee and Mande (2003) provide related evidence that the level of earnings management, as measured by discretionary accruals, increased in the post-PSLRA era for the clients of Big 6 auditors.

In support of her theory of superior work by larger auditors, DeAngelo (1981) points out that the larger auditors stand to lose more from poor work that would tarnish their reputation. There is also evidence of a negative market response to damage to auditor reputation. Chaney and Philipich (2002) report that, after Andersen's disclosure of shredding Enron documents, the other Andersen clients experienced statistically significant negative share price declines. They concluded that this represented a downgrade of the quality of that auditing firm's work. Lack of confidence in the auditor is not conducive to its business prospects, so auditing firms are therefore justifiably concerned about damage to their reputation.

DeFond (2010) argues that, given the PCAOB's independence and statutory power, inspections represent a potentially improved process than the AICPA peer review in achieving audit quality enhancement. This improvement is due to a number of

incentives. First, relative to the previous regime, the PCAOB is more likely to impose severe penalties on audit firms for poor work. These include financial penalties and revocation of licenses to practice. Recently, the SEC and the PCAOB imposed record penalties of $6.5 million and $1million, respectively, on a Big 4's affiliate firms in India that were involved with the failed audit of Satyam Computer Services (PCAOB 2011a). The PCAOB has also fined, censured, revoked the licenses or suspended licenses of accounting firms in the US (Gilbertson and Herron 2009). Second, there is the concern about the damage to their reputation if an inspection report reveals breaches that may cause investors to question the quality of the work of the auditor for all its clients (Firth 1990).

In order to avoid direct regulatory or market penalties, a rational auditor is expected to adopt measures to perform a quality audit (Carcello et al. 2010). Further, if deficiencies are identified, the auditor will likely modify the audit approach, adjust staff training courses and share inspection feedback with audit personnel, all in an effort to prevent future deficiencies in its work (Carcello et al. 2011b). On the other hand, absent any other factors that affect its incentive to deliver quality work, an auditing firm that is not inspected is expected to experience no change in the quality of its audits.

Overall, the previous observations indicate that auditors have incentives to produce quality work due to regulation and inspections in particular. The incremental pressure that accompanies inspections is expected to induce quality improvements for inspected firms, individually and relative to non-inspected firms.

3.3 Measurement and assessment of audit quality

Audit quality is unobservable. The only observable products of the audit are the audit report and the financial statements. Francis (2011) argues that there are multiple drivers of audit quality and presents a general framework for assessing audit quality to support his argument. The first of these components of the framework are the audit inputs which are the audit tests and the personnel that conduct the audit. Second, there are the audit processes through which the engagement personnel implement the audit tests. Third, there are the accounting firms, namely, the structure of working in teams, the policies for hiring, training and compensating staff, and the guidance provided to auditors in performing audit tests. Fourth, there is the audit industry and audit market. Audit firms constitute an industry and the structure of that industry, for example, competition, affects performance. Fifth, there are the institutions such as the state boards of accountancy and the PCAOB that license and regulate accounting firms, and the broader legal system that all together affect the quality of auditing. Finally, there are the economic consequences of the audit for the company and the external users of the audited financial statements such as cost of equity and debt capital and share pricing. Francis (2011) regards the institutions as foremost in affecting audit quality by providing incentives for quality work, and the filtering down effect of this on the collection and evaluation of evidence in the course of the audit.

Given the Francis (2011) framework for assessing audit quality, there are, not surprisingly, various definitions of audit quality (Bedard et al 2010; ICAEW 2010). These range from adherence to professional standards to producing financial statements that are free from error. The practitioner tends to view audit quality as the extent to which

there is compliance with the various standards and guidelines for the conduct of the audit. From the standpoint of academic research, a frequently used definition of audit quality is the one stated by DeAngelo (1981), which is that audit quality is the market-determined joint probability that the auditor will discover a misstatement or error and ensure correction or report the breach. The validity of the reported numbers and disclosures and the market acceptance of these products are inherent in the various definitions of audit quality. These definitions, at best, only indicate how audit quality can be measured and consequently assessed. Academic researchers mainly turn to the financial reports and their credibility to determine the proxies for measuring audit quality. There are two components of this credibility, i.e., validity of the report content and confidence in the work of those making the assertions.

A number of proxies for audit quality have been used in archival research. I now illustrate these proxies and describe how they are used to infer audit quality. Becker et al. (1998), Frankel et al (2002), Balsam et al. 2003, Carey and Simnett (2006), Chen et al. (2008), Manry et al. (2008), Francis and Yu (2009) and Reichelt and Wang (2010) use abnormal (or discretionary) accruals or abnormal working capital accruals. These accruals provide the means for management to report earnings that do not reflect the true performance of the company. Thus, higher (lower) amounts of these accruals are regarded as evidence of lower (greater) quality audit.

Other proxies that pertain to the quality of the financial reports are litigation rates (Palmrose 1988); the number of inspection deficiencies in a review of public audits (Deis and Giroux 1992); the incidence of fraud as evidenced by accounting and auditing enforcement releases (Carcello and Nagy 2004); the incidence of restatements (Kinney et

al. 2004); and the propensity to issue going concern opinions for distressed companies (DeFond et al. 2002, Carey and Simnett 2006 and Francis and Yu 2009). The audit quality implications of these proxies are as follows. First, parties are more likely to pursue litigation against auditors when they consider the quality of the auditor's work to be low. Hence, a higher (lower) incidence of litigation is deemed to be evidence of lower (greater) quality audits. Second, the deficiencies that are identified by an independent reviewer represent evidence of the quality of the audit being reviewed. Audit quality is therefore deemed to be lower (greater) the higher (lower) the incidence of reported deficiencies. Third, the incidence of fraudulent reporting and restatements is evidence of audit quality in a similar manner to reported deficiencies. Their occurrence is proof of deficient work. Fourth, if the auditor issues the incorrect opinion, it is an indication of a lower quality audit. As it relates to going concern opinions, audit quality is assessed as the propensity for the auditor to issue a going concern opinion for financially distressed companies appropriately. Appropriateness is based on the issue of a going concern opinion for a distressed company that goes out of business within the next fiscal year. Hence, audit quality is deemed to be lower (greater) the lower (greater) the propensity to issue the appropriate opinion.

Meeting or beating analyst forecasts is the proxy for Frankel et al (2002), Carey and Simnett (2006), Davis et al. (2009) and Francis and Yu (2009). Companies are under pressure to meet analyst expectations. The observation is that there is greater than expected incidence of companies just meeting or beating earnings forecasts and this is regarded as evidence of manipulated earnings. Hence, a higher (lower) propensity for companies to just meet or beat earnings forecasts is deemed to be evidence of lower

(greater) audit quality. Behn et al. (2008) consider analyst earnings forecast properties, i.e., accuracy and dispersion. These properties reveal the credibility of the financial reports. The forecasting process is enhanced the more historical earnings are free from error. This should result in greater accuracy and more similar forecasts amongst analysts. Audits are designed to detect and prevent material error in financial statements. Thus, the more (lesser) the accuracy of forecasts and the lower (greater) the forecast dispersion, the greater (lower) audit quality is deemed.

Teoh and Wong (1993), and Ghosh and Moon (2005) use earnings response coefficients (ERC) as an indicator of the degree of investor acceptance of the financial reports. If investors are confident in the reports, earnings surprises should be quickly reflected in prices, contingent on the surprise being good or bad. The ERC is a measure of this response and a greater (lower) value reflects greater (lower) confidence in the reported numbers and is therefore evidence of greater (lower) quality audit.

Having identified the proxies, researchers then study the relation between the auditor and these proxies in order to opine on how the auditor characteristics affect audit quality. They consider various attributes of the auditor including size, independence, expertise, and tenure of the audit firm or partner. Whether the firm is a Big N firm is the most common proxy for the auditor as, given their size and resources and relatively greater concern for reputation, these firms generally possess attributes that are positively related to audit quality. Some findings concerning the connection between auditor and audit quality follow.

Big N, or larger auditors, arguably conduct higher quality audits than smaller auditors for a number of reasons. First, Big N auditors constrain the use of discretionary

accruals to manipulate earnings. Their clients have lower discretionary accruals than the clients of non-Big N auditors (Becker et al. 1998, Francis et al. 1999). Second, the litigation rate for Big N auditors is lower than that of non-Big N auditors (Palmrose 1988). This signals greater audit quality for the Big N auditors. Third, Deis and Guiroux (1992) find that larger auditors, measured by the number of clients, experience a lower incidence of inspection deficiencies than the smaller auditors. Fourth, Behn et al. (2008) find that there is greater analysts' earnings forecast accuracy and lower forecast dispersion for the clients of Big N auditors compared to those of non-Big N auditors not just meeting or beating analyst forecasts. Fifth, the earnings response coefficients are greater for the clients of Big N auditors than the clients of non-Big N auditors (Teoh and Wong 1993). There is also evidence that larger offices of Big N auditors conduct higher quality audits relative to their smaller offices. In a study of only Big N auditors, Francis and Yu (2009) find lower abnormal accruals, lower propensity to report earnings that just meet or beat earnings forecasts, and greater propensity to issue going concern reports for the clients and audits of the larger offices compared to the smaller offices.

The research on auditor independence finds that audit quality is not affected by the independence of the auditor. First, Frankel et al. (2002) find that the level of discretionary accruals or the propensity for clients to just meet or beat earnings forecasts are not related to the independence of the auditor. Second, Kinney et al. (2004) find that restatements are not related to the independence of the auditor. Third, DeFond et al. (2002) find no relation between auditor independence and the propensity to issue going concern opinions for financially distressed companies

Due to their expertise, auditors who are specialized in a particular industry conduct higher quality audits. First, Balsam et al. (2003) find that the clients of industry-specialist auditors have lower discretionary accruals and higher ERCs than clients of non-specialist auditors. Second, reflecting an even greater effect on audit quality, there is evidence that auditors who are both national and city-specific industry specialists have clients with the lowest abnormal accruals (Reichelt and Wang 2010).

A lengthy association between auditor and client is a potential threat to audit quality due to familiarity but there is also the concern that too short an association will reduce audit quality because of a knowledge gap. Prior research provides evidence that lengthy tenure is not inimical to audit quality whereas shorter tenure reduces audit quality. Fraudulent financial reporting is more likely in the first three years in comparison to tenure of four to eight years (Carcello and Nagy 2004) and absolute and positive values of discretionary accruals decrease significantly with audit firm as well as partner tenure (Chen and Lin 2008). Investors perceive auditor tenure as improving audit quality (Ghosh and Moon 2005). Audit firm tenure was positively associated with the propensity of a company to meet or beat the analyst forecast, only because of the use of positive discretionary accruals (Davis et al. 2009).

The above-mentioned audit quality proxies reflect a binary or continuum view of audit quality (Francis 2011). In the binary view, which includes issuance of the incorrect report, litigation, restatements or SEC enforcement action, audit quality is either 'good' or 'bad'. The incidence of these occurrences are typically low and may not be representative of the population, however, or be otherwise misleading (Francis 2011). The misleading conclusion is that many 'bad' audits may not be discovered, for example,

due to resource constraints on the part of the regulators or settlements between contesting parties prior to court action (Francis, 2004; 2011). In contrast, under the continuum view, audit quality is considered in terms of a degree. The continuum proxies include the ones that are based on the properties of the reported numbers and the market's assimilation of the audited financial statements. Unlike the binary proxies, these are not dichotomous measures of audit quality, and they have the potential for a better understanding of audit quality by not restricting the assessment to the extremes (Francis 2011). Furthermore, providing absolute assurance is not the objective of audits (ICAEW 2010). I therefore adopt the continuum view of audit quality proxies in the research design that is addressed in a later chapter.

3.4 Legal environment and the international audit environment

This section presents the literature that addresses the subject of the variation in the properties of accounting earnings across countries globally. This is followed by evidence on the results of the interaction between auditors and companies with these varying properties.

The demand for accounting income varies according to the nature of the legal system, i.e., common or code (civil) law. Ball et al. (2000) show that the different legal systems can cause variation in the properties of accounting earnings. They use timeliness and conservatism of earnings to show that financial reporting quality in common law countries is higher than in code law countries.

A country's legal protection has also been linked to the development of equity markets through the level of investor protection, which is greater in common law countries. Leuz et al. (2003) find that earnings management decreases in investor

protection and DeFond et al. (2007) find that where there is strong investor protection, annual earnings announcements are more informative. Hence, the equity market in common law countries plays a greater role in providing capital in contrast to civil law countries where the banking sector is more dominant in providing capital (LaPorta et al. 1997; Levine 1997). The demand for accounting and disclosure is therefore greater in common law countries due to the importance of the equity markets. In civil law countries where the banking sector dominates the demand is less since the banks are more like insiders with direct access to information about the companies (Ball et al. 2000).

The same environmental factors that affect the properties of earnings in cross-country analyses extend to cross-listed companies in the US (Habib 2007). This is the case although there is evidence that the financial reporting quality of companies that are cross-listed in the US is greater than that of their domestic counterparts that are not cross-listed. Lang et al (2003a) find an improved information environment for these cross-listed companies. Compared to the companies that are not cross-listed they have greater analyst coverage and increased forecast accuracy. Lang et al. (2003b, 363) find that cross-listed companies "appear to be less aggressive in terms of earnings management and report accounting data that are more conservative, take account of bad news in a more timely manner, and are more strongly associated with share price", in comparison to the companies that are not cross-listed. Huijgen and Lubberink (2005) compare UK companies that are cross-listed on US exchanges with ones that are not cross-listed and report a similar finding: the earnings of the former are more conservative than the earnings of the latter. These studies attribute the differential quality for the cross-listed companies to the exposure to tighter SEC regulation on being cross-listed.

Notwithstanding the superiority of the earnings quality of the cross-listed companies that was described in the preceding paragraph, differences in the domicile of the companies are still relevant in explaining variation in the earnings properties of the companies from various domiciles that are cross-listed in the US. Kang (2003) compare the value relevance of financial reporting of companies from the UK and Japan that are cross-listed in the US. He finds the UK companies to be more value relevant and attributes this to differences in the legal regime. Lang et al. (2006) provide evidence that the securities from countries with weaker investment protection had more earnings management. This leads them to conclude that exposure to SEC regulation does not fully mitigate the effect of a weak local environment.

Turning to the audit environment, Choi and Wong (2007) examine two competing governance roles of auditors in weak legal environments. The first is that auditors will play a strong governance role and protect minority interests and the second is that the auditors will acquiesce to the wishes of controlling parties since the threat of censure is lower in a weaker legal environment. They use Big 4 as a proxy for a quality auditor and find support for the strong governance role in weaker legal environments through the greater likelihood of the hiring of a Big 4 auditor by both debt- and equity-issuing companies. These companies are signaling the quality of their financial reporting. A similar finding was reported by Fan and Wong (2005) in East Asian countries, where companies with controlling owners hire Big 4 auditors.

Francis and Wang (2008) study whether the role of Big 4 auditors in constraining earnings management in the US is also present in international settings. They use abnormal accruals and timeliness of loss recognition as proxies for earnings quality, and

find the earnings quality clients of Big 4 auditors to be increasing in investor protection. In contrast, the earnings quality of clients of non-Big 4 auditors is invariant to investor protection. Internationally, there is also evidence that the clients of industry-specialist auditors have lower discretionary current accruals and greater ERCs than the clients of non-specialist auditors (Kwon et al. 2007).

These findings are important for this study because they demonstrate that auditors play a governance role internationally. To the extent that inspections regulate auditors effectively, audit quality can be improved, and this should be evident in the improved accounting and earnings quality of clients.

3.5 Inspection research

The following section illustrates the research on PCAOB inspections in the US that is pertinent to the issue of the impact of inspections on audit quality.

Lennox and Pitman (2010) considered the informational value of inspections by examining whether unfavorable inspection reports were associated with auditor dismissals or whether favorable inspection reports influence selection of auditors. In comparing inspections to peer reviews they find that inspections were not associated with these decisions and conclude that they were of no value to audit clients. They suggest that the lack of an opinion in the reports and non-disclosure of the firms' quality control problems are reasons for these findings. DeFond (2010) suggests that an additional reason is that the deficiencies reported in the inspection report are not representative of the inspected firms due to the nature of the specification of the scope of the inspection.

In contrast to the Lennox and Pitman (2010) study of all firms, other studies of triennial inspections associated audit firm turnover with SOX and inspections. Daugherty

et al. (2011) and Abbott et al. (2011) find that triennially inspected firms experience client loss after unfavorable inspection reports. Additionally, the clients tend to hire other triennial firms that did not have an unfavorable inspection report. These findings should be considered against the background that the PCAOB appeared to target faster growing small firms in the earlier inspections and that the clients of the deficient firms were smaller, less profitable, and highly leveraged (Hermanson et al. 2007). Further, there is some indication that some triennial firms withdrew from or reduced their involvement in the public client audit market (Daugherty and Tervo 2010). Given the results of actual inspections, DeFond and Lennox (2011) also report that SOX incentivized low-quality auditors to leave the market, where low quality was characterized by severe peer review and inspection reports, avoidance of peer reviews, or failure to comply with PCAOB rules.

