

**Audit Fees of Foreign Firms Cross-Listed in the U.S.**

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**ABSTRACT:** We extend prior literature on the costs of cross-listing by comparing audit fees for a sample of foreign firms cross-listed in the U.S. to those of U.S.-based companies. While prior studies examining audit fees for cross-listed firms focus on the role of expected litigation costs in influencing audit fees (Seetharaman, Gul, and Lynn 2002; Choi, Kim, Liu, and Simunic 2009), we concentrate on the pricing of audit fees after controlling for expected litigation costs to understand whether the audit effort for cross-listed firms differs significantly from that for U.S.-based firms. On the one hand, audit fees for cross-listed firms are expected to be higher because auditors of U.S. cross-listed companies must attest to any reconciliation of financial statements to U.S. GAAP, suggesting incremental audit effort. On the other hand, audit quality concerns for cross-listed firms suggest lower audit effort. After controlling for the home country litigation environment and other engagement- and country-specific factors, we find that audit fees for firms cross-listed in the U.S. are approximately 23 percent higher than those for U.S. firms. We then extend our model by developing a country-specific measure of the auditing regulatory environment to control for audit quality differences around the world. We find that audit fees are increasing in our measure of the strength of the regulatory environment and, more importantly, after adding this measure, the incremental fee for U.S. cross-listed firms increases to approximately 39 percent. These results suggest the country-specific regulatory environment and the reconciliation to U.S. GAAP are both significant determinants of audit fees. Our study contributes to the literature by documenting fees paid to external auditors as an additional cost of cross-listing in the U.S.

**Keywords:** ADRs, cross-listings, auditing oversight, foreign audit firms

**Data Availability:** All data are publicly-available from the sources identified in the text.

# **Audit Fees of Foreign Firms Cross-Listed in the U.S.**

## **I. INTRODUCTION**

In recent years, the frequency of foreign firms listing on U.S. stock exchanges has been increasing. In 1990, 352 foreign firms from 24 countries were trading in the U.S. as American Depositary Receipts (ADRs).<sup>1</sup> The number of ADRs grew to 1,800 from 78 countries in 1999 (Coffee 2002), and to 2,060 from 76 countries in 2007 (Bank of New York Mellon 2008). Consequently, U.S. investors are increasingly relying on financial statements prepared by ADR companies and audited by foreign auditors. In most cases, these financial statements are prepared under domestic GAAP or IFRS and then reconciled to U.S. GAAP.<sup>2</sup> In this study, we examine audit effort differences between U.S. and cross-listed firms using audit fees as a proxy for audit effort. Our study also has implications for the debate on audit quality for cross-listed firms related to concerns that the oversight of the auditing process for cross-listed firms may not be as stringent as the oversight of the auditing process for U.S. companies.

While much of the literature on ADR firms concentrates on various accounting and finance aspects of cross-listing (e.g. Foerster and Karolyi 1999; Lang et al. 2003; Lins et al. 2005; Karolyi 2006; Hail and Leuz 2009), limited evidence exists on the role of auditors of the foreign firms listing in the U.S. Seetharaman, Gul, and Lynn (2002) examine the impact of litigation risk on audit fees by comparing audit fees of U.K. firms cross-listed in the U.S. to those of U.K. firms cross-listed in other countries and those of U.K. firms not cross-listed. They find

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<sup>1</sup> U.S. investors can purchase equity interests in global firms directly through Depositary Receipts, such as American Depositary Receipts (ADRs), without having to go through a foreign stock exchange. The depositary receipts are negotiable instruments issued by a U.S. commercial bank and they represent a certain number of shares of a non-U.S. company's equity. ADRs are listed on U.S. stock exchanges or traded over the counter.