The inspections program has impacted going-concern opinions by triennially inspected firms. Gramling et al. (2011) find that firms with inspection deficiencies are subsequently more likely to issue going-concern opinions for financially distressed clients. DeFond and Lennox (2011) find that 'triennial' clients are more likely to receive going-concern opinions from successor firms.

Gunny and Zhang (2009) also compared inspections and peer reviews but focused on the association between the seriousness of the reported deficiency and audit quality metrics such as accruals and propensity to restate. Their results indicated that the clients of auditors with serious 'inspection reported' deficiencies tended to have "increasing current accruals and have higher propensity to restate". On the other hand there was no association for peer reviews. Carcello et al. (2011b) found that Big 4 audit quality, using

abnormal accruals, improved since inspections and the improvement was sustained. Their results are sensitive however, to how accruals are measured and as stated by the authors, the design is limited by the absence of a control sample. In additional tests, they found that triennial firms were not as effective in constraining accruals. They were unable to statistically demonstrate differences in effectiveness between Big 4 and the triennially inspected firms however. The study is also silent on the status of non-Big 4 annually inspected firms in constraining accruals.

Robertson and Houston (2010) conducted a between-subjects experiment concerning investors' perceptions of audit opinion credibility following PCAOB inspections. They find an overall increase in perceptions of the credibility of future opinions and that the degree of the perceptions is influenced by the severity of the deficiencies, the tone (conceding or denial) of the auditing firm's response and the size of the auditing firm. Tone mediated the perception of future report credibility and consequently the authors recommended that firms should carefully consider the nature of their response and that the PCAOB educate investors about its work.

Carcello et al. (2011a) use stock market reactions of clients of accounting firms to investigate the effect of the PCAOB's inability to inspect some foreign firms. They find a significant negative market reaction to the PCAOB's disclosures of accounting firms that they are barred from inspecting. Further, relative to other cross-listed companies, there was a more positive reaction for UK cross-listed companies to the January 2011 news that the restriction on the inspection of UK firms was revoked. These market reactions, taken together, indicate that investors value inspections.

3.6 Summary of prior research

It is evident from the preceding paragraphs that there is not only limited direct empirical evidence that audit quality has improved as a consequence of inspections but research is silent on the impact of inspections on cross-listed securities. The purpose of my research is to fill this gap.

The research findings that were presented in this chapter relate to my study as follows. First, it establishes that regulators can positively affect audit quality. Second, audit quality can be assessed by examining the relation between the auditor and financial reporting quality. Third, the differences in legal and overall reporting environment of the domicile of cross-listed companies are important in explaining the variation in the accounting properties of these companies. Fourth, auditors from the domicile of the cross-listed companies do affect the financial reporting quality of these companies, lending support to the expectation of benefits that can accrue from inspections. Finally, there is need for research that provides evidence of whether the policy of inspections has achieved the goal of improving audit quality.

CHAPTER 4: DEVELOPMENT OF HYPOTHESES

In this chapter I develop and state my hypotheses, which have their origin in the use of auditors to reduce agency costs, and the role of regulators in improving the performance of the auditors. Auditors play an important role in the process that generates financial statements. The quality of the auditors' work and thus the resulting financial statements are affected by inspections.

A company represents a series of contractual arrangements between parties, for example, management and shareholders and the controlling shareholders and lenders or other suppliers of equity capital (Jensen and Meckling 1976). An inherent feature of these contracts is information asymmetry, which creates agency costs. The parties are assumed to act in their self-interest. Typically, one party to the contract has knowledge of the true state of affairs and is usually in a position to influence the production of the reports that signal their performance. In a performance contract, management has an incentive to alter the performance reports in order to influence the size of their bonus payments. In a financing contract, the shareholders or their representatives, management, have an incentive to report better-than-actual performance or condition in order to obtain the most favorable terms from lenders and equity capital providers.

Absent means to reduce information asymmetry, the parties that do not know the true state of affairs will price protect themselves. Thus, in the performance contract, management would receive lower benefits to compensate for the unknown and for expectations that they may shirk or consume benefits to which they are not entitled. In the financing contract, the interest rate and the share price will be higher and lower, respectively, in order to compensate for the agency costs.

Auditors are employed to reduce the agency costs of information asymmetry between parties that make up the company (Chow 1982, and Watts and Zimmerman 1986). My study is concerned with the contract that involves the provision of equity capital. I posit that changes in regulation affect the quality of the audit.

Auditors have incentives to perform quality audits (DeFond 2010). Specifically, pressures will cause accounting firms to improve the quality of their work in order to avoid penalties imposed by regulators or the market. Regulation and inspection, in particular, produce strong incentives for the auditors to perform quality audits (DeFond 2010). First, there is the reputational loss that can result from the receipt of an inspection report with deficiencies. Second, there is the possibility of financial penalties, censure, or revocation of licenses, dependent on the severity of identified deficiencies or lack of action to remediate the deficiencies. Third, there is the opportunity to improve the quality of their work based on the interaction with the inspectors.

In order to prevent an unfavorable inspection report and the consequent penalties, a rational auditor is expected to adopt measures to achieve a quality audit (Carcello et al.

2011b).[2] Further, if deficiencies are identified, the auditor will likely modify the audit approach, adjust staff training courses, and share inspection feedback with audit personnel, all in an effort to prevent future deficiencies in their work (Carcello et al. 2011b). On the other hand, absent any other factor that affects their incentive to deliver quality work, an auditing firm that is not inspected is expected to experience no change in the quality of their audits. The countries in my sample fall into two categories, those that permit inspections, and those that do not permit inspections. The auditors from the countries that permit inspections experience a change in the nature of their oversight, while the auditors from the other category experience no change in their oversight.

If inspections have a positive effect on the work of auditors then there should be a qualitative improvement in audit quality. Thus, I posit that the quality of the audits of a company whose auditor is inspected should be greater in the period after the inspection compared to the period when there was no inspection. My first hypothesis, stated in the alternative, is:

H1: Audit quality of cross-listed companies whose auditors are inspected is greater after the inspection compared to the period before the inspection.

The first hypothesis is concerned with the change in audit quality in the inspection countries. Inspections should also alter the difference in audit quality between the inspection and non-inspection countries. In the period prior to inspections, the audit quality of the companies whose auditors are eventually inspected may be lower, equivalent to, or greater than that of the companies whose auditors are not inspected. If inspections have the desired effect of improving audit quality in the inspection countries,

[2] It is not assumed that auditors were not motivated to achieve a quality audit prior to inspections. The new oversight mechanism represents incremental pressure that encourages auditors to intensify their effort to reduce the likelihood of audit failures.

there should also be an improvement in the relative audit quality gap between these two groups of companies in the post-inspection period compared to the pre-inspection period. As an example, if the audit quality of the companies whose auditors are never inspected was initially greater than the audit quality of the companies that are eventually inspected, following inspections the gap should either be narrowed or eliminated.

I therefore posit that in the post-inspection period, the audit quality of companies whose auditors are inspected has improved more relative to that of companies whose auditors are not subject to inspections. My second hypothesis stated in the alternative is:

H2: The change in audit quality from the pre- to the post-inspection period for cross-listed companies whose auditors are inspected is greater compared to firms whose auditors are not inspected.

Countries vary in the nature of their legal and information environments, which ultimately affects the properties of financial reports (Ball et al. 2000). In countries of common law origin and stronger investor protection, the equity markets tend to be more developed and also the dominant source of finance (LaPorta et al. 1997, 1998; Levine 1997). Prior research find rule of law and investor protection to be associated with audit quality (Leuz et al. 2003; Francis et al. 2011). Ball et al. (2000) find accounting information to be of higher quality in common law countries compared to code law countries. The information content of accounting earnings is increasing in the strength of insider trading laws (DeFond et al. 2007). In summary, the financial reporting environment is strongest in common law and strong investor protection countries. Auditors are part of this environment given their role of reducing the agency conflict between the operators of the company and the external providers of capital.

The inspection program is being extended to countries with financial reporting environments of diverse quality. The implication of this variation is that there is greater scope for improvement the lower the pre-inspection quality of the financial reporting environment. In other words, if inspections improve audit quality, the degree of improvement will be inversely related to the pre-inspection quality of the financial reporting environment. My third hypothesis, stated in the alternative, is:

> H3: The change in audit quality from the pre- to the post-inspection period for cross-listed companies, whose auditors are inspected, is greater for those in lesser developed reporting environments compared to those in more developed reporting environments.

CHAPTER 5: RESEARCH DESIGN

In this chapter I outline the main procedures that will be used to test my hypotheses. I start with a discussion and development of the audit quality measures followed by a presentation of my testing model. I then discuss the explanatory variables and the required support for my hypotheses to provide evidence on the effect of inspections on audit quality.

5.1 Proxies for audit quality

Auditors are engaged because of the information asymmetry between the users and preparers of financial statements. The audited statements are expected to be free from material error or misstatement. Thus, financial reporting metrics are likely indicators of audit quality. Francis (2004) observes that prior research find that audit quality and financial reporting quality are positively associated. I therefore consider financial reporting metrics as proxies for audit quality and use two such metrics.

Prior research has used total accruals to measure audit quality, e.g., Frankel et al. (2002), and Michas (2011). This is because it is a proxy for the excessive use of accruals to manipulate earnings (Dechow et al. 2011). Total accruals is therefore a relevant proxy for the quality of reported earnings. Dechow et al. (2011) find total accruals to be more powerful than discretionary accruals in predicting earnings management in cases of misstatements that resulted in SEC enforcement releases. I however, use total current accruals (TCA) as my first proxy for audit quality, because it captures opaque accruals

that affect net income.[3] It is derived by the following equation, and scaled by average total assets.

$$TCA = \Delta CA - \Delta Cash - (\Delta CL - \Delta STDebt) \quad (1)$$

The variables in the above equation are defined as follows:

TCA	=	Total current accruals
ΔCA	=	is the change in current assets
ΔCash	=	the change in cash and cash equivalents
ΔCL	=	the change in current liabilities
ΔSTDebt	=	the change in short-term debt

Lower values of *TCA* imply a lower likelihood of earnings management, and therefore higher audit quality.

My second proxy is a measure of accrual quality (ACQ) that relates accruals and cash flows. The role of accruals in financial reporting is to shift the recognition of cash flows to the periods in which they are earned or incurred and thereby produce an earnings figure that is a better measure of contemporaneous company performance than actual cash flow (Dechow and Dichev 2002). Financial reporting quality is therefore associated with accrual quality. Ashbaugh-Skaife et al. (2008) find accrual quality to be low for companies with internal control weaknesses. Further, they find that accrual quality improves for companies that remediate internal control deficiencies relative to companies that do not remediate the deficiencies.

[3] Dechow et al. 2011 note that depreciation accruals are transparent because of the disclosures that are required. Accrual measures such as TCA, exclude depreciation, and more closely match the accruals that are opaque in their use to manipulate earnings. In sensitivity tests I use a more comprehensive measure of accruals that includes depreciation.

A variety of accrual quality measures are used in research on earnings management. The category I apply generally use either the residuals or the standard deviation of residuals from regressing the change in working capital accruals on lagged, current, and future cash flows (e.g., Dechow and Dichev (2002), Ashbaugh-Skaife et al. 2008, and Kim and Qi 2010). The reasoning is that a company may use accruals to manipulate income. If accruals genuinely reflect the underlying economic performance however, they should be strongly related to cash flows. Thus, in the regression models, the estimation errors capture the reliability of the company's accrual process and its earnings quality (Dechow and Dichev 2002). Lower errors represent greater quality earnings and higher audit quality.

In order to measure ACQ I use the following model from Dechow and Dichev (2002) and incorporate the modifications suggested by McNichols (2002).

$$TCA_{i,t} = \alpha_o + \alpha_1 OCF_{i,t-1} + \alpha_2 OCF_{i,t} + \alpha_3 OCF_{i,t+1} + \alpha_4 \Delta Rev_{i,t} + \alpha_5 PPE_{i,t} + \varepsilon_{i,t} \quad (2)$$

The variables in the above model are defined as follows:

TCA	=	as measured in equation (1)
OCF	=	operating cash flow from the statement of cash flows
ΔRev	=	change in revenue
PPE	=	the gross value of property, plant and equipment

All variables are scaled by average total assets.

Operationally, I follow Francis et al. (2005) and Ghosh and Moon (2010) and annually estimate equation (2) for each of the 48 Fama-French industry groups with at least 20 observations for each year. I include cross-listed and US companies that are

listed on NYSE, AMEX and NASDAQ in order to obtain sufficient observations.[4] The error term measures the error in the accrual estimation process, whether due to intentional manipulation or accounting error (Dechow and Dichev 2002). Following Srinidhi and Gul (2007), and given my study's short longitudinal time frame, I measure *ACQ* by taking the absolute value of the residuals in equation (2) because convergence of positive or negative residuals to zero indicates a more reliable accrual process. Since the auditors work is to detect and ensure the correction of material error, whether due to fraud or misstatement, *ACQ* is a proxy for audit quality, with lower (greater) values indicating higher (lower) audit quality.

5.2 Regression Model

In order to examine my hypotheses and incorporate the effect of other variables that account for variation in the dependent variables I employ regression models, which are adapted from Bailey et al. (2006) and Li (2010). The base model for my study is as follows.

$$\begin{aligned} AQ_{i,t} = {} & \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \\ & \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG\_4_{it} \\ & + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \\ & \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \\ & \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \varepsilon_{i,t} \end{aligned} \quad \textbf{(3)}$$

The variables not previously defined are defined as follows:

[4] The financial reporting quality of cross-listed companies are greater than their domestic counterparts that are not cross-listed (Lang et al. 2003a). This indicates that cross-listed companies are more similar to US companies and including both US and the cross-listed companies in the same estimation process is reasonable.

AQ	=	audit quality measured as either total current accruals or accrual quality as discussed above,
PRE_INS	=	1 if the observation falls in the pre-inspection period and the country permits inspections, and 0 otherwise,.
POS_INS	=	1 if the observation falls in the post-inspection period and the country permits inspections, and 0 otherwise,
POS_NON	=	1 if the observation falls in the post-inspection period and the country does not permit inspections, and 0 otherwise,
SIZE	=	the natural logarithm of the total assets of the company at fiscal year-end,
LEV	=	total liabilities divided by total assets,
LOSS	=	1 if income before extraordinary items is negative, and 0 otherwise,
GROWTH	=	the one-year growth in sales,
ISSUE	=	1 if the company issued new equity or debt capital in the current fiscal year, and 0 otherwise,
TENURE	=	the natural logarithm of the number of years since 2000 that the accounting firm is the auditor of the company.
BIG_4	=	1 if the auditor is an affiliate member of PricewaterhouseCoopers, KPMG, Deloitte, or Ernst and Young, and 0 otherwise,
FIRM_QC	=	1 if the audit firm is an international firm and undergoes internal reviews, and 0 otherwise,
DREG	=	1 if the domestic accounting firm regulator is similar to the PCAOB in scope and independence according to the classification in PCAOB-IAG (2010), and 0 otherwise,

LAW	=	1 if the domicile's legal system is based on common law, and 0 if it is based on code or civil law,
LEGAL_ENFORCE	=	the value of the legal enforcement index as reported in Leuz et al. 2003,
GDP	=	the natural logarithm of gross domestic product in US dollars of the domicile per the World Bank,
ENG_QC_DEFIC	=	1 if the inspection report reveals one or more engagement quality control deficiencies, and 0 otherwise
FIRM_QC_DEFIC	=	1 if the inspection report reveals one or more firm quality control deficiencies, and 0 otherwise
TRIEN	=	1 if the inspection is one that is conducted every three years, and 0 otherwise,
REPEAT	=	1 if the inspection is not the first for the particular auditor, and 0 otherwise,
SOLE	=	1 if the inspection is conducted by the PCAOB inspectors, and 0 if the inspection is conducted jointly with regulators from the company's home country,
NMBR	=	The natural logarithm of the number of company observations from a given country each year.

I multiply each dependent variable by minus 1 in order that increasing values correspond to greater audit quality. The test variables are *PRE_INS, POS_NON* and *POS_INSP*. I use the commencement date for the first inspection in a country to determine the pre- and post- inspection periods for each country where there are inspections. I treat the year in which that first date falls as the transition year and exclude financial statements for that year from my sample. The pre- and post- inspection periods are years before and after the transition year. I limit the earliest year covered to 2003 in

order to maintain comparability. For the non-inspection countries I define the transition year as 2005, the first transition year of all the inspected countries.[5] I then use that transition year to determine the pre- and post-inspections periods in a similar manner to the inspected countries. In sensitivity analyses I consider other definitions of the pre- and post-inspection periods.[6]

The testing of H1 and H2 requires an assessment of combinations of the test variables. These requirements are detailed in Figure 1. H1 is a test to determine if audit quality is greater after inspections than before inspections for the companies whose auditors are inspected. It is supported if the coefficient of POS_INS is greater than that for PRE_INS, i.e., $\beta_3 > \beta_1$. H2 focuses on the change in audit quality between companies from countries that allow inspections compared to those that do not. H2 is supported if the coefficients of POS_INS minus POS_NON is greater than that of PRE_INS, i.e., $\beta_3 - \beta_2 > \beta_1$..

SIZE, *OCF*, *LEV*, *LOSS*, *GROWTH*, and *ISSUE* represent company characteristics that are commonly used in prior research as determinants of accrual quality. The companies in my sample differ greatly in their size and I include *SIZE* as a proxy for potentially omitted variables (Becker et al. 1998). Hence, I make no prediction for the relationship between *SIZE* and audit quality. Dechow (2002) finds that operating cash flow and financial reporting quality are negatively related and thus I predict a similar negative relation between *OCF* and audit quality. According to positive accounting theory, debt covenants create incentives to manage earnings in order to comply with the

[5] See Table 2 for a list of the transition years for each country.
[6] These alternate definitions can also determine if there is any learning curve effects given the long period over which foreign inspections were implemented.

covenants (Watts and Zimmerman 1986). *LEV* is a control for this propensity and I predict a negative relation between *LEV* and audit quality. *LOSS* is a proxy for companies that are performing poorly. These companies may be less inclined to manage earnings compared to profitable companies (Francis and Yu 2009). I predict a positive relation between *LOSS* and audit quality. Accruals are inherently larger for growing companies and Menon and Williams (2004) find a positive association between sales growth and accruals. I predict a negative relation between *GROWTH* and audit quality. Finally, a company that issues new equity or debt capital has an incentive to manipulate earnings. *ISSUE* is a control for this and I predict a negative relation between ISSUE and audit quality.

TENURE is a control for the number of years that the particular accounting firm is the auditor of the company. Because of mixed findings in prior research I do not predict the relation between this variable and audit quality. *BIG_4* is a control for the type of audit firm, given, the superior quality of these firms. *FIRM_QC* controls for the audit firm's exposure to internal peer review. I predict a positive relation for both variables and audit quality.

DREG controls for the effect of the domestic regulatory agency on audit quality. It represents a regulator that is similar to the PCAOB. Legal origin and the quality of enforcement of laws influence the incentives applicable to the preparation and audit of financial statements and are important in explaining variation in the market performance of securities from different countries (Doidge et al. 2004 and DeFond et al. 2007). *LAW* and *LEGAL_ENFORCE* reflect these two dimensions. In this study these two variables along with *GDP* and DREG characterize the quality of the reporting environment for the

domicile of the cross-listed securities. Higher values of each of these variables denote a more developed environment. I predict a positive relation between each of these variables and audit quality.

ENG_QC_DEFIC and *FIRM_QC_DEFIC* are controls for the whether or not the report is adverse. An adverse report is an indicator that audit quality is low and I predict a negative relation between these variables and audit quality. *TRIEN* is a control for the frequency of inspections and any differences between annual and triennial inspections. The effect of *TRIEN* on audit quality is unknown and therefore I do not make any prediction for the relation. *REPEAT* is a control for the fact that an auditor may have more than one inspection in my sample period and be more experienced in preparing and responding to the inspectors. This may be advantageous compared to a first time inspection. I predict a positive relation between *REPEAT* and audit quality. Given the prospect of quality differences, *SOLE* is included to control for whether the inspection is conducted solely by the PCAOB or it is a joint activity with the foreign regulator. PCAOB-IAG (2010) note independence concerns as well as suspect inspection work by some foreign regulators. Due to this variation, I do not predict the relation between *SOLE* and audit quality.

The number of observations per year from a country ranges from one to eight. *NMBR* is a control to address this unbalanced representation, and no relationship between *NMBR* and audit quality is predicted.

In order to test H3 I expand equation (3) as follows to include interactions between PRE_INS, POS_NON, and POS_INS, and the reporting environment variables, *DREG*, *LAW*, *LGL_ENFORCE*, and *GDP*.

$$AQ_{i,t} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG\_4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \beta_{23}\ PRE\_INS*Env_{i,t} + \beta_{24} POS\_NON*Env_{i,t} + \beta_{25} POS\_INS*Env_{i,t} + \varepsilon_{i,t} \quad \textbf{(4)}$$

Env is one of *DREG*, *LAW*, *LGL_ENFORCE*, or *GDP*. All other variables are as previously defined. Higher values of DREG, *LAW*, *LEGAL_ENFORCE* and *GDP* characterize environments that are more developed. H3 posits that audit quality is relatively more improved in lower developed environments. In the inspection countries, the change in audit quality that is due to the environment variable is equivalent to the difference between the coefficients of the POS_INS and the PRE_INS interactions. H3 is therefore supported if β_{25} is significantly less than β_{23}.

CHAPTER 6: SAMPLE AND DESCRIPTIVE STATISTICS

In this chapter I outline the derivation of my sample, provide further information to understand the data, and present descriptive statistics on the data.

6.1 Sample

The first foreign inspection was for 2005, and my sample period starts two years before to reduce the effect of contaminating events. The sample period is 2003 to 2009 and contains companies that are cross-listed in the United States on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and National Association of Securities Dealers Automated Quotations (NASDAQ). These are the most regulated share trading exchanges in the US and the companies and their auditors are exposed to the full supervisory powers of the PCAOB.

The main sources of the data are Compustat North America annual and Audit Analytics databases, and the PCAOB. I obtain company financial data from Compustat and auditor data from Audit Analytics. I manually extract details on the inspection of auditors from the PCAOB's web site on inspection reports. The data include the country, auditor, date of inspection report, period covered by the report, the outcome of the inspection, whether the inspection is an annual or triennial inspection, whether the inspection was the first for that auditor, and whether the inspection was jointly conducted with the foreign authorities or only by the PCAOB inspectors.[7]

[7] The object of my investigation is the auditor, not the client. I therefore focus on when the auditor is first inspected.

My final sample comprises 1,635 company-year observations from 33 countries. Table 1 illustrates the development of the sample, commencing with observations for cross-listed companies for 2003 to 2009, and with sufficient data to compute ACQ. I also accumulate data on years before and after to facilitate the measurement of variables that require lag and lead data. I then delete a number of observations. First, I delete observations for companies not on Compustat since 2003 because I require companies to be present in the pre- and post-inspection periods. Second, I delete banks and other financial companies because the accrual-based measurement of the dependent variables is not appropriate for these companies. Third, companies from inspection countries that did not experience an inspection prior to 2008 are removed because they would also not have observations in the pre- and post-inspection periods. Fourth, in order to remove a source of noise I omit companies that are audited by an accounting firm located in a different country from the country in which the company is incorporated. Fifth, observations with missing company-level variables are omitted. Finally, I exclude observations in the transition year in order to provide a purer analysis of the pre- and post-inspection periods.

Inspection country classifications are based on that of the PCAOB at June 30, 2010 (PCAOB, 2010a). The transition year for inspection countries is deemed to be the year in which the first inspection commenced. In the case of non-inspection countries, 2005 is used as the transition year to correspond with the year that the first foreign inspections commenced.[8] The periods prior to and after the transition year define the pre-

[8] A major challenge of this study is to identify the point in time that inspections affect auditor behavior. This is compounded by a phased commencement of inspections, whether due to scheduling or delayed permission to inspect. A relevant comparison period is also required for the non-inspection countries. In sensitivity analyses, I consider two additional approaches to assess the period of impact of inspections.

and post-inspection periods, respectively. Table 2 identifies the transition years along with the number of company-year observations by country and year. The blank cells correspond to the transition year for that country, which is stated in column 2. The variables that characterize each country's reporting environment are shown in Table 3. They are based on prior studies, and other official sources, which are also indicated in Table 3.

6.2 Descriptive statistics

My main tests are based on country-level values, but I also consider company-level analysis in additional tests. The descriptive statistics for each measurement level are presented below under separate headings.

6.2.1 Country-level

Table 5 provides the distribution of the mean and median of the dependent variables for each country in the sample. The values in the upper section are country-year mean and medians. The lower section shows that the mean (-0.056) and median (-0.052) of the distribution of TCA means are similar indicating the distribution is not skewed. The similarity of the mean (-0.054) and median (-0.050) of the distribution of TCA medians also indicate minimal skewness. Similar patterns are observed for ACQ.

Table 6 compares select variables between non-inspection and inspection countries.[9,10] There are significant differences between the mean and median values of nearly all the variables for the two groups of countries. The mean and median of the

These are to restrict the length of the pre- and post- inspection periods, and using a common pre- and post- inspection period for all countries.

[9] The values that are discussed in this section relate to country-year means.

[10] The variables that are compared throughout this chapter are the model variables where any likely differences are due to changes in their characterization and not sample size.

dependent variable, TCA, are significantly greater in the non-inspection countries than in the inspection countries (p-values < 0.01). The opposite maintains for the other dependent variable, ACQ. The mean and median of ACQ are significantly greater in the inspection countries (p-values < 0.01). The mean and median of SIZE are larger in the non-inspection countries, indicating that companies from these countries are larger than those from inspection countries. This demonstrates the earlier comment on the economic significance of the companies from countries that do not permit inspections, as measured by their market capitalization. The LEV variable shows that companies in the non-inspection countries are more highly leveraged. These companies also have greater issues of new debt or equity capital, as indicated by the greater mean and median of ISSUE.

Of the four reporting environment variables, the mean values of DREG, LGL_ENFORCE, and GDP are significantly greater in non-inspection countries than in inspection countries, but LAW is significantly greater in inspection countries. Overall, the reporting environments of the non-inspection countries appear to be at a higher level than that of inspection countries.

My study makes no a priori assumptions about differences between the groups of countries, but is instead related to changes in measures of audit quality as a consequence of inspections. The results of the comparison of non-inspection and inspection countries confirm the need to control for these variables in my regressions, however.

The pre- and post-inspection period measures of each group of countries are compared in Table 7. Specifically, panels A and B state the values for non- inspection and inspection countries, respectively.

In the non-inspection countries, panel A shows that the mean and median values of the dependent variables, TCA and ACQ, are not statistically different between the pre- and post-inspection periods. This corresponds to no change in audit quality in these countries. The only variable with significantly different mean and median values is TENURE, which is larger in the post-inspection period. This indicates that there is stability in the choice of auditing firm.

Panel B of Table 7 shows that, like the non-inspection countries, there are not many significantly different values between the two periods for the inspection countries. Both dependent variables are not significantly different, indicating no change in audit quality in inspection countries, notwithstanding inspections in the post- period. This univariate result is contrary to the expectations of H1. TENURE for the inspection countries is significantly greater in the post-inspection period. This reflects a similar stability in the choice of auditing firm to that observed in the non-inspection countries.

In order to increase the understanding of the data, and provide background for H2, Table 8 summarizes the reverse of the tabulation in Table 7 for the dependent variables only. Specifically, the two inspection groups are compared in each time period.

Panel A shows that in the pre-inspection period, the mean and median values of TCA are not significantly different between non-inspection and inspection countries at p-values of 0.05 or better. The mean of the inspection countries is lower at a significance level of 0.09, however. This mean and median result suggests that prior to the commencement of inspections, audit quality is somewhat similar in the two groups of countries, when the proxy for audit quality is TCA. The mean and median of ACQ is significantly greater in the inspection countries (p-values < 0.01). In the earlier period,

the audit quality of inspection countries appears to be clearly lower than in non-inspection countries, when the proxy for audit quality is ACQ.[11]

In the post-inspection period (Panel B), the median TCA is significantly (p-value = 0.07) lower for the inspection countries (-0.055) compared to the non-inspection countries (-0.045). The mean comparisons are in the same direction as the median, and the significance level of the difference is 0.09. Audit quality in the post-inspection period, compared to the pre-inspection when only the mean was significantly different, appears to be relatively greater for inspection countries than non-inspection countries. This is because in the post-inspection period, both the mean and median TCA are significantly lower in the inspection countries. If the proxy for audit quality is TCA, the trend appears to be consistent with H2. The situation is not as clear when the proxy for audit quality is ACQ. The mean and median of ACQ continue to be significantly (p-values < 0.01) greater in the post-inspection periods for the inspection countries, compared to non-inspection countries. The differences are mathematically lower in the post-inspection period, indicating a narrowing of the audit quality gap between the two groups of countries. The univariate analysis indicates some support for H2.

The Pearson and Spearman correlation coefficients of the dependent and independent variables are reported in Table 9. The dependent variables, TCA and ACQ, are significantly correlated with two of the three variables of interest for the first two hypotheses, i.e., PRE_INS, and POS_NON. Their correlations with POS_INS are negative, but not significant. The implication for the hypothesis testing is addressed in the

[11] Recall that lower (higher) amounts of the unadjusted dependent values represent greater (lower) audit quality.

summary at the end of this chapter. TCA, and more so ACQ, are significantly correlated with the variables that are normally associated with variation in these dependent variables. In comparison to ACQ, TCA is more frequently significantly correlated with the reporting environment variables. The correlations between TCA and DREG, LAW, and LGL_ENFORCE, and the correlation between ACQ and LAW are positive for both types of correlations. The Spearman correlation between ACQ and LAW is negative. Positive correlations between the unadjusted dependent variable and reporting environment variables correspond to the expectations for H3.

There are some notably high correlations between some of the independent variables. The main problematic ones relate to the group of inspection variables. In the regression models in the next chapter, I restrict the number of these variables that are simultaneously included in particular models.

6.2.2 Company-level

In this section, I discuss company-level measures of my model variables. The discussion focuses on major differences between the two levels of variables, or highlight main points of congruence.

Table 10 compares the non-inspection and inspection countries, and shows that, similar to the country-level, there are significant differences between the mean and median values of the variables for the two groups of countries, when examined at the company-level. One dependent variable, TCA, is not significantly different, while the other, ACQ, is significantly greater in the inspection countries. In the country-level analysis, both dependent variables were significantly different. TENURE, DREG and

LGL_ENFORCE, LAW and GDP share similar significant differences at the company-level as the previously reported country-level.

The pre- and post-inspection period measures of each group of countries are compared in panels A and B of Table 11. The values for non- inspection countries are stated in panel A. In the non-inspection countries, the mean and median values of the dependent variable, TCA, are statistically greater in the post-inspection period than in the pre-inspection period (p-value < 0.05). However, the mean and median values are negative and this represents a movement toward zero for TCA consistent with improved audit quality. The mean and median values for ACQ are not significantly different between the two time periods. At the country-level, TCA and ACQ were each not significantly different between the two periods. The other variables are overall similar in both periods with the notable exception of TENURE which is larger in the post-inspection period. This is identical to the country-level findings.

The variables for the inspection countries in the pre- and post-inspection periods are compared in panel B of Table 11. The comparisons of company-year period mean and median values of TCA for the inspection countries are similar in direction to that of the previous comparison for non-inspection countries. The inspection country differences are by comparison however, marginally significant with p-values of 0.09 and 0.07 for the mean and median, respectively. The ACQ mean and median are not significantly different, and the mean and median comparisons of the other variables are similar to the non-inspection countries.

Panel C of Table 11 provides statistics on the inspection-related variables in the post-period for the inspection countries. The means of ENG_DEFIC and FIRM_QC are

0.577 and 0.620, respectively. These means indicate a high incidence of at least one deficiency for an inspection. The means of TRIEN and REPEAT are 0.655 and 0.209, respectively. This is because most of the inspected accounting firms are on the triennial inspection schedule. The value of REPEAT is correspondingly low. The mean of SOLE is 0.597 as the majority of the inspections were wholly performed by the PCAOB team.

Table 12 compares the dependent variables of the two inspection groups in each period. In the pre-inspection period the mean and median values of TCA are not significantly different between inspection groups. However, ACQ is significantly greater in the inspection countries (p-values < 0.01). The two audit quality proxies reflect different starting positions, like the finding at the country-level. In the post-inspection period, the company-year comparisons are similar to the pre-inspection period, possibly an indication that the audit quality gap has not been altered by inspections. This would be contrary to H2. The country-level results indicated some support for H2.

The correlation coefficients of the dependent and independent variables are reported in Table 13. There are two main similarities between the company-level and country-level correlations. First, TCA and ACQ are significantly correlated with PRE_INS and POS_NON. Second, the high correlations between the inspection variables are repeated. The notable difference between the two company-level and country-level correlation tables is that the latter correlations tend to be stronger.