<sup>2</sup> For financial years ending after November 15, 2007, the SEC allows foreign private issuers that file their financial statements using IFRS as issued by the International Accounting Standards Board to file without reconciling to U.S. GAAP (SEC 2008a [Release No. 33-8879]). Research suggests these reconciliations provide value-relevant information to investors (e.g., Henry, Lin and Yang 2009; Chen and Sami 2008).

that audit fees are higher for firms cross-listed in the U.S., but not for firms cross-listed in non-U.S. markets. They attribute their results to auditors pricing higher litigation costs in the U.S. In a related study, Choi, Kim, Liu, and Simunic (2009) attribute the higher audit fees to firms that cross-list in countries with stronger legal regimes relative to the firms' home countries.

Similarly, Choi, Kim, Liu, and Simunic (2008) examine audit fees in an international context and find that the litigation environment impacts audit effort, audit fees, and the premium charged by Big N auditors.

These studies provide insights into the association between cross-listing, litigation risk, and audit fees by comparing audit fees for cross-listed firms relative to audit fees of non cross-listed firms from the home country. However, an unanswered question remains as to whether the auditors of ADR firms expend incremental audit effort beyond that associated with the effects of a stronger legal regime (e.g., the U.S. Federal Securities laws). Foreign auditors providing attestation for U.S. cross-listed firms are also required to follow U.S. auditing and independence standards.<sup>3</sup> Additionally, when a U.S. cross-listed company prepares financial information under domestic or international accounting standards, the auditor must attest to a reconciliation of these financial statements to U.S. GAAP. These factors are also likely to increase audit effort.

Therefore, in contrast to prior studies, we compare ADR firms listed on U.S. stock exchanges to U.S. firms because our key objective is to examine differences in audit fees between the two sets of firms while holding auditors' legal liability exposure in the U.S. "constant" as both sets of firms are liable under the U.S. Federal Securities laws. Our objective is to investigate the merits

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<sup>3</sup> Our sample period covers 2000-2007. Audit reports issued prior to May 24, 2004 would refer to U.S. Generally Accepted Auditing Standards as determined by the Auditing Standards Board. As of, and subsequent to, May 24, 2004, audit reports of registrants would refer to auditing standards as determined by the Public Company Accounting Oversight Board (PCAOB). Throughout the paper, we refer collectively to these standards as "U.S. auditing standards."

of the “incremental audit effort hypothesis” which posits that, after controlling for the home-country and cross-listing country litigation environments, attesting to the reconciliation to U.S. GAAP results in higher audit effort leading to higher audit fees for audits of ADR firms relative to those of U.S. domestic firms.

On the other hand, concerns about a lack of uniform audit quality around the world (Skinner and Srinivasan 2009) imply we may not observe higher audit fees for ADR firms.<sup>4</sup> If the level of effort associated with international auditors is not comparable to that of U.S. auditors, audit fees for ADR firms may not be higher relative to those of U.S. firms. Although ADR-firm auditors have strong incentives to fully comply with U.S. auditing standards because they are subject to inspections by the PCAOB, in practice the PCAOB has had to delay the completion of many of its inspections of the auditors of foreign firms listed on U.S. exchanges (PCAOB 2008b). Therefore, if audit effort is lower for firms cross-listed in the U.S., audit fees for ADR firms are expected to be significantly lower relative to those for U.S. based firms. Thus, the “lower audit effort hypothesis” predicts that, after controlling for differences in home-country litigation environment, audit fees are lower for ADR firms relative to those of U.S. domestic firms.

Using a large sample of publicly-traded firms in the U.S. between the years 2000 and 2007, we estimate a regression of audit fees on several determinants of audit fees and an ADR indicator variable for cross-listed firms. We find a significantly positive coefficient on ADR, which is consistent with the incremental audit effort hypothesis. The magnitude of the fee difference between cross-listed and U.S. domestic firms is economically and statistically

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<sup>4</sup> For instance, Mark Olson, former Chairman of the PCAOB said “beginning with the passage of the Sarbanes-Oxley Act in 2002, Wall Street and the public have come to better understand the vital role of the audit profession in this country and around the world. There is increased scrutiny of auditors and the audit process by all stakeholders who have an interest in financial statements” (<http://www.complianceweek.com/article/5523/pcaob-cracks-whip-on-audit-quality>, accessed September 29, 2009).

significant. After controlling for engagement- and firm-specific characteristics, as well as country-specific factors such as per capita country-level GDP (a proxy for cross-country differences in average audit fees per hour), the strength of legal enforcement, the importance of the equity market, and the quality of disclosure, we find a fee increase of approximately 23% for ADR firms.