In summary, the mean and median comparisons, and correlations that are presented above are not strongly supportive of the first two hypotheses. These outcomes reflect the insufficiency of univariate analyses of some data. The multivariate analyses in the next chapter are therefore designed to comprehensively test all the hypotheses.

CHAPTER 7: REGRESSION RESULTS

The results of multivariate tests of the effect of inspections on audit quality are presented in this chapter starting with the tests for H1 and H2. This is followed by the examination of H3. All tests are conducted with heteroscedasticity corrected test statistics.[12] I use country-level measures in the main tests because this study is concerned with the effect of the regulatory environment on the behavior of accounting firms. Changes to this environment, including inspections, vary at the country-level, not the company-level. I therefore use country-year means as the measurement basis.[13] In this context, the country-year means of the firm-related variables are proxies for the average effect of the companies that make up each country. I also perform company-level tests in sensitivity analyses. I close the chapter with additional analyses that are designed to test the robustness of the results.

7.1 Country-level tests of H1 and H2

Table 14 reports the results of a country-year analysis of three models that are variations of equation (3).[14] The proxy for audit quality in these models is TCA. The first model contains the test variables, the company-associated variables, and the reporting environment variables. The second and third models are the first model augmented by

[12] The t-statistic test for individual coefficient significance uses the White test and the tests comparing coefficients uses the χ^2 test. These test statistics are derived with heteroscedasticity-corrected standard errors. All p-values, or references thereto, are two-tailed probabilities.
[13] I also run tests based on country-year medians. The sign and significance of the variables are similar to the country-means, but the hypothesis tests are not significant.
[14] Means are used for all country-year values.

different combinations of the variables relating to PCAOB inspections. Models 2 and 3 separately include ENG_DEFIC and FIRM_QC_DEFIC, respectively, with the other three inspection variables. This is due to the multi-collinearity concerns that were stated in the previous chapter.

Each of the three models explains in the region of 50% of the variation in TCA. PRE_INS and POS_INS are positive and significant (p-values < 0.05) but POS_NON is not significant in all models. The coefficients for POS_INS (0.023, 0.038, 0.036) are greater than those for PRE_INS (0.015, 0.014, 0.014), respectively, for the three models. The greater POS_INS coefficients indicate that in the post-inspection period there is improvement in audit quality in the countries that permit inspections. The non-significant POS_NON variable indicates that there is no change in the non-inspection countries.

In model 1, the difference between the variables being compared for H1 is 0.009 and the correct sign, but the test is not significant. In the H2 test, the combined coefficient is 0.014, and the p-value is 0.09. As measured by TCA, there is no evidence that audit quality of companies from inspection countries is greater in the post-inspection period compared to the pre-inspection period (H1). However, at a significance level of less than 0.10, there is evidence that the audit quality of companies from inspection countries improve relative to companies from countries that do not permit inspections (H2).

Stronger results for the tests of H1 and H2 are reported in the second and third models. In model 2, H1 and H2 are significant (p-values < 0.05). In model 3, the p-value of the H1 test is 0.06, and H2 is significant at a p-value of 0.03. Overall, the above tests support H1 and H2 when TCA is the proxy for audit quality.

I now discuss the results for the other variables in the models under four groups. First, the group of variables commonly associated with explaining variation in the dependent variables. SIZE, LEV, LOSS, and OCF are significant, but LEV and OCF are negative, which is the opposite of prediction. The signs of GROWTH and ISSUE are as predicted but the coefficients are not significant.

Second, I discuss the group of variables that characterize the auditors. There was no prediction for the sign of the TENURE coefficient, and the results were not significant. BIG_4 and FIRM_QC are positive, but only FIRM_QC is significant (p-value < 0.01). The FIRM_QC variable appears to be responsible for any positive overall relation between auditor characteristics and audit quality.

Third, I report the group of reporting environment variables. These were predicted to be positively associated with audit quality. GDP is the only environment variable that is significant. It is also positive, as predicted.

The final group is the inspection-related variables. The only significant variable is SOLE (p-value < 0.01) in the models in which they were included. These results may be due to a lack of power, and or similarity of the coefficients.

I now consider ACQ as the proxy for audit quality and re-estimate the three models. The variation that is explained by these models is almost 50% of the amount when the proxy for audit quality is TCA. These results are shown in Table 15. PRE_INS, POS_NON and POS_INS are not significant in any model specification. H1 and H2 are therefore never supported, because the coefficients for these three variables are not statistically different. These results indicate that inspections do not affect audit quality when ACQ is the proxy.

7.2 Country-level Tests of H3

In order to test H3, I interact the variables, PRE_INS, POS_NON, and POS_INS, with each of the environment variables, DREG, LAW, LGL_ENFORCE and GDP to form four models for each of the dependent variables, TCA and ACQ. Because of multi-collinearity concerns, each of the four models for each dependent variable represents a different environment variable interacted with PRE_INS, POS_NON, and POS_INS. I examine the coefficients of the interaction of POS_INS and PRE_INS, and the environment variable to test H3. Recall that higher levels of the environment variables represent a more developed environment. H3 posits that audit quality is relatively more improved in lower developed environments than the more developed environments, as a result of inspections. H3 is supported if β_{25} is significantly less than β_{23}.

Table 16 reports the results of the tests with TCA as the dependent variable. The models explain between 50.0% and 52.0% of the variation in TCA. Their explanatory power is slightly improved in comparison to the earlier presented models that excluded the interactions with the environment variables (see Table 14). The explained variation in those models ranged between 49.5% and 50.0%. The significance of PRE_INS and POS_INS is not as strong after the addition of the interactions with the environment variables. POS_NON continues to be not significant in the four environment models. Previously, PRE_INS and POS_INS were significant at p-values of less than 0.05 or 0.01 (see Table 14). In the ‘’DREG’ model in Table 16, both are now significant at a p-values of less than 0.10. In the ‘LAW’ model, PRE_INS and POS_INS are now both significant at p-values of less than 0.05. In the ‘LGL_ENFORCE’ model, both are not significant. In the ‘GDP’ model, PRE_INS is not significant, and interestingly, POS_INS is negative

and significant at a p-value of less than 0.05. This is the only case of POS_INS being negatively significant. It is usually positively significant.

The addition of the interactions with the environment variables appears to absorb some of the effects of PRE_INS, POS_NON, and POS_INS. In the 'DREG' and 'LAW" models, both PRE_INS and POS_INS are positively significant, POS_INS is larger than PRE_INS, and POS_NON is not significant, but H1 and H2 are not supported in any of the environment models.

The interactions of POS_INS and two of the four environment variables, DREG and GDP, are positive and significant (p-values < 0.05). However, none of the four is statistically different from the PRE_INS interaction. H3 is not supported.

Table 17 reports the results of the tests with ACQ as the dependent variable. These models explain between 22.0 % and 23.0 % of the variation in ACQ. This is slightly lower than the models in Table 15, where the explanatory power was between 23.0% and 24.5 %. In the 'DREG' and 'LAW' models in Table 17, PRE_INS, POS_NON, and PRE_INS are not significant, like all the models before the addition of the environment interactions. In the 'LGL_ENFORCE' model, PRE_INS and POS_NON are not significant, and POS_INS is negative (p-value = 0.08). In the 'GDP' model, PRE_INS and POS_INS are not significant, and POS_NON is positive and significant (p-value < 0.10). The result is that there continues to be no support for H1 and H2, if the proxy for audit quality is ACQ.

The interactions of PRE_INS and POS_INS with the environment variables are not significant. None of the four pairs of environment variable interacted with PRE_INS and POS_INS are however, statistically different. There is no evidence to support H3.

In summary, the results of the tests of the hypotheses at the country level are mixed and subject to choice of dependent variable. H1 and H2 are only supported when TCA is the proxy for audit quality. H3 is not supported by either proxy for audit quality.

7.3 Additional analyses

I conduct additional analyses to determine the robustness of the above results. Specifically, these analyses are (1) incorporating a company-level analysis, (2) considering accrual direction, (3) revising the inspection country classification, (4) omitting countries dominating the sample, (5) restricting the comparison window for the pre- and post-acquisition periods, (6) using a common transition year for all countries, (7) using other audit quality proxies, and, (8) using robust standard errors. These analyses are discussed in the next paragraphs.

7.3.1 Company-level analysis

The results of the country-year analyses indicate that inspections are affecting audit quality as postulated by H1 and H2, when the proxy for audit quality is TCA. I study these issues further with a corresponding company-level approach. Table 18 reports the company-year results using model 1 from Tables 14 and 15.[15] In model 1 of Table 18, the dependent variable is TCA, and in model 2 it is ACQ.

The explained variation in TCA is considerably lower in the company-year analysis with adjusted R^2 of 16% compared to 50% in the country-year models. POS_INS is positive and significant (p-value < 0.01), indicating improved audit quality in the post-inspection period where inspections are permitted. PRE_INS is also positive

[15] The conclusions of the other model specifications are not tabulated because they are similar to that of the tabulated models.

and significant (p-value < 0.01). However, the coefficients for PRE_INS and POS_INS are not significantly different, resulting in H1 not being supported. POS_NON is negative and significant (p-value < 0.10). Together with the significantly positive POS_INS, the conditions for a significant test of H2 appear to be present. However, H2 is not supported because the differences between the combinations of the coefficients are not significant.

The adjusted R^2 of the ACQ model is 12.8% compared to approximately 24% in the country-year models. The results of the company-year tests using ACQ as the proxy for audit quality are similar to the country-year tests. Specifically, PRE_INS, POS_NON, and POS_INS are not significant, nor are the comparisons for the hypotheses tests. H1 and H2 are not supported. These results indicate that inspections do not affect audit quality when ACQ is the proxy.

7.3.2 Accrual direction

I next consider another dimension of the TCA proxy of audit quality. In the sample of 1,635 company-year observations, the unadjusted value of TCA is frequently negative. In un-tabulated results the frequency of negative unadjusted TCA values is just under 80%. A declining negative amount is a movement away from zero and not necessarily an indication of improved financial reporting, and audit quality by extension. The reduction of positive accruals, which are income increasing, may be of more interest than the reduction of negative accruals, which are income decreasing. I therefore use two approaches to examine the effect of inspections on TCA based on its sign.

I first consider the incidence of the sign of unadjusted TCA. I create two subsets of the data, one where there are mixed negative and positive values of unadjusted TCA for the entire sample period, and the other where unadjusted TCA is negative for the

entire period. This produces 876 and 759 company-year observations for the respective sub-sets. I then run separate regressions for these datasets using a model, which is a reduced form of equation (3). Table 19 reports these results, and the 876 and 759 company-year observations correspond to models 1 and 2, respectively.

PRE_INS and POS_INS are not significant in model 1. The test for H1 is not significant. POS_NON is negative and significant, and the H2 test is significant, p-value-0.08. This indicates a relative improvement of audit quality in inspection countries compared to non-inspection countries.

PRE_INS and POS_INS are positive and significant (p-values < 0.01) in model 2. The similarity of the pairs of values, however, result in the test for H1 not being significant. POS_NON is not significant, and H2 is also not significant. Because POS_INS is significantly positive and POS_NON is not significant, this can be interpreted as evidence of audit quality being improved in the inspection countries, relative to the non-inspection countries, when a company has positive and negative TCA.

I also separately examine negative and positive accruals, and run the same regressions as the first two models in Table 19. Models 3 and 4 show the regressions for company-years with negative and positive unadjusted TCA, respectively. The adjusted R^2 in model 3 is 17.2% and the signs and significance levels of the test variables are identical to model 2. PRE_INS (0.018) and POS_INS (0.023) are not significantly different, however. POS_NON is negative but not significant. The results tend to be favorable for H1 and H2, but are not strong enough. These hypotheses are not supported when only negative unadjusted TCA is considered. In model 4, the adjusted R^2 is much lower at 3.5 % and this is due to the lower power of the model with only positive

unadjusted TCA. PRE_INS, POS_NON, and POS_INS, and most of the other independent variables are not significant. H1 and H2 are not supported in model 2.

The lack of power in model 4 makes it difficult to separately compare the effect of inspections on audit quality, conditional on the sign of TCA. Taken together however, the four models that were examined in this section on accrual direction appear to indicate that unadjusted TCA is declining for negative and positive values in inspection countries

7.3.3 Inspection country classification

I classify Great Britain, Ireland, Greece and Norway as non-inspection because they are on the PCAOB's list of non-inspection countries at June 2010. Some inspections commenced in these countries in earlier years however, but were halted due to objections in these foreign countries. Given these circumstances, it is possible that these auditors viewed the resumption of inspections as inevitable and therefore begun to adjust their procedures to avoid future negative inspection results. This is potential noise in the data and thus warrants an investigation of the effect of their exclusion. I therefore exclude these countries and re-run the models.

In un-tabulated results, there is no change to the conclusions of the main tests that include these countries. H1 and H2 are supported when the TCA is the proxy for audit quality, but the tests are not significant when the proxy is ACQ. Alternatively, I include these countries as inspection countries along with the associated inspection variables. The results are qualitatively similar to the main analysis in which these countries are included as non-inspection countries.

7.3.4 Countries with many observations

Canada and Israel account for 43% of the observations in my sample. This may bias the results although I include a control for the number of companies. I therefore consider the effect of omitting each country separately, as well as together. I discuss the un-tabulated results from using TCA as the proxy for audit quality, and employing models 2 and 3 from Table 14.

If Canada or Israel is excluded, individually or together, PRE_INS and POS_INS are mostly positive and significant, and POS_NON is never significant. However, H1 and H2 are not supported if Canada is excluded. These hypotheses are however, supported if Israel is excluded. If Canada and Israel are both excluded, H1 is not significant (p-values = 0.011 or 0.015), but H2 is supported at p-values of 0.07 and 0.09. The separate results of Canada and Israel provide insight into these results.

In examining one country's results, POS_PER is the test variable. POS_PER is an indicator variable equal to 1 if the observation falls in the post-inspection period, and 0 otherwise. In the case of Canada, POS_PER is not significant indicating that there is no change in audit quality after inspections in that country. POS_PER is however, negative and significant (p-value < 0.05) for Israel. This indicates that audit quality declined after inspections in that country. The different results in these countries indicate that their inclusion is not biasing the sample. The interest of this study in in the average effect of inspections and the results of this section indicate that examining the full sample is an appropriate procedure.

7.3.5 Shorter periods

In order to reduce noise in comparing the pre- and post-inspection periods, I restrict the comparison to a shorter window. The models used in the main tests include two years or more in the pre-inspection period and up to four years in the post-inspection period. I therefore limit the length of the pre- and post-inspection periods to the two years on either side of each country's transition year. Table 20 reports the results of four country-year models with TCA as the proxy for audit quality. The models reflect different combinations of the variables relating to the PCAOB inspections.

The models in Table 20 each explain between 53.3 % and 54.5% of the variation in TCA. This is higher than the comparable amount of approximately 50% that was reported in Table 14 for the models that used the full sample period. Overall, the coefficient signs and significance levels for the variables in the models that use the restricted period and the full period are qualitatively equivalent.

PRE_INS and POS_INS are significantly (p-values < 0.05) positive, and POS_NON is negative, but not significant, in all four models in Table 20. The coefficients for POS_INS are greater than those for PRE_INS. These conditions are favorable for the tests of H1 and H2. H1 is supported at conventional levels of significance in models 1, 3, and 4. H2 is supported at conventional levels in only models 3 and 4.

The signs of the combination of variables relevant to the H1 and H2 tests that are not supported are in the correct direction. Overall, the restricted period indicate that audit quality has improved as postulated by H1 and H2.

7.3.6 Common transition year

The auditors in inspection countries that did not experience an inspection until after 2005 may have been motivated to prepare for this eventuality long before an inspection occurred. I examine this prospect with the use of a common transition year for all countries. Specifically, I deem 2005 to be the transition year for all countries and repeat the main tests with TCA as the proxy for audit quality. The un-tabulated results reveal that PRE_INS and POS_INS are positive and significant, and POS_NON is not significant, like the main tests. The p-values for PRE_INS and POS_INS are however, higher when the common transition year is used to specify the pre- and post-inspection periods. Further, none of the tests of H1 and H2 are significant. These results indicate that the transition years that were used in the main tests represent a closer estimate of the period of impact of inspections. Finally, like the main tests, H3 is not supported.