We also develop a measure to control for variations in the strength of the auditing regulatory environments across countries. We hand-collect data from compliance surveys conducted by the International Federation of Accountants (IFAC) that include questions related to the accounting and auditing regulatory environment in countries around the world. Specifically, we collect data on the auditing standard-setting process (whether an independent agency or the government is the standard setter), the auditing oversight process (including responsibility for conducting inspections of auditors and the power to sanction auditors), and other characteristics of the auditing regulatory environment such as audit partner or audit firm rotation requirements, joint audit requirements, and ongoing licensing requirements for listed entities. Our goal is two-fold: (1) to determine how global variations in accounting and auditing environments influence audit fees in general and, more specifically, (2) to determine whether controlling for the auditing regulatory environment impacts any fee differential between ADR and U.S. domestic firms.

Rather than focus on the individual characteristics, we combine these characteristics into an auditing regulatory environment principal component score and then include that score in our regression of audit fees on firm- and engagement-specific characteristics, country-level controls and various ADR indicators. We find that audit fees are increasing in the auditing regulatory environment principal component score, and that the incremental audit fee we document for

cross-listed firms increases from 23% to 39%, suggesting it is important to control for the strength of the auditing regulatory environment in studies examining audit fees across countries. Overall, our results suggest that, even after controlling for variations in the strength of auditing oversight, auditors exert significant additional effort when firms are cross-listed in the U.S. relative to the audit effort for U.S.-based firms.

Our inferences are based on the presumption that audit fees are a reliable proxy for audit effort. While we do not have audit effort data, our assumption is consistent with prior studies supporting the link between audit fees and audit effort (e.g., Bell, Landsman and Shackleford 2001; Bedard and Johnstone 2006). In addition, we perform various sensitivity tests to ensure our results are not driven by the larger average size of ADR firms relative to U.S. firms, or by the specific method used to create our measure of the strength of the auditing regulatory environment.

Our findings contribute to the literature in at least three ways. First, our findings suggest an additional cost of cross-listing for foreign firms. Doidge, Karolyi and Stulz (2004) discuss an imbalance of costs and benefits of cross-listing in the U.S.<sup>5</sup> We document an additional direct cost, higher audit fees, although the evidence suggests the benefits of cross-listing still seem to outweigh the costs given the increase in the number of firms cross-listing in the U.S. in recent years. Second, our findings suggest that at least a portion of the higher fees documented in prior studies and attributed to increased litigation exposure is due to the differences in the auditing environment and additional effort associated with attesting to the U.S. GAAP reconciliation and/or complying with U.S. auditing and independence standards. A key innovation of our study

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<sup>5</sup> The benefits of cross-listing include a lower cost of capital relative to firms in the same country that do not cross-list, an increase in the ability to raise equity capital, and increased liquidity and visibility (see also Hail and Leuz 2009; Karolyi 2006; Lins et al. 2005; Lang, Lins, and Miller 2003; and Foerster and Karolyi 1999). The direct costs by comparison seem relatively small: SEC reporting costs, legal fees, and investment banking costs.

is that we hold the litigation environment constant by including only firms that are publicly traded in the U.S. Finally, our study contributes to the literature by developing a measure of the strength of auditing oversight across countries. Our results suggest that the strength of auditing oversight is important even after controlling for country-specific factors such as per capita GDP, the strength of legal enforcement, the importance of the equity market, disclosure quality and rule of law as examined in prior studies.