7.3.7 Other audit quality proxies

I consider two other proxies for audit quality and repeat the main tests. The first proxy is total accruals (TA), which is measured as income before extraordinary items minus operating cash flows. The main difference between TA and TCA is that TA includes non-current accruals, the main source of which is depreciation. Although indicating that TCA is a more suitable measure to examine earnings management, Dechow et al. (2011) also showed that TA is an acceptable measure to examine earnings management. The second additional proxy for audit quality that I use is absolute

abnormal accruals (DA) computed with the "modified Jones model". The un-tabulated results are discussed in the next paragraphs.[16]

If TA is the dependent variable, the results are sensitive to the countries that are included in the models. If all countries are included, PRE_INS, POS_NON, and POS_INS are always not significant. Further, H1 and H2 are not supported. Recall the countries that were omitted in the discussion in section 7.3.3 and 7.3.4. If any of these countries are excluded, PRE_INS and POS_INS are positive and significant in every model specification presented in the main tests with TA as the dependent variable. POS_NON is not significant in any model. This appears to be favorable for at least H2. The H1 and H2 tests are however, only significant if two joint conditions are satisfied. Israel must be excluded, and the models are either model 2 or model 3 from Table 14. If both conditions are met, the H1 and H2 tests are significant.[17] Overall, the results for TA do not support H1 and H2. TA was also used to test H3, but that hypothesis was not supported in any model.

If DA is the dependent variable, PRE_INS, POS_NON, and POS_INS are not significant. Further, H1 and H2 are not supported in any model. In the case of H3, LAW is the only reporting environment variables where there is any prospect of support for that hypothesis. POS_INS_LAW is negative and significant (p-value = 0.07). The other variable for the H3 test, PRE_INS_LAW is not significant, but the difference between these two coefficients is -0.019 and it is significant (p-value = 0.01). This appears to

[16] TA and DA are also transformed by multiplying by minus 1.
[17] If both Israel and Canada are excluded, only H2 is significant.

support H3 for this variable, but because neither H1 nor H2 is supported, that result is more mechanical in nature and not evidence of support for H3.

7.3.8 Econometric issues

The main issues addressed in performing the various tests include multi-collinearity and using heteroscedasticity-corrected standard errors in deriving the test statistics. As an alternative, I use two-way cluster robust standard errors to test the robustness of my results to cross-sectional and time-series dependencies. Gow et al. (2010) demonstrated that two-way cluster robust standard errors correct for both of these dependencies. I use the method described by Thompson (2011), and re-run the models that were used to test my three hypotheses. In the country-level regressions I cluster on country and year, and in the company-level regressions I cluster on company and year. The results were qualitatively similar to the main tests.

The overall conclusion of the various tests is that H1 and H2 are supported when TCA is the proxy for audit quality. All the tests that were performed with TCA as the audit quality proxy were also performed with ACQ as the proxy, as appropriate.[18] Inspections improve audit quality of companies in inspection countries and this improvement is also evident when compared to countries where inspections are not permitted. H3 is however, not supported, and this demonstrates that the quality of the reporting environment positively affects audit quality in inspection countries.

[18] The accrual direction test featured TCA only, because it was motivated by issues relating to that variable.

CHAPTER 8: CONCLUSION

I investigate whether PCAOB inspections of the foreign auditors of companies cross-listed on NYSE, AMEX and NASDAQ improved audit quality. Regulatory theory predicts that auditor behavior should be positively associated with regulatory activity, and in particular inspections. I use the natural setting of two groups of countries that permit and do not permit inspections to obtain evidence on the benefit of inspections.

I develop and test three related hypotheses. H1 and H2 most closely concern the question of whether inspections have improved audit quality. H1 compared the audit quality of inspection countries in the post-inspection period with the pre-inspection period. H2 examines the changes in audit quality in the inspection countries relative to the benchmark non-inspection countries. H3 is an ancillary hypothesis where I examine whether the change in audit quality in inspection countries was different for less developed reporting environments compared to the more developed ones.

I use two proxies for audit quality, total current accruals and accrual quality, in my analyses. Overall, I find some evidence that inspections improve audit quality, when the proxy is total current accruals. However, I find no evidence of audit quality when ACQ is the proxy for audit quality. Further, the degree of change in audit quality appears to be invariant to the reporting environment; H3 is not supported in any analysis. This could be interpreted to mean that inspections have an incremental effect on audit quality.

The main limitations of my study are the validity of my measures, the determination of the pre- and post-inspection periods for both groups of countries, and the possibility of other factors influencing the performance of auditors. TCA and ACQ may not capture the audit quality sufficiently. The proper specification of the pre- and post-inspection periods affects the assessment of the changes in the values of my dependent variables, and the factors that contribute to these changes. With these limitations in mind, I performed a number of additional steps to minimize the effect of these limitations. Although these procedures support the conclusions in the main analyses, there is the possibility that other measures may produce different results.

The findings of this study are important to regulators, investors, accounting firms and the companies that cross-list. The results support the PCAOB's assertions concerning the benefits of inspections. The improvement in audit quality is apparent when comparing inspection countries before and after inspections.

Further, the improvement in the inspection countries is also relative to countries where inspections are not permitted. The findings of this study therefore suggest that the audit quality of companies from countries that do not permit inspections may be positively affected should inspections be permitted. The PCAOB has established co-operative agreements on inspections with the United Kingdom, the Netherlands Switzerland, Norway, and Germany between the first quarter of 2011 and the second quarter of 2012. The results of my study support those decisions.

APPENDIX A: TABLES

Table 1 Sample selection summary

	2003	2004	2005	2006	2007	2008	2009	Total
Companies cross-listed on regulated exchanges with fiscal year 2009 data from Compustat	426	469	511	564	600	634	712	3,916
Less:								
Not on Compustat from 2003	-	(2)	(45)	(100)	(134)	(166)	(243)	(690)
Banks and financial institutions	(19)	(20)	(20)	(20)	(19)	(20)	(20)	(138)
Inspection countries not inspected prior to 2008	(27)	(42)	(42)	(42)	(42)	(42)	(42)	(279)
Auditor location and country of incorporation are different	(58)	(60)	(62)	(66)	(70)	(72)	(78)	(466)
Missing company-level variables	(52)	(55)	(44)	(42)	(39)	(37)	(29)	(298)
Less than 6 year's data remaining for a firm	(15)	(13)	(21)	(18)	(20)	(21)	(25)	(133)
Transition year observations	-	-	(185)	(56)	(18)	(18)	-	(277)
Final sample	255	277	92	220	258	258	275	1,635

Table 2 Distribution of sample

Country	Transition year	2003	2004	2005	2006	2007	2008	2009	Total
Argentina*	2006	8	8	8		8	8	8	48
Australia*	2007	3	4	4	4	0	4	4	23
Belgium	2005	1	1		1	1	1	1	6
Bermuda*	2007	2	2	2	2		2	2	12
Brazil*	2006	14	17	17	0	17	17	17	99
Canada*	2005	63	69		69	69	68	68	406
Chile*	2005	7	7		7	7	7	7	42
China	2005	10	10		10	10	10	10	60
Denmark	2005	2	2		2	2	2	2	12
Finland	2005	1	1		1	1	1	1	6
France	2005	7	7		7	7	7	7	42
Germany	2005	2	3		3	3	3	3	17
Great Britain	2005	15	16		16	16	16	15	94
Greece	2005	1	1		1	1	1	1	6
India*	2008	4	8	8	8	8		8	44
Indonesia*	2008	2	2	2	2	2		2	12
Ireland	2005	4	4		4	4	4	4	24
Israel*	2005	47	49		48	48	49	49	290
Italy	2005	4	4		4	4	4	4	24
Japan*	2006	15	16	16	0	16	16	16	95
Korea*	2007	5	5	5	5		5	5	30
Mexico*	2006	14	15	15	0	15	15	15	89
Netherlands	2005	5	5		5	5	5	5	30
New Zealand*	2007	1	1	1	1		1	1	6
Norway	2005	1	1		1	1	1	1	6
Panama*	2007	0	1	1	1		1	1	5
Peru*	2007	1	1	1	1		1	1	6
Portugal	2005	1	1		1	1	1	1	6
Russia*	2008	1	2	2	2	2		2	11
South Africa*	2008	6	6	6	6	6		6	36
Sweden	2005	1	1		1	1	1	1	6
Switzerland	2005	3	3		3	3	3	3	18
Taiwan*	2007	4	4	4	4		4	4	24
Total		255	277	92	220	258	258	275	1,635

	Inspection-period		
	Pre-	Post-	Total
No inspection countries	118	239	357
Inspection countries	560	718	1,278
Total	678	1,057	1,635

* Inspection country

Table 3 Environment variables

Country	LAW	LGL_ENFORCE	GDP	DREG
Argentina*	0	5.36	26.63	0
Australia*	1	9.50	27.55	0
Belgium	0	9.40	26.87	0
Bermuda*	1	9.20^	22.47	0
Brazil*	0	6.32	28.37	0
Canada*	1	9.80	28.09	1
Chile*	0	10.00	26.08	0
China	0	2.90^	29.41	0
Denmark	0	10.00	26.46	0
Finland	0	10.00	26.20	0
France	0	8.70	28.57	0
Germany	0	9.10	28.82	1
Great Britain	1	9.20	28.44	1
Greece	0	6.80	26.43	0
India*	1	5.60	28.18	0
Indonesia*	0	2.90	27.28	0
Ireland	1	8.40	26.08	1
Israel*	1	4.82	26.10	0
Italy	0	7.10	28.35	0
Japan*	0	9.20	29.33	0
Korea*	0	5.60	27.65	0
Mexico*	0	5.35	27.67	0
Netherlands	0	10.00	27.38	0
New Zealand*	1	10.00	25.56	0
Norway	0	10.00	26.75	0
Panama*	0	2.08^	24.01	0
Peru*	0	2.50	25.78	0
Portugal	0	7.20	26.16	0
Russia*	0	2.90^	28.02	0
South Africa*	1	6.40	26.62	0
Sweden	0	10.00	26.85	0
Switzerland	0	10.00	26.99	0
Taiwan*	0	7.40	27.35	0

*Inspection country.
^ The sources for LAW are Leuz et al. (2003) La Ports el. (1997), and CIA World Factbook, except where denoted by ^. These values are not available and were set to the amount for closest matching, considering political systems, colonial background, and geographic location.
The source for GDP is the World Bank website. DREG is based on IAG, 2010. Variables are defined in Table 4.

Table 4 Variable definitions

AQ	Audit quality measured as either total current accruals or accrual quality
TCA	Total current accruals.
ACQ	Accrual quality.
PRE_INS	Indicator variable equal to 1 if the observation falls in the pre-inspection period and the country permits inspections, and 0 otherwise .
POS_INS	Indicator variable equal to 1 if the observation falls in the post-inspection period and the country permits inspections, and 0 otherwise.
POS_NON	Indicator variable equal to 1 if the observation falls in the post-inspection period and the country does not permit inspections, and 0 otherwise.
SIZE	The natural logarithm of the total assets of the company at fiscal year-end,
LEV	Total liabilities divided by total assets,
LOSS	Indicator variable equal to 1 if income before extraordinary items is negative, and 0 otherwise,
GROWTH	The one-year growth in sales,
ISSUE	Indicator variable equal to 1 if the company issued new equity or debt capital in the current fiscal year, and 0 otherwise,
TENURE	The natural logarithm of the number of years since 2000 that the accounting firm is the auditor of the company.
BIG_4	Indicator variable equal to 1 if the auditor is an affiliate member of PricewaterhouseCoopers, KPMG, Deloitte, or Ernst and Young, and 0 otherwise,

Table 4 (continued)

FIRM_QC	Indicator variable equal to 1 if the audit firm is an international firm and undergoes internal reviews (Carson, 2009), and 0 otherwise,
DREG	Indicator variable equal to 1 if the domestic accounting firm regulator is similar to the PCAOB in scope and independence according to the classification in PCAOB-IAG (2010), and 0 otherwise,
LAW	Indicator variable equal to 1 if the domicile's legal system is based on common law, and 0 if it is based on code or civil law,
LEGAL_ENFORCE	The value of the legal enforcement index as reported in Leuz et al. 2003,
GDP	the natural logarithm of gross domestic product in US dollars of the domicile per the World Bank,
ENG_QC_DEFIC	Indicator variable equal to 1 if the inspection report reveals one or more engagement quality control deficiencies, and 0 otherwise
FIRM_QC_DEFIC	Indicator variable equal to 1 if the inspection report reveals one or more firm quality control deficiencies, and 0 otherwise
TRIEN	Indicator variable equal to 1 if the inspection is one that is conducted every three years, and 0 otherwise,
REPEAT	Indicator variable equal to 1 if the inspection is not the first for the particular auditor, and 0 otherwise,
SOLE	Indicator variable equal to 1 if the inspection is conducted by the PCAOB inspectors, and 0 if the inspection is conducted jointly with regulators from the company's home country,
NMBR	The natural logarithm of the number of company observations from a given country each year.

Table 5 Dependent variables by country

		TCA		ACQ	
	N	Mean	Median	Mean	Median
Argentina*	48	-0.081	-0.075	0.028	0.021
Australia*	23	-0.062	-0.050	0.062	0.043
Belgium	6	-0.064	-0.066	0.027	0.030
Bermuda*	12	0.024	0.017	0.032	0.027
Brazil*	99	-0.056	-0.051	0.040	0.035
Canada*	406	-0.055	-0.052	0.044	0.030
Chile*	42	-0.039	-0.043	0.028	0.025
China	60	-0.073	-0.064	0.038	0.027
Denmark	12	-0.031	-0.032	0.026	0.023
Finland	6	-0.041	-0.049	0.032	0.033
France	42	-0.054	-0.053	0.033	0.024
Germany	17	-0.035	-0.039	0.035	0.035
Great Britain	94	-0.038	-0.035	0.026	0.020
Greece	6	-0.051	-0.050	0.020	0.016
India*	44	-0.052	-0.021	0.059	0.048
Indonesia*	12	-0.144	-0.140	0.033	0.031
Ireland	24	-0.031	-0.034	0.031	0.029
Israel*	290	-0.026	-0.017	0.061	0.043
Italy	24	-0.055	-0.060	0.021	0.017
Japan*	95	-0.048	-0.043	0.030	0.025
Korea*	30	-0.099	-0.090	0.033	0.024
Mexico*	89	-0.026	-0.032	0.048	0.028
Netherlands	30	-0.014	-0.009	0.039	0.020
New Zealand*	6	-0.108	-0.102	0.034	0.026
Norway	6	-0.086	-0.078	0.015	0.012
Panama*	5	-0.050	-0.059	0.023	0.021
Peru*	6	-0.044	-0.043	0.047	0.034
Portugal	6	-0.096	-0.096	0.020	0.021
Russia*	11	-0.086	-0.110	0.020	0.013
South Africa*	36	-0.060	-0.054	0.048	0.032
Sweden	6	-0.018	-0.009	0.023	0.027
Switzerland	18	-0.018	-0.013	0.024	0.019
Taiwan*	24	-0.120	-0.119	0.038	0.032
Mean		-0.056	-0.054	0.034	0.027
Median		-0.052	-0.050	0.032	0.027
Std. Deviation		0.033	0.034	0.012	0.008

*Inspection country. The values in the upper section are country-year means and medians. The bottom section shows statistics on the columns in the upper section. Variables are defined in Table 4.

Table 6 Descriptive statistics by inspection category - country-level

	No Inspection countries N=90			Inspection countries N=107				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.047	-0.049	0.051	-0.064	-0.055	0.044	**2.92**	**2.68**
ACQ	0.027	0.027	0.028	0.039	0.034	0.022	**-4.57**	**-4.24**
SIZE	9.681	9.805	2.120	7.963	8.228	1.401	**10.44**	**8.67**
LEV	0.571	0.561	0.218	0.507	0.497	0.132	**3.76**	**4.15**
LOSS	0.104	0.000	0.344	0.170	0.059	0.226	**-2.14**	**-2.62**
OCF	0.120	0.119	0.079	0.126	0.127	0.083	-0.61	-0.96
GROWTH	0.138	0.118	0.222	0.194	0.170	0.236	-1.90	**-1.72**
ISSUE	0.981	1.000	0.237	0.857	0.979	0.239	**5.14**	**6.04**
TENURE	1.585	1.699	0.360	1.311	1.342	0.476	**4.07**	**4.16**
BIG_4	0.990	1.000	0.041	0.968	1.000	0.066	**2.91**	**3.29**
FIRM_QC	1.000	1.000	0.000	0.992	1.000	0.029	**2.27**	**3.12**
DREG	0.196	0.000	0.481	0.056	0.000	0.231	**2.97**	**3.00**
LAW	0.133	0.000	0.472	0.393	0.000	0.491	**-4.35**	**-4.05**
LGL_ENFORCE	8.587	9.200	2.442	6.425	6.320	2.660	**6.64**	**5.80**
GDP	27.296	26.870	1.276	26.845	27.350	1.602	**2.37**	1.56

[1] Variables are defined in Table 4

[2] Tests the hypotheses that the means (medians) are significantly different between the groups using the t-statistic (Wilcoxon's z-statistic). These statistics are significant at .05 or better when in bold-face.

Table 7 Descriptive statistics by inspection category and period – country-level

Panel A: No Inspection category

	Pre-Inspection period N=30			Post-Inspection period N=60				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.055	-0.051	0.031	-0.043	-0.045	0.036	-1.45	-1.59
ACQ	0.026	0.023	0.014	0.028	0.027	0.016	-0.39	-0.14
SIZE	9.453	9.655	0.892	9.795	9.859	0.871	-1.74	-1.39
LEV	0.560	0.559	0.114	0.576	0.568	0.103	-0.69	-0.21
LOSS	0.106	0.000	0.221	0.103	0.000	0.186	0.07	0.02
OCF	0.129	0.126	0.049	0.116	0.117	0.048	1.23	1.38
GROWTH	0.170	0.150	0.108	0.121	0.092	0.210	1.46	**1.76**
ISSUE	0.961	1.000	0.087	0.991	1.000	0.039	-1.79	-1.97
TENURE	1.044	1.099	0.318	1.856	1.851	0.231	**-12.44**	**-7.51**
BIG_4	1.000	1.000	0.000	0.985	1.000	0.049	**2.33**	1.93
FIRM_QC	1.000	1.000	0.000	1.000	1.000	0.000	0.00	0.00

Table 7 (continued)

Panel B: Inspection category

	Pre-Inspection period N=65			Post-Inspection period N=42				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.068	-0.055	0.045	-0.057	-0.055	0.043	-1.29	0.92
ACQ	0.039	0.035	0.022	0.040	0.034	0.022	-0.31	0.28
SIZE	7.911	8.244	1.344	8.042	8.150	1.498	-0.47	0.60
LEV	0.518	0.513	0.137	0.489	0.487	0.125	1.15	-0.90
LOSS	0.156	0.000	0.246	0.190	0.155	0.193	-0.76	1.71
OCF	0.137	0.132	0.089	0.109	0.118	0.068	1.77	-1.71
GROWTH	0.237	0.217	0.217	0.128	0.123	0.251	**2.39**	**-2.85**
ISSUE	0.860	1.000	0.237	0.854	0.950	0.246	-0.13	**-0.51**
TENURE	1.073	1.099	0.395	1.680	1.740	0.333	**-8.24**	**6.71**
BIG_4	0.978	1.000	0.058	0.953	1.000	0.075	**2.10**	**-2.58**
FIRM_QC	0.996	1.000	0.022	0.987	1.000	0.037	1.45	**-2.33**

[1] Variables are defined in Table 4.
[2] Tests the hypotheses that the means (medians) are significantly different between the groups using the t-statistic (Wilcoxon's z-statistic). These statistics are significant at .05 or better when in bold-face.

Table 8 Dependent variables by period and inspection category - country-level

Panel A:

Pre-inspection period

	Non-inspection countries N=30			Inspection countries N=65				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.055	-0.051	0.031	-0.068	-0.055	0.045	1.69	1.22
ACQ	0.026	0.023	0.014	0.039	0.035	0.022	**-3.32**	**-2.79**

Panel B:

Post-inspection period

	Non-inspection countries N=60			Inspection countries N=42				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.043	-0.045	0.036	-0.057	-0.055	0.043	1.70	-1.82
ACQ	0.028	0.027	0.016	0.040	0.034	0.022	**-3.19**	**3.08**

[1] Variables are defined in Table 4.

[2] Tests the hypotheses that the means (medians) are significantly different between the groups using the t-statistic (Wilcoxon's z-statistic). These statistics are significant at .05 or better when in bold-face.

Table 9 Pearson and Spearmen Correlation Coefficients - country-level

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	TCA		0.015	**-0.205**	**0.206**	-0.009	-0.004	-0.004	-0.041	**-0.460**	0.006	**0.141**
(2)	ACQ	0.024		**0.176**	**-0.204**	**0.166**	**-0.400**	**-0.206**	**0.392**	**-0.203**	0.079	**-0.274**
(3)	PRE_INS	**-0.177**	**0.184**		**-0.464**	**-0.365**	**-0.401**	-0.098	0.054	**0.142**	**0.225**	**-0.199**
(4)	POS_NON	**0.211**	**-0.214**	**-0.464**		**-0.344**	**0.473**	**0.213**	-0.112	-0.073	**-0.146**	**0.268**
(5)	POS_INS	-0.030	**0.158**	**-0.365**	**-0.344**		**-0.251**	**-0.198**	0.122	-0.112	-0.098	**-0.165**
(6)	SIZE	-0.008	**-0.327**	**-0.435**	**0.504**	**-0.252**		**0.321**	**-0.417**	**0.357**	**-0.160**	**0.326**
(7)	LEV	-0.070	**-0.241**	**-0.138**	**0.235**	**-0.202**	**0.351**		0.009	-0.032	-0.120	**0.331**
(8)	LOSS	0.010	**0.429**	0.021	-0.134	**0.204**	**-0.338**	-0.106		**-0.544**	**-0.138**	-0.091
(9)	OCF	**-0.451**	**-0.237**	**0.138**	-0.107	-0.075	**0.174**	-0.037	**-0.576**		**0.183**	-0.004
(10)	GROWTH	0.004	0.117	**0.245**	**-0.159**	-0.131	**-0.227**	**-0.157**	**-0.141**	**0.173**		-0.075
(11)	ISSUE	0.082	**-0.290**	**-0.234**	**0.377**	**-0.256**	**0.445**	**0.476**	**-0.301**	**0.146**	**-0.154**	
(12)	TENURE	**0.182**	-0.075	**-0.540**	**0.600**	**0.258**	**0.345**	0.070	-0.020	-0.117	**-0.346**	**0.183**
(13)	BIG_4	**-0.171**	**-0.313**	0.013	0.102	**-0.301**	**0.331**	**0.264**	**-0.448**	**-0.428**	0.015	**0.438**
(14)	FIRM_QC	-0.025	**-0.149**	0.028	**0.161**	**-0.303**	**0.151**	**0.261**	**-0.209**	**0.155**	-0.077	**0.285**
(15)	DREG	**0.182**	0.045	**-0.193**	**0.156**	-0.038	-0.078	-0.059	**0.147**	**-0.184**	0.021	0.077
(16)	LAW	**0.160**	**0.312**	**0.198**	**-0.209**	0.125	**-0.439**	0.012	**0.483**	**-0.414**	-0.086	-0.111
(17)	LGL_ENFORCE	**0.238**	**-0.138**	**-0.326**	**0.299**	-0.130	**0.410**	**0.174**	-0.098	-0.101	**-0.192**	**0.224**
(18)	GDP	-0.103	0.128	-0.060	0.083	-0.067	**0.233**	**-0.254**	**0.219**	-0.099	0.074	**-0.242**
(19)	ENG_DEFIC	0.041	**0.173**	**-0.307**	**-0.290**	**0.842**	**-0.270**	**-0.259**	**0.226**	**-0.146**	-0.033	**-0.299**
(20)	FIRM_QC_DEFIC	0.040	**0.178**	**-0.307**	**-0.290**	**0.842**	**-0.273**	**-0.262**	**0.226**	**-0.143**	-0.040	**-0.298**
(21)	TRIEN	-0.016	**0.151**	**-0.357**	**-0.336**	**0.977**	**-0.254**	**-0.191**	**0.196**	-0.076	**-0.149**	**-0.249**
(22)	REPEAT	0.073	0.120	**-0.162**	**-0.153**	**0.444**	**-0.172**	-0.088	**0.140**	-0.133	**0.140**	-0.110
(23)	SOLE	-0.018	0.132	**-0.351**	**-0.331**	**0.962**	**-0.234**	**-0.174**	**0.178**	-0.054	**-0.157**	**-0.234**

Table 9 (continued)

		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1)	TCA	**0.200**	-0.102	-0.015	**0.144**	**0.154**	**0.295**	**-0.215**	0.047	0.035	0.009	0.123	0.016
(2)	ACQ	-0.032	**-0.275**	-0.105	-0.001	**0.315**	-0.114	0.070	**0.144**	**0.163**	**0.156**	0.068	0.111
(3)	PRE_INS	**-0.523**	0.005	0.001	**-0.194**	**0.198**	**-0.345**	-0.107	**-0.290**	**-0.297**	**-0.342**	**-0.145**	**-0.338**
(4)	POS_NON	**0.569**	0.084	0.129	**0.157**	**-0.209**	**0.303**	0.118	**-0.274**	**-0.280**	**-0.323**	-0.137	**-0.318**
(5)	POS_INS	**0.260**	**-0.245**	**-0.219**	-0.040	0.125	-0.115	-0.073	**0.795**	**0.814**	**0.938**	**0.396**	**0.924**
(6)	SIZE	**0.313**	**0.361**	0.030	-0.036	**-0.494**	**0.334**	0.172	**-0.271**	**-0.287**	**-0.253**	-0.114	**-0.223**
(7)	LEV	-0.004	**0.164**	**0.153**	-0.041	0.058	**0.180**	**-0.365**	**-0.200**	**-0.222**	**-0.178**	0.000	**-0.160**
(8)	LOSS	-0.014	**-0.352**	-0.057	0.072	**0.487**	0.081	0.052	0.124	0.137	0.115	0.033	0.079
(9)	OCF	-0.082	**0.449**	0.059	**-0.146**	**-0.423**	**-0.245**	-0.051	**-0.186**	**-0.178**	-0.107	-0.118	-0.059
(10)	GROWTH	**-0.232**	0.055	-0.013	0.025	-0.068	**-0.203**	0.031	0.012	-0.007	**-0.148**	0.112	-0.133
(11)	ISSUE	0.123	**0.263**	0.112	0.123	-0.090	**0.140**	-0.036	-0.086	-0.087	**-0.196**	0.033	**-0.161**
(12)	TENURE		-0.025	-0.111	0.028	-0.030	**0.209**	-0.030	**0.189**	**0.205**	**0.262**	**0.155**	**0.273**
(13)	BIG_4	-0.058		**0.330**	-0.117	**-0.302**	0.019	**-0.165**	**-0.272**	**-0.259**	**-0.180**	-0.074	-0.116
(14)	FIRM_QC	-0.110	**0.496**		0.030	-0.120	-0.007	**-0.223**	**-0.208**	**-0.193**	-0.114	0.001	-0.119
(15)	DREG	0.007	**-0.243**	**-0.176**		**0.394**	**0.248**	**0.194**	0.012	0.002	-0.094	0.105	-0.111
(16)	LAW	-0.037	**-0.410**	**-0.243**	**0.392**		**0.165**	**-0.230**	0.081	0.083	0.113	**0.165**	0.082
(17)	LGL_ENFORCE	**0.227**	0.114	-0.023	0.135	0.085		-0.034	-0.052	-0.056	-0.114	0.057	-0.137
(18)	GDP	-0.047	**-0.215**	**-0.233**	**0.195**	**-0.182**	-0.119		0.053	0.041	**-0.155**	-0.112	**-0.177**
(19)	ENG_DEFIC	**0.200**	**-0.383**	**-0.358**	0.012	0.098	-0.070	0.040		**0.981**	**0.764**	**0.340**	**0.732**
(20)	FIRM_QC_DEFIC	**0.202**	**-0.377**	**-0.348**	0.008	0.099	-0.070	0.033	**0.998**		**0.798**	**0.415**	**0.772**
(21)	TRIEN	**0.258**	**-0.264**	**-0.248**	-0.052	0.130	-0.114	-0.101	**0.835**	**0.838**		**0.386**	**0.985**
(22)	REPEAT	**0.160**	**-0.218**	**-0.324**	**0.198**	**0.168**	0.028	0.020	**0.504**	**0.517**	**0.435**		**0.368**
(23)	SOLE	**0.263**	**-0.233**	**-0.206**	-0.090	0.100	-0.134	-0.119	**0.810**	**0.814**	**0.987**	**0.381**	

Pearson (Spearman) correlation coefficients above (below) the diagonal. Coefficients in bold are significant at < 0.05 level (two-tailed). N = 197. Variables are defined in Table 4.

Table 10 Descriptive Statistics by inspection category - company-level

	No Inspection countries N=357			Inspection countries N=1,278				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.045	-0.046	0.051	-0.049	-0.045	0.084	1.14	0.67
ACQ	0.030	0.022	0.031	0.046	0.032	0.052	**-7.08**	**-6.22**
SIZE	9.644	9.857	2.124	7.231	7.513	2.352	**18.52**	**15.98**
LEV	0.563	0.551	0.218	0.463	0.473	0.216	**7.76**	**7.44**
LOSS	0.143	0.000	0.350	0.261	0.000	0.440	**-5.32**	**-4.66**
OCF	0.111	0.109	0.081	0.082	0.091	0.150	**4.81**	**3.86**
GROWTH	0.130	0.118	0.528	0.262	0.135	2.214	**-1.95**	-1.10
ISSUE	0.969	1.000	0.173	0.900	1.000	0.300	**5.58**	**4.15**
TENURE	1.556	1.792	0.549	1.406	1.609	0.598	**4.47**	**4.34**
BIG_4	0.980	1.000	0.139	0.949	1.000	0.220	**3.26**	**2.54**
FIRM_QC	1.000	1.000	0.000	0.989	1.000	0.104	**3.76**	**1.99**
DREG	0.364	0.000	0.482	0.318	0.000	0.466	1.65	1.65
LAW	0.331	0.000	0.471	0.639	1.000	0.480	**-10.78**	**-10.42**
LGL_ENFORCE	7.987	9.100	2.427	7.303	6.400	2.298	**4.91**	**3.87**
GDP	27.968	28.440	1.235	27.430	28.090	1.146	**7.70**	**11.82**

[1] Variables are defined in Table 4.
[2] Tests the hypotheses that the means (medians) are significantly different between the groups using the t-statistic (Wilcoxon's z-statistic). These statistics are significant at .05 or better when in bold-face.

Table 11 Descriptive Statistics by inspection category and period - company-level

Panel A: No Inspection category

	Pre-Inspection period N=118			Post-Inspection period N=239				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.054	-0.054	0.051	-0.041	-0.042	0.051	**-2.15**	**-2.20**
ACQ	0.029	0.019	0.028	0.031	0.025	0.033	-0.57	-0.97
SIZE	9.368	9.434	2.120	9.781	9.897	2.117	-1.73	-1.89
LEV	0.544	0.549	0.218	0.573	0.554	0.218	-1.17	-0.93
LOSS	0.136	0.000	0.344	0.146	0.000	0.354	-0.27	-0.27
OCF	0.119	0.118	0.079	0.106	0.107	0.082	0.15	1.47
GROWTH	0.181	0.143	0.222	0.104	0.096	0.625	1.69	**3.34**
ISSUE	0.941	1.000	0.237	0.983	1.000	0.129	**-1.82**	**-2.19**
TENURE	1.041	1.099	0.360	1.810	1.946	0.438	-17.63	**-13.31**
BIG_4	1.000	1.000	0.000	0.971	0.169	1.460	**2.68**	1.87
FIRM_QC	1.000	1.000	0.000	1.000	1.000	0.000	0.00	0.00

Table 11 (continued)

Panel B: Inspection category

Variable[1]	Pre-Inspection period N=560 Mean	Median	Standard Deviation	Post-Inspection period N=718 Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.054	-0.047	0.081	-0.046	-0.043	0.086	-1.71	-1.80
ACQ	0.044	0.031	0.048	0.047	0.032	0.055	-0.85	-0.14
SIZE	7.260	7.664	2.313	7.209	7.328	2.384	0.39	0.51
LEV	0.469	0.475	0.219	0.458	0.470	0.214	0.85	0.99
LOSS	0.234	0.000	0.424	0.283	0.000	0.451	-1.97	**-1.97**
OCF	0.087	0.094	0.145	0.077	0.088	0.154	1.15	1.43
GROWTH	0.260	0.181	0.499	0.263	0.092	2.922	-0.02	**6.88**
ISSUE	0.888	1.000	0.316	0.909	1.000	0.287	-1.22	-1.30
TENURE	1.029	1.099	0.475	1.700	1.792	0.514	**-24.13**	**-22.02**
BIG_4	0.962	1.000	0.190	0.286	0.938	0.240	**1.98**	**1.92**
FIRM_QC	0.995	1.000	0.073	0.985	1.000	0.123	1.80	1.70

Panel C: Inspection variables

Variable[1]	N	Mean	Median	Standard Deviation
ENG_DEFIC	718	0.577	1	0.494
FIRM_QC_DEFIC	718	0.620	1	0.486
TRIEN	718	0.655	1	0.476
REPEAT	718	0.209	0	0.407
SOLE	718	0.597	1	0.491

[1] Variables are defined in Table 4.
[2] Tests the hypotheses that the means (medians) are significantly different between the groups using the t-statistic (Wilcoxon's z-statistic). These statistics are significant at .05 or better when in bold-face.