The remainder of the paper is organized as follows. In Section II, we discuss the ADR program, the litigation environment, auditing standards, and accounting standards relevant to ADRs and how these might impact audit effort and audit fees. We also discuss our measure of the strength of the auditing regulatory environment across countries. In Section III we discuss our sample and descriptive statistics. In Section IV, we discuss our regression analyses and sensitivity tests, and in Section V we summarize our findings and conclusions.

## **II. BACKGROUND AND HYPOTHESES**

### **Reporting Requirements and Legal Liability for Cross-Listed Firms**

ADR firms are grouped into three levels determined by where the depositary receipts are traded and whether the company can raise capital in the U.S. Level I ADRs are traded over the counter (on “pink sheets”), and these ADR firms are not required to report in or reconcile their home country financial reports to U.S. GAAP. The only reporting requirements for Level I ADRs are to file a Form F-6 registration statement with the SEC and to provide annual financial statements to the SEC.<sup>6</sup> Level II ADRs are traded on the New York Stock Exchange, Nasdaq, or the American Stock Exchange. These non-U.S. companies must file annual financial statements

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<sup>6</sup> These annual financial statements must be prepared in English, but need not be prepared under or reconciled to U.S. GAAP.

(on Form 20-F or 10-K) with the SEC and provide a reconciliation to U.S. GAAP.<sup>7</sup> A Level III ADR is similar to a Level II ADR, but the foreign firm is also able to raise capital in the U.S. A Level III ADR firm is required to provide a more detailed reconciliation to U.S. GAAP than a Level II ADR firm, therefore, effectively presenting full U.S. GAAP financial statements.

From a legal liability standpoint, similar to U.S.-based firms and their auditors, Level I, II, and III ADR firms and their auditors are all subject to potential liability in the U.S. under the provisions of the Exchange Act (Seetharaman et al. 2002). Any firm that lists on a national stock exchange in the U.S. is required under Section 12(b) of the Securities Exchange Act of 1934 to register with the SEC and, under Section 13, to file periodic disclosures. For foreign firms, the periodic disclosures generally include a Form 20-F (similar to a Form 10-K for U.S. issuers) which must be filed within six months of each fiscal year-end. This Form 20-F includes the audit report and audited financial statements.<sup>8</sup>

Seetharaman et al. (2002) cite evidence of non-U.S. auditors being held liable under Rule 10b-5 and section 1962(c) when firms cross-list in the U.S. More recently, investors named both Satyam, a cross-listed ADR, and their auditor, PriceWaterhouse (India), in a class action lawsuit filed in the San Jose, California district Federal Court, citing Rule 10b-5 as the basis for the litigation. Bhattacharya, Galpin, and Haslem (2007) examine lawsuits against both U.S. and foreign firms for the most “popular” violations including antitrust infringements, contract disputes, employment actions, patent infringement, and product liability lawsuits. They find an increasing frequency of lawsuits filed in the U.S. against foreign firms, with up to 29% of the

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<sup>7</sup> Our inferences are unchanged if we exclude 39 firm-years from our analyses that filed IFRS financial statements after November 15, 2007 when they were no longer required to reconcile to U.S. GAAP (SEC 2008a [Release No. 33-8879]).

<sup>8</sup> There are reporting exemptions in certain cases, such as for 144A offerings (private placements) in which the firms do not have to file periodically with the SEC (e.g., Level I ADRs) or in the case of issuers not trading on a national exchange and, therefore, are not subject to Section 12 requirements (Chaplinsky and Ramchand 2004).

lawsuits filed in 2000 being against foreign firms.<sup>9</sup> They find that dismissal rates, settlement rates, and win rates are statistically indistinguishable for foreign firms with ADRs versus foreign firms without ADRs. Thus, the evidence suggests that with respect to certain litigation, plaintiffs treat ADRs and U.S. firms similarly.

### **Litigation Risk, Audit Effort and Audit Fees across Countries**

Prior research examines audit fee differences between firms that cross list in other countries, including the U.S., and those that do not cross-list. The central hypothesis is that differences in legal regimes result in fee differentials; audit firms increase fees to cover expected litigation costs from higher litigation countries such as the U.S. For instance, Seetharaman et al. (2002) compare audit fees of U.K. companies that cross-list on a U.S. exchange to U.K. firms that cross-list in other countries, and to U.K. firms that do not cross-list. They find that U.K. firms that are listed on a U.S. stock exchange pay significantly higher fees which cannot be fully explained by SEC disclosure requirements. The authors conclude that their results are consistent with audit fees reflecting risk differences across liability regimes.

Choi et al. (2009) extend the results of Seetharaman et al. (2002) using a more comprehensive sample of firms from fourteen different countries. Choi et al. (2009) show that firms cross-listed in countries with stronger legal regimes (e.g. the U.S.) mostly account for the positive relation between cross-listing and audit fees. Furthermore, they find that the fee differences are increasing in the difference between the cross-listing and home country legal environment. In another related international study, Choi et al. (2008) find that the litigation environment impacts audit effort, audit fees, and the premium charged by Big N auditors.

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<sup>9</sup> Bhattacharya et al. (2007) do not include securities lawsuits in their study and the lawsuits they examine may be filed regardless of whether the foreign firm has an ADR listed in the U.S.

While most of the prior studies examining international audit fees concentrate on litigation risk as a key explanation, they also implicitly and explicitly acknowledge that other factors might play a central role in the pricing of audit fees when firms are listed in more than one country. For example, Seetharaman et al. (2002, footnote 10 on page 107) conduct a small sample survey of U.K. firms to examine other factors that could explain the higher fees. Although the three responding audit firms agreed that potential litigation losses are larger when the client cross-lists in the U.S., they also indicated “that the requirement to conform or reconcile U.K. financial statements to U.S. GAAP materially increases a U.K. auditor’s audit work.”<sup>10</sup> Similarly, Taylor and Simon (1999) find that differences in disclosure and regulatory environments determine audit fees in addition to variations in litigation risk.

An additional burden for auditors of firms cross-listed in the U.S. is the requirement that auditors of these firms follow U.S. auditing standards. Form 20-F Section E(c)(3) states that financial statements filed with the 20-F annual report “must be audited in accordance with U.S. generally accepted auditing standards, and the auditor must comply with the U.S. standards for auditor independence.” Thus, similar to auditors of U.S. firms, auditors of foreign firms listing on U.S. stock exchanges are required to register with the Public Company Accounting Oversight Board (PCAOB), comply with PCAOB auditing and independence standards, and are subject to the PCAOB inspection process at least once every three years.

While prior studies acknowledge that auditors of ADR firms must comply with U.S. auditing standards and attest to the reconciliation to U.S. GAAP, they do not measure how these incremental attestation efforts influence audit fees. By comparing audit fees of companies cross-listed in the U.S. to those of U.S.-based companies (and controlling for other country-specific

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<sup>10</sup> The reconciliation to U.S. GAAP provided pursuant to Item 17 or 18 of Form 20-F must be included in the notes to the financial statements and, thus, must be considered by the auditor when expressing its opinion on the financial statements taken as a whole.

factors known to impact audit fees), an environment in which both are subject to U.S. Federal Securities laws and U.S. auditing standards, we are able to measure incremental costs associated with the attestation of the reconciliation to U.S. GAAP.