Table 12 Dependent variables by period and inspection category - company-level

Panel A:

	Pre-inspection period							
	Non-inspection countries N=118			Inspection countries N=560				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat[2]
TCA	-0.054	-0.054	0.051	-0.054	-0.047	0.081	-0.01	-0.37
ACQ	0.029	0.019	0.028	0.044	0.031	0.048	**-4.69**	**-4.23**

Panel B:

	Post-inspection period							
	Non-inspection countries N=239			Inspection countries N=718				
Variable[1]	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat[2]	z-stat2
TCA	-0.041	-0.042	0.051	-0.046	-0.043	0.086	1.06	0.80
ACQ	0.031	0.025	0.033	0.047	0.032	0.055	**-5.45**	**-4.67**

[1] Variables are defined in Table 4.

[2] Tests the hypotheses that the means (medians) are significantly different between the groups using the t-statistic (Wilcoxon's z-statistic). These statistics are significant at .05 or better when in bold-face.

Table 13 Pearson and Spearman Correlation Coefficients - company-level

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	TCA		-0.117	**-0.050**	0.040	0.030	**-0.073**	**-0.118**	**-0.099**	**-0.227**	**-0.075**	**0.048**
(2)	ACQ	-0.030		0.030	**-0.098**	**0.082**	**-0.287**	0.037	**0.245**	**-0.176**	**0.088**	**-0.118**
(3)	PRE_INS	**-0.048**	**0.056**		**-0.299**	**-0.639**	**-0.143**	**-0.053**	-0.003	-0.004	0.010	**-0.071**
(4)	POS_NON	**0.042**	**-0.109**	-0.299		**-0.366**	**0.333**	**0.165**	**-0.087**	**0.054**	-0.027	**0.101**
(5)	POS_INS	0.032	0.075	-0.639	-0.366	1.000	**-0.194**	**-0.106**	**0.099**	**-0.068**	0.013	-0.017
(6)	SIZE	**-0.132**	**-0.295**	**-0.142**	**0.331**	**-0.193**		**0.316**	**-0.434**	**0.443**	-0.045	**0.159**
(7)	LEV	**-0.133**	**-0.067**	**-0.047**	**0.158**	**-0.108**	**0.378**		0.008	-0.014	-0.005	**0.082**
(8)	LOSS	**-0.083**	**0.207**	-0.003	**-0.087**	**0.099**	**-0.419**	**-0.032**		**-0.500**	-0.016	**-0.079**
(9)	OCF	**-0.377**	**-0.093**	-0.003	**0.054**	**-0.077**	**0.423**	0.033	-0.521		**0.064**	**0.042**
(10)	GROWTH	**0.052**	0.021	**0.172**	**-0.067**	**-0.142**	-0.011	-0.037	-0.214	0.216		0.031
(11)	ISSUE	0.027	**-0.077**	**-0.071**	**0.101**	-0.017	**0.164**	**0.092**	**-0.079**	**0.070**	**0.146**	
(12)	TENURE	0.034	-0.014	**-0.543**	**0.288**	**0.430**	**0.102**	0.038	**0.043**	-0.033	**-0.217**	**0.088**
(13)	BIG_4	**-0.049**	**-0.084**	0.023	0.030	**-0.074**	**0.180**	**0.096**	**-0.064**	**0.095**	**0.081**	**0.191**
(14)	FIRM_QC	0.020	0.009	0.025	0.038	**-0.065**	0.003	**0.052**	**-0.042**	0.011	0.039	**0.114**
(15)	DREG	-0.029	-0.009	**-0.142**	0.036	**0.101**	-0.001	**-0.084**	0.005	0.022	**-0.043**	**0.138**
(16)	LAW	**0.108**	**0.157**	0.002	**-0.202**	**0.213**	**-0.438**	**-0.160**	**0.247**	**-0.236**	**-0.064**	**0.082**
(17)	LGL_ENFORCE	-0.021	**-0.082**	**-0.101**	**0.069**	0.023	**0.222**	0.006	**-0.085**	**0.093**	**-0.074**	**0.098**
(18)	GDP	**-0.105**	**-0.080**	**-0.085**	**0.232**	**-0.162**	**0.420**	**0.046**	**-0.155**	**0.160**	0.014	0.009
(19)	ENG_DEFIC	0.035	-0.009	**-0.420**	**-0.241**	**0.658**	**-0.141**	**-0.063**	**0.045**	**-0.054**	**-0.060**	-0.014
(20)	FIRM_QC_DEFIC	0.039	0.016	**-0.441**	**-0.253**	**0.691**	**-0.177**	**-0.082**	**0.065**	**-0.066**	**-0.101**	-0.025
(21)	TRIEN	0.007	0.028	**-0.458**	**-0.263**	**0.718**	**-0.153**	**-0.049**	**0.090**	**-0.058**	**-0.148**	**-0.044**
(22)	REPEAT	0.000	0.049	**-0.229**	**-0.132**	**0.359**	**-0.121**	-0.035	**0.058**	-0.031	**-0.075**	0.021
(23)	SOLE	0.034	0.037	**-0.430**	**-0.247**	**0.674**	**-0.173**	-0.029	**0.108**	**-0.078**	**-0.137**	**-0.057**

Table 13 (continued)

		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1)	TCA	**0.053**	0.004	**0.055**	-0.025	**0.077**	0.004	**-0.120**	0.038	0.045	0.009	0.001	0.026
(2)	ACQ	-0.009	**0.114**	-0.020	-0.031	**0.141**	**-0.101**	**-0.086**	0.019	0.039	**0.060**	**0.059**	**0.067**
(3)	PRE_INS	**-0.500**	0.023	0.025	**-0.142**	0.002	**-0.124**	**-0.057**	**-0.420**	**-0.441**	**-0.458**	**-0.229**	**-0.430**
(4)	POS_NON	**0.260**	0.030	0.038	0.036	**-0.202**	**0.095**	**0.151**	**-0.241**	**-0.253**	**-0.263**	**-0.132**	**-0.247**
(5)	POS_INS	**0.391**	**-0.074**	**-0.065**	**0.101**	**0.213**	0.018	**-0.102**	**0.658**	**0.691**	**0.718**	**0.359**	**0.674**
(6)	SIZE	**0.098**	**0.176**	0.007	0.007	**-0.445**	**0.222**	**0.377**	**-0.137**	**-0.175**	**-0.154**	**-0.122**	**-0.174**
(7)	LEV	0.038	**0.093**	**0.047**	**-0.068**	**-0.134**	0.014	-0.017	**-0.063**	**-0.082**	-0.052	-0.036	-0.032
(8)	LOSS	0.037	**0.064**	**-0.042**	0.005	**0.247**	**-0.063**	**-0.138**	**0.045**	**0.065**	**0.090**	**0.058**	**0.108**
(9)	OCF	-0.035	**0.066**	-0.005	-0.014	**-0.223**	0.016	**0.121**	**-0.062**	**-0.070**	**-0.043**	**-0.085**	**-0.071**
(10)	GROWTH	-0.013	0.020	0.008	0.037	0.021	0.016	0.011	-0.005	-0.012	-0.018	0.009	-0.015
(11)	ISSUE	**0.092**	**0.191**	**0.114**	**0.138**	**0.082**	**0.090**	-0.012	-0.014	-0.025	**-0.044**	0.021	-0.057
(12)	TENURE		**0.167**	**0.107**	**0.104**	**0.103**	**0.096**	-0.003	**0.295**	**0.320**	**0.349**	**0.182**	**0.328**
(13)	BIG_4	**0.146**		**0.433**	0.004	-0.041	0.035	-0.004	0.043	0.044	0.038	0.037	**0.053**
(14)	FIRM_QC	**0.097**	**0.433**		0.008	0.000	-0.033	**-0.074**	**0.054**	**0.057**	**0.044**	0.030	0.040
(15)	DREG	**0.102**	0.004	0.008		**0.560**	**0.645**	**0.314**	**0.115**	**0.085**	**-0.072**	**0.202**	**-0.132**
(16)	LAW	**0.101**	-0.041	0.000	**0.560**		**0.180**	**-0.270**	**0.149**	**0.168**	**0.107**	**0.185**	**0.072**
(17)	LGL_ENFORCE	**0.097**	**0.049**	-0.022	**0.594**	**0.112**		**0.272**	**0.056**	0.019	**-0.100**	**0.112**	**-0.151**
(18)	GDP	0.012	0.020	**-0.076**	**0.283**	**-0.255**	0.195		-0.028	**-0.073**	**-0.182**	-0.014	**-0.212**
(19)	ENG_DEFIC	**0.308**	0.043	**0.054**	**0.115**	**0.149**	**0.059**	**-0.067**		**0.952**	**0.768**	**0.351**	**0.714**
(20)	FIRM_QC_DEFIC	**0.344**	0.044	**0.057**	**0.085**	**0.168**	0.020	**-0.114**	**0.952**		**0.817**	**0.467**	**0.766**
(21)	TRIEN	**0.389**	0.038	**0.044**	**-0.072**	**0.107**	**-0.097**	**-0.208**	**0.768**	**0.817**		**0.280**	**0.865**
(22)	REPEAT	**0.206**	0.037	0.030	**0.202**	**0.185**	**0.120**	-0.037	**0.351**	**0.467**	**0.280**		**0.388**
(23)	SOLE	**0.360**	**0.053**	**0.040**	**-0.132**	**0.072**	**-0.148**	**-0.231**	**0.714**	**0.766**	**0.865**	**0.388**	

Pearson (Spearman) correlation coefficients above (below) the diagonal. Coefficients in bold are significant at < 0.05 level (two-tailed). N = 1,635. Variables are defined in Table 4.

Table 14 TCA regressions - country – level

$$AQ_{it} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \varepsilon_i$$

	Predicted	(1)			(2)			(3)		
Variable	Sign	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
Intercept		-0.620	-5.61	***	-0.608	-5.45	***	-0.611	-5.42	***
PRE_INS	?	0.015	2.25	**	0.014	2.12	**	0.014	2.12	**
POS_NON	?	-0.005	-0.67		-0.006	-0.79		-0.006	-0.76	
POS_INS	+	0.023	2.74	***	0.038	3.19	***	0.036	2.97	***
SIZE	?	-0.006	-2.32	**	-0.006	-2.52	**	-0.006	-2.38	**
LEV	-	0.090	3.82	***	0.091	3.92	***	0.090	3.81	***
LOSS	+	0.057	4.86	***	0.057	5.02	***	0.057	4.95	***
OCF	-	0.358	8.08	***	0.363	8.12	***	0.363	8.07	***
GROWTH	-	-0.017	-1.39		-0.018	-1.39		-0.019	-1.47	
ISSUE	-	-0.009	-0.82		-0.008	-0.70		-0.009	-0.79	
TENURE	?	-0.001	-0.20		0.000	0.05		0.000	0.01	
BIG_4	+	0.007	0.18		0.030	0.80		0.031	0.83	
FIRM_QC	+	0.164	2.33	***	0.151	2.02	**	0.156	2.09	**
DREG	+	-0.003	-0.43		-0.004	-0.51		-0.004	-0.53	
LAW	+	0.004	0.55		0.002	0.31		0.003	0.41	
LGL_ENFORCE	+	-0.001	-1.02		-0.001	-1.27		-0.001	-1.36	
GDP	+	0.018	6.89	***	0.017	6.76	***	0.017	6.75	***
ENG_DEFIC	-				-0.007	-0.41				
FIRM_QC_DEFIC	-							0.001	0.06	
TRIEN	?				0.046	1.28		0.040	1.17	
REPEAT	?				0.001	0.04		0.001	0.07	
SOLE	?				-0.066	-2.23	***	-0.062	-2.17	**
NMBR	?	-0.013	-4.43	***	-0.012	-3.95	***	-0.012	-3.94	***

Table 14 (continued)

Adjusted R^2	49.77%			49.54%			49.49%		
N	197			197			197		
Comparison of coefficients									
	Value	χ^2		Value	χ^2		Value	χ^2	
H1 test: (β_3 - β_1 > 0)	0.009	1.70		0.024	4.41	**	0.022	3.48	*
H2 test: (β_3 - β_2 - β_1 > 0)	0.014	2.86	*	0.030	5.60	**	0.028	4.67	**

* / ** / *** are significant at the 0.10 / 0.05 / 0.01 levels, respectively. The t-test and χ^2 test are computed with heteroscedasticity-consistent standard errors. Means are used for country-year values. The dependent variable is total current accruals, TCA, multiplied by minus 1. The independent variables are defined in Table 4. Model 1 excludes the variables relating to the PCAOB inspections, and models 2 and 3 include different combinations of these variables.

Table 15 ACQ regressions - country – level

$$AQ_{it} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \varepsilon_i$$

	Predicted	(1)			(2)			(3)		
Variable	Sign	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
Intercept		-0.019	-0.19		-0.049	-0.52		-0.048	-0.51	
PRE_INS	?	-0.002	-0.42		-0.001	-0.27		-0.001	-0.25	
POS_NON	?	0.000	0.08		0.001	0.24		0.001	0.21	
POS_INS	+	0.000	-0.07		0.000	0.00		0.001	0.18	
SIZE	?	0.002	1.27		0.002	1.44		0.002	1.36	
LEV	-	0.007	0.54		0.004	0.30		0.005	0.37	
LOSS	+	-0.023	-2.94	***	-0.023	-2.89	***	-0.023	-2.97	***
OCF	-	-0.026	-0.85		-0.034	-1.09		-0.035	-1.14	
GROWTH	-	-0.007	-1.15		-0.008	-1.37		-0.008	-1.27	
ISSUE	-	0.014	0.85		0.011	0.62		0.012	0.66	
TENURE	?	-0.004	-1.00		-0.006	-1.34		-0.006	-1.29	
BIG_4	+	0.019	0.62		0.002	0.06		0.001	0.05	
FIRM_QC	+	-0.022	-0.29		0.014	0.20		0.011	0.16	
DREG	+	0.007	1.25		0.006	1.22		0.006	1.25	
LAW	+	-0.007	-1.50		-0.005	-1.15		-0.005	-1.22	
LGL_ENFORCE	+	0.000	0.22		0.000	0.35		0.000	0.41	
GDP	+	-0.001	-0.65		0.000	-0.26		0.000	-0.22	
ENG_DEFIC	-				0.009	0.90				
FIRM_QC_DEFIC	-							0.005	0.46	
TRIEN	?				-0.069	-3.36	***	-0.065	-3.21	***
REPEAT	?				0.005	0.56		0.004	0.43	
SOLE	?				0.067	3.76	***	0.064	3.56	***
NMBR	?	-0.002	-1.05		-0.003	-1.87	*	-0.003	-1.83	*

Table 15 (continued)

Adjusted R^2	23.20%		24.50%		24.21%	
N	197		197		197	
Comparison of coefficients						
	Value	χ^2	Value	χ^2	Value	χ^2
H1 test: (β_3 - β_1 > 0)	0.001	0.09	0.001	0.02	0.002	0.10
H2 test: (β_3 - β_2 - β_1 > 0)	0.001	0.03	0.000	0.00	0.001	0.03

* / ** / *** are significant at the 0.10 / 0.05 / 0.01 levels, respectively. The t-test and χ^2 test are computed with heteroscedasticity-consistent standard errors. Means are used for country-year values. The dependent variable is accrual quality, ACQ, multiplied by minus 1. The independent variables are defined in Table 4. Model 1 excludes the variables relating to the PCAOB inspections, and models 2 and 3 include different combinations of these variables.

Table 16 Environment results – TCA

$$AQ_{it} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \beta_{23} PRE\_INS*Env_{i,t} + \beta_{24} POS\_NON*Env_{i,t} + \beta_{25} POS\_INS*Env_{i,t} + \varepsilon_{i,t}$$

	Predicted	DREG			LAW			LGL_ENFORCE			GDP		
Variable	Sign	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
Intercept		-0.583	-5.36	***	-0.620	-5.48	***	-0.599	-5.16	***	-0.573	-4.46	***
PRE_INS	?	0.012	1.78	*	0.020	2.56	**	0.008	0.50		-0.162	-1.66	
POS_NON	?	-0.003	-0.34		-0.005	-0.54		0.025	1.36		0.029	0.28	
POS_INS	+	0.023	1.92	*	0.024	2.08	**	0.004	0.22		-0.371	-2.42	**
TENURE	?	-0.004	-0.58		-0.001	-0.22		0.000	0.07		0.002	0.38	
BIG_4	+	-0.008	-0.21		0.014	0.37		0.009	0.25		0.037	0.90	
FIRM_QC	+	0.154	2.22	**	0.143	2.18	**	0.169	2.25	**	0.263	3.05	***
DREG	+	-0.009	-0.87		-0.007	-0.71		-0.001	-0.12		-0.004	-0.51	
LAW	+	0.005	0.64		0.013	0.96		0.000	0.05		0.005	0.76	
LGL_ENFORCE	+	-0.001	-1.78	*	-0.001	-0.64		-0.001	-0.70		-0.002	-1.93	*
GDP	+	0.018	7.21	***	0.018	6.93	***	0.017	6.43	***	0.012	3.69	***
ENG_DEFIC	-	-0.006	-0.34		-0.004	-0.29		-0.007	-0.43		-0.020	-1.44	
PRE_INS*Env	?	0.040	3.34	***	-0.017	-1.19		0.001	0.46		0.006	1.81	*
POS_NON*Env	?	-0.006	-0.44		-0.003	-0.29		-0.004	-1.66		-0.001	-0.35	*
POS_INS*Env	-	0.035	2.60	**	0.000	0.00		0.003	1.19		0.015	2.67	***
Other controls		*included*			*included*			*included*			*included*		
Adjusted R^2		50.51%			49.30%			50.32%			51.77%		
N		197			197			197			197		

Table 16 (continued)

Comparison of coefficients	Value	χ^2	Value	χ^2	Value	χ^2	Value	χ^2
H1 test: (β_3 - β_1 > 0)	0.011	1.12	0.004	0.17	-0.004	0.05	-0.210	2.33
H2 test: (β_3 - β_2 - β_1 > 0)	0.014	1.21	0.009	0.50	-0.028	1.45	-0.239	1.95
H3 test: (β_{25} - β_{23} < 0)	-0.005	0.21	0.017	1.83	0.002	0.81	0.008	2.74

* / ** / *** are significant at the 0.10 / 0.05 / 0.01 levels, respectively. The t-test and χ^2test are computed with heteroscedasticity-corrected standard errors. Means are used for country-year values. The dependent variable is total current accruals, TCA, multiplied by minus 1. The independent variables are defined in Table 4. The environment variables, DREG, LAW, LEGAL_ENFORCE, and GDP, listed at the top of the columns indicate the particular environment variable that is interacted with PRE_INS, POS_NON, and POS.INS.

Table 17 Environment results – ACQ

$$AQ_{it} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \beta_{23} PRE\_INS*Env_{i,t} + \beta_{24} POS\_NON*Env_{i,t} + \beta_{25} POS\_INS*Env_{i,t} + \varepsilon_{i,t}$$

	Predicted	DREG		LAW			LGL_ENFORCE			GDP		
Variable	Sign	Coefficient	t-stat	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
Intercept		-0.012	-0.11	-0.045	-0.46		-0.001	-0.01		-0.108	-0.90	
PRE_INS	?	-0.002	-0.39	-0.002	-0.53		-0.018	-1.47		0.081	1.26	
POS_NON	?	0.002	0.32	-0.002	-0.38		-0.016	-1.25		0.135	1.79	*
POS_INS	+	-0.002	-0.26	0.001	0.09		-0.023	-1.73	*	0.057	0.71	
TENURE	?	-0.005	-1.12	-0.003	-0.58		-0.003	-0.81		-0.004	-1.00	
BIG_4	+	0.016	0.50	0.033	1.08		0.019	0.58		0.022	0.71	
FIRM_QC	+	-0.023	-0.30	-0.018	-0.25		-0.018	-0.24		-0.013	-0.18	
DREG	+	0.008	1.53	0.003	0.41		0.007	1.38		0.006	1.29	
LAW	+	-0.007	-1.45	-0.006	-0.79		-0.008	-1.71	*	-0.007	-1.41	
LGL_ENFORCE	+	0.000	0.00	0.000	0.54		-0.002	-1.71	*	0.000	0.04	
GDP	+	-0.001	-0.69	-0.001	-0.35		-0.001	-0.80		0.002	0.62	
ENG_DEFIC	-	0.004	0.40	0.002	0.24		0.003	0.35		0.003	0.26	
PRE_INS*Env	?	0.003	0.51	0.000	-0.04		0.002	1.17		-0.003	-1.31	
POS_NON*Env	?	-0.005	-0.66	0.012	1.84	*	0.002	1.29		-0.005	-1.80	*
POS_INS*Env	-	0.003	0.30	-0.008	-0.94		0.003	1.63		-0.002	-0.74	
Other controls		*included*		*included*			*included*			*included*		
Adjusted R^2		21.80%		23.22%			22.19%			22.36%		
N		197		197			197			197		

Table 17 (continued)

Comparison of coefficients	Value	χ^2	Value	χ^2	Value	χ^2	Value	χ^2	
H1 test: (β_3 - β_1 > 0)	0.000	0.00	0.003	0.16	-0.005	0.14	-0.024	0.21	
H2 test: (β_3 - β_2 - β_1 > 0)	-0.002	0.06	0.005	0.31	0.011	0.43	-0.160	2.97	*
H3 test: (β_{25} - β_{23} < 0)	-0.001	0.01	-0.007	1.03	0.001	0.13	0.001	0.21	

* / ** / *** are significant at the 0.10 / 0.05 / 0.01 levels, respectively. The t-test and χ^2test are computed with heteroscedasticity-corrected standard errors. Means are used for country-year values. The dependent variable is accrual quality, ACQ, multiplied by minus 1. The independent variables are defined in Table 4. The environment variables, DREG, LAW, LEGAL_ENFORCE, and GDP, listed at the top of the columns indicate the particular environment variable that is interacted with PRE_INS, POS_NON, and POS.INS.

Table 18 Company-level regression results

$$AQ_{it} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG\_4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} NMBR_{i,t} + \varepsilon_i$$

	Predicted	(1)			(2)		
Variable	Sign	Coefficient	t-stat		Coefficient	t-stat	
Intercept		-0.190	-3.15	***	0.014	0.39	
PRE_INS	?	0.020	3.31	***	-0.004	-1.00	
POS_NON	?	-0.010	-1.75	*	-0.002	-0.50	
POS_INS	+	0.017	2.60	***	-0.005	-1.22	
SIZE	?	-0.002	-2.11	**	0.004	4.74	***
LEV	-	0.053	4.33	***	-0.029	-3.22	***
LOSS	+	0.052	7.83	***	-0.014	-2.93	***
OCF	-	0.201	5.70	***	-0.001	-0.03	
GROWTH	-	0.002	1.24		-0.002	-0.91	
ISSUE	-	-0.007	-0.79		0.012	1.92	*
TENURE	?	-0.002	-0.43		-0.001	-0.58	
BIG_4	+	0.004	0.27		0.017	1.53	
FIRM_QC	+	-0.032	-0.93		-0.013	-0.67	
DREG	+	0.026	3.60	***	0.008	1.66	*
LAW	+	-0.005	-0.64		-0.008	-1.83	*
LGL_ENFORCE	+	-0.002	-2.76	***	0.001	0.93	
GDP	+	0.010	4.91	***	-0.003	-2.39	**
NMBR	?	-0.012	-4.28	***	0.000	-0.27	
Adjusted R^2		16.14%			12.75%		
N		1,635			1,635		
Comparison of coefficients							
		Value	χ^2		Value	χ^2	
H1 test: (β3 - β1 > 0)		-0.002	0.15		-0.001	0.17	
H2 test: (β3 - β2 - β1 > 0)		0.008	1.50		0.001	0.03	

* / ** / *** are significant at the 0.10 / 0.05 / 0.01 levels, respectively. The t-test and χ^2 test are computed with heteroscedasticity-consistent standard errors. The Dependent variable in model 1 is total current accruals, TCA, multiplied by minus 1. The dependent variable in model 2 is accrual quality, ACQ, multiplied by minus 1. The independent variables are defined in Table 4.

Table 19 Accrual direction

$$AQ_{it} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} NMBR_{i,t} + \varepsilon_i$$

	Predicted	(1)			(2)			(3)			(4)	
Variable	Sign	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat
Intercept		-0.131	-1.71	*	-0.194	-2.57	**	-0.046	-0.77		-0.075	-0.86
PRE_INS	?	-0.001	-0.12		0.026	3.95	***	0.018	3.33	***	-0.010	-0.99
POS_NON	?	-0.016	-1.88	*	-0.001	-0.22		-0.005	-0.96		-0.007	-0.68
POS_INS	+	0.004	0.33		0.027	3.22	***	0.023	3.32	***	-0.018	-1.61
SIZE	?	-0.003	-1.83	*	-0.006	-4.42	***	-0.004	-3.30	***	0.002	0.86
LEV	-	0.051	2.79	***	0.057	4.83	***	0.053	5.02	***	-0.033	-1.26
LOSS	+	0.058	6.12	***	0.036	5.32	***	0.042	7.12	***	0.006	0.48
OCF	-	0.208	4.31	***	0.149	4.14	***	0.132	4.49	***	0.078	1.16
GROWTH	-	0.002	1.38		0.012	1.54		0.003	1.19		-0.011	-1.07
ISSUE	-	-0.010	-0.71		-0.004	-0.60		-0.012	-1.62		0.025	1.31
TENURE	?	-0.002	-0.38		-0.004	-1.09		-0.002	-0.63		0.003	0.47
BIG_4	+	-0.008	-0.46		0.029	2.06	**	0.000	0.01		-0.017	-1.13
FIRM_QC	+	-0.041	-0.93		-0.028	-0.90		-0.028	-0.74		-0.026	-1.28
DREG	+	0.009	0.92		0.024	2.93	***	0.015	2.38	**	-0.006	-0.41
LAW	+	0.000	-0.02		-0.001	-0.08		-0.003	-0.48		0.004	0.28
LGL_ENFORCE	+	-0.001	-0.56		-0.003	-2.97	***	-0.003	-3.63	***	0.004	1.58
GDP	+	0.007	2.99	***	0.011	4.29	***	0.006	3.08	***	0.001	0.43
ENG_DEFIC	-	-0.010	-1.10		0.004	0.73		-0.004	-0.79		0.000	0.01
NMBR	?	-0.005	-1.23		-0.016	-5.73	***	-0.008	-3.02	**	-0.003	-0.54
Adjusted R^2		12.25%			22.53%			17.23%			3.45%	
N		876			759			1,319			316	

Table 19 (continued)

Comparison of coefficients	Value	χ^2		Value	χ^2	Value	χ^2	Value	χ^2
H1 test: ($\beta_3 - \beta_1 > 0$)	0.005	0.20		0.860	0.09	0.004	0.58	-0.007	0.48
H2 test: ($\beta_3 - \beta_2 - \beta_1 > 0$)	0.021	3.14	*	0.100	0.17	0.009	1.88	0.000	0.00

* / ** / *** are significant at the 0.10 / 0.05 / 0.01 levels, respectively. The t-test and χ^2 test are computed with heteroscedasticity-corrected standard errors. The variables are defined in Table 4. The dependent variable is total current accruals, TCA, multiplied by minus 1. Model 1 represents firms with positive and negative values of TCA for the entire sample period. Model 2 represents firms with negative values of TCA for the entire period. Model 3 (4) represents firm-year observations with negative (positive) unadjusted TCA.

Table 20 Restricted periods

$$AQ_{it} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \varepsilon_{i,}$$

	Predicted	(1)			(2)			(3)			(4)		
Variable	Sign	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
Intercept		-0.723	-5.04	***	-0.719	-5.03	***	-0.694	-4.81	***	-0.695	-4.85	***
PRE_INS	?	0.019	2.31	**	0.019	2.31	**	0.017	2.16	**	0.017	2.16	**
POS_NON	?	-0.003	-0.35		-0.003	-0.32		-0.003	-0.36		-0.003	-0.31	
POS_INS	+	0.036	3.34	***	0.033	2.95	***	0.044	3.07	***	0.042	2.84	***
SIZE	?	-0.010	-2.89	***	-0.010	-2.81	***	-0.011	-3.02	***	-0.011	-2.91	***
LEV	-	0.095	3.36	***	0.093	3.22	***	0.097	3.49	***	0.094	3.30	***
LOSS	+	0.056	3.79	***	0.056	3.75	***	0.057	3.79	***	0.057	3.71	***
OCF	-	0.397	6.67	***	0.400	6.66	***	0.419	6.77	***	0.421	6.69	***
GROWTH	-	-0.015	-0.98		-0.016	-1.02		-0.024	-1.34		-0.025	-1.41	
ISSUE	-	0.000	-0.04		-0.002	-0.13		-0.001	-0.06		-0.003	-0.21	
TENURE	?	-0.010	-1.13		-0.011	-1.14		-0.009	-0.98		-0.009	-1.02	
BIG_4	+	0.019	0.34		0.021	0.37		0.042	0.74		0.044	0.76	
FIRM_QC	+	0.186	2.20	**	0.186	2.23	**	0.152	1.79	*	0.159	1.90	*
DREG	+	-0.003	-0.32		-0.003	-0.31		-0.003	-0.32		-0.003	-0.33	
LAW	+	0.009	0.95		0.010	1.02		0.005	0.53		0.007	0.65	
LGL_ENFORCE	+	-0.001	-0.55		-0.001	-0.62		-0.001	-0.87		-0.001	-0.94	
GDP	+	0.022	6.71	***	0.021	6.69	***	0.021	6.68	***	0.021	6.71	***
ENG_DEFIC	-	-0.014	-0.84					-0.019	-1.05				
FIRM_QC_DEFIC	-				-0.006	-0.33					-0.009	-0.46	
TRIEN	?							0.054	1.28		0.044	1.04	
REPEAT	-							0.041	1.96	*	0.039	1.88	*
SOLE	?							-0.071	-1.99	**	-0.063	-1.75	*
NMBR	?	-0.015	-4.26	***	-0.015	-4.25	***	-0.014	-3.77	***	-0.014	-3.80	***

Table 20 (continued)

Adjusted R^2	53.58%			53.35%			53.84%			54.50%		
N	128			128			128			128		
Comparison of coefficients												
	Value	χ^2		Value	χ^2		Value	χ^2		Value	χ^2	
H1 test: (β_3 - β_1 > 0)	0.018	3.10	*	0.014	1.95		0.027	3.99	**	0.025	3.17	*
H2 test: (β_3 - β_2 - β_1 > 0)	0.021	2.41		0.017	1.61		0.030	3.89	**	0.028	3.14	*

* / ** / *** are significant at the 0.10 / 0.05 / 0.01 levels, respectively (two-tailed). The t-test and χ^2 test are computed with heteroscedasticity-corrected standard errors. Means are used for country-year values. The Dependent variable is total current accruals, TCA, multiplied by minus 1. The independent variables are defined in Table 4.Models 1 to 4 include different combinations of the variables relating to the PCAOB inspections.

APPENDIX B: FIGURES

Figure 1 Conditions for Hypotheses 1 and 2

Recall the following equation and variable definitions in Table 4

$$AQ_{i,t} = \beta_0 + \beta_1 PRE\_INS_{i,t} + \beta_2 POS\_NON_{i,t} + \beta_3 POS\_INS_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 OCF_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ISSUE_{i,t} + \beta_{10} TENURE_{i,t} + \beta_{11} BIG\_4_{it} + \beta_{12} FIRM\_QC_{it} + \beta_{13} DREG_i + \beta_{14} LAW_i + \beta_{15} LGL\_ENFORCE_i + \beta_{16} GDP_i + \beta_{17} ENG\_DEFIC_{i,t} + \beta_{18} FIRM\_QC\_DEFIC_{i,t} + \beta_{19} TRIEN_{i,t} + \beta_{20} REPEAT_{i,t} + \beta_{21} SOLE_{i,t} + \beta_{22} NMBR_{i,t} + \varepsilon_{i,t} \quad \textbf{(3)}$$

Consider the following statements on Audit quality (AQ) in the pre- and post-inspection periods, given that each dependent variable is multiplied by minus 1 in order that increasing values correspond to greater audit quality.

Pre-Inspection period

1. AQ for non-inspection countries = β_o
2. AQ for inspection countries = $\beta_0 + \beta_1$

Pre-Inspection period

3. AQ for non-inspection countries = $\beta_0 + \beta_2$
4. AQ for inspection countries = $\beta_0 + \beta_3$

H1 requires statement (4) to be greater than statement (2), hence

$$\beta_o + \beta_3 > \beta_0 + \beta_1$$
$$\beta_3 > \beta_1$$
$$\beta_3 - \beta_1 > 0$$

H2 requires statements (4) – (3) to be greater than statements (2) – (1), hence

$$(\beta_o + \beta_3) - (\beta_0 + \beta_2) > (\beta_o + \beta_1) - \beta_0$$
$$\beta_3 - \beta_2 > \beta_1$$
$$\beta_3 - \beta_2 - \beta_1 > 0$$

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