Assuming that audit fees are an increasing function of audit effort and expected costs from litigation (Simunic 1980),<sup>11</sup> we expect audit fees for ADR firms to be higher than those for U.S. firms because auditors of foreign filers might have to complete audits under two different sets of accounting standards. Thus, according to the incremental audit effort hypothesis (stated in alternate form):

$H_{\text{incremental audit effort}}$ : *Audit fees are higher for foreign firms cross-listed on a U.S. stock exchange relative to audit fees for U.S.-based firms.*

On the other hand, it is possible that audit fees are lower for ADR firms because the foreign auditors' audit effort is not sufficient to satisfy U.S. auditing standards if the monitoring of these auditors is not as stringent as that of U.S. firms (e.g. Skinner and Srinivasan 2009; Simnett 2007; CEOs of the International Audit Networks 2006).<sup>12</sup> To the extent that foreign audit firms are subject to PCAOB inspections (due to their relationship with an ADR firm), this process could provide important information to investors on audit quality in various countries around the world. Through the inspection process, the PCAOB determines whether it believes

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<sup>11</sup> Simunic (1980) expresses audit fees as the sum of the cost of audit effort ( $c \times q$ ) and an expected liability loss component ( $E[L] \times E[\Theta]$ ):

$$E[C] = c \times q + E[L] \times E[\Theta]$$

where  $E[\cdot]$  represents the expectation operator,  $C$  is the total cost of the audit to an auditor,  $c$  is the per unit cost of an audit including all normal profits,  $q$  is the quantity or effort supplied by an auditor,  $\Theta$  is the ex-post fraction of the losses from lawsuits borne by the auditor,  $E[L]$  is the present value of future losses from lawsuits, and  $E[\Theta]$  is the expected fraction of the legal losses borne by the auditor. In equilibrium, the total cost of the audit ( $E[C]$ ) is equal to audit fees.

<sup>12</sup> The CEOs of the International Audit Networks (2006) express concerns about the variation in auditor oversight and the enforcement of auditing standards across countries because the largest audit firms increasingly rely on their foreign counterparts to audit subsidiaries of global client firms and have affiliate firms around the world completing audits of foreign firms listed on U.S. exchanges.

the foreign audit firms conform to U.S. auditing standards.<sup>13</sup> However, the PCAOB has had difficulty in completing its international inspections on time and recently delayed 21 international inspections that were to be completed in 2008 (PCAOB 2008b)<sup>14</sup>. For U.S. investors investing in ADR firms, for investors investing in U.S. firms with significant portions of operations outside the U.S. that are audited by international auditors, and for regulators, the lack of consistent oversight may lead to questions and/or concerns about audit quality due to the potential for decreased audit effort. Accordingly, we propose the following alternate hypothesis regarding audit fees for firms cross-listed in the U.S. based on lower audit effort (stated in alternate form):

$H_{\text{lower audit effort}}$ : *Audit fees are lower for foreign firms cross-listed on a U.S. stock exchange relative to audit fees for U.S.-based firms.*

### **Measuring the Strength of the Auditing Regulatory Environment**

As discussed above, prior studies examining international audit fees incorporate numerous country-specific factors as determinants of audit fees including cross-country differences in legal regimes, equity markets, and corporate disclosures. These studies, however, do not directly examine the role of the auditing regulatory environment in setting audit fees. Because the importance of auditing is likely to vary across countries as a result of differences in the regulation, monitoring, and enforcement of the auditing profession, audit effort is likely to differ across countries. Omitting a control for the auditing regulatory environment from an audit

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<sup>13</sup> The PCAOB completes the inspection with its own staff to ensure quality in the inspection process, unless its staff determines they can rely on, at least to some extent, the auditing oversight board in the home country of the foreign audit firm. Rule 4012 discusses when the PCAOB can rely, at least in part, on non-U.S. inspections and those criteria deal with adequacy, transparency, and integrity of the inspection system; independence of the inspection process from the auditing profession; historical performance of the inspection process; and the threat of meaningful sanctions (PCAOB 2004).

<sup>14</sup> There are 128 unique non-US audit firms in our ADR sample. The majority of these audit firms are international affiliates of the Big 4 firms. Of these 128 audit firms, only 16 of them (or approximately 13%) have a PCAOB inspection report posted on the PCAOB website as of November 4, 2009. It is possible more firms have been inspected but the reports have not yet been posted.

fee regression in our setting could potentially bias the estimated coefficients, leading to incorrect inferences regarding audit fees and audit effort. In our case, the coefficient on an ADR indicator variable could be biased downward (assuming a lower value of auditing in certain countries relative to the U.S.) as a result of omitting a regulatory environment variable.

One reason prior studies may assume constant audit quality across countries is because it is difficult to find a good proxy for global audit quality. We use survey data from the IFAC, gathered as part of its compliance program, to fill this void and to measure and control for differences in the home-country auditing regulatory environment. The IFAC Board established the Member Body Compliance Program as a means to evaluate the quality of members' and associates' endeavors to meet IFAC membership requirements (see [www.ifac.org/ComplianceProgram](http://www.ifac.org/ComplianceProgram)). As part of Phase I of the compliance program implemented in 2004, professional accounting bodies in countries around the world completed an assessment of their regulatory and standard-setting framework.

The surveys contain detailed information about the accounting and auditing profession in each country. They include information on the legal framework governing financial reporting and auditing as well as securities market regulations; the legal and professional framework governing both accounting and auditing standards in the public and private sectors; the legal and professional framework governing ethics standards, education, and licensing requirements for accountants and auditors; and the legal and professional framework governing monitoring and enforcement of the securities markets, the accounting profession, and the auditing profession including quality assurance, investigation, and discipline.

We focus on survey responses related to audits of listed entities, and we capture information related to the standard-setting process; auditing oversight, inspections, and the

power to sanction; firm and partner rotation requirements; requirements for joint auditors; and whether the country has ongoing licensing requirements for its public accountants. Many of these factors (e.g. independence from the audit profession, inspection power, investigatory power, disciplinary power, and sanction power) are characteristics that the PCAOB considers in evaluating the strength of the inspections process in foreign countries (PCAOB 2004), which underscores their importance in assessing the auditing environment of a country. As discussed in Section IV below, we combine these measures using principal components analysis (PCA). Our assessment of the audit quality of any country is based on the specific survey responses posted on the IFAC website by individual countries.

In summary, our objectives for including a variable capturing the strength of the auditing regulatory environment in the audit fee regressions include: (1) determining how global variations in auditing environments influence audit fees and (2) reducing any bias on the estimated coefficient on our ADR indicator variable because ADR firms originate from countries with systematically different auditing environments as compared to the U.S. auditing environment. While we do not provide any formal hypotheses related to this measure, we do examine how it covaries with audit fees and whether its inclusion impacts the inferences from our audit effort hypotheses.

### **III. SAMPLE AND DESCRIPTIVE STATISTICS**

#### **Sample Selection**

Our sample selection process, as detailed in Table 1, begins with the Audit Analytics Audit Opinion file from which we obtain total audit fees paid to an external auditor for a given fiscal year. For the years 2000-2007, Audit Analytics includes a total of 137,249 audit opinions.

We eliminate 48,104 firm-years with missing audit fee data, and 155 firm-years with multiple audit opinions.<sup>15</sup> When we merge the Audit Analytics data with Compustat, 37,676 firm-years are not on Compustat (primarily mutual funds), 14,159 firm-years are missing financial data items, 20 firm-years are missing data to determine auditor tenure, and 1,156 are financial services firms (SIC 6000-6999), which we exclude to be consistent with prior studies. This sample selection procedure yields 35,979 firm year observations prior to matching with the ADR data.

We identify ADR firms in the sample using a dataset obtained from the Bank of New York Mellon (BNY) that includes all active and terminated depositary receipts between 1956 and 2008. We exclude 54 firm-years identified as ADRs by Compustat but not by BNY. We also exclude an additional 302 ADR firm-years with missing country-specific variables measuring the strength of the equity market and disclosure requirements. Our final sample includes 35,623 firm-years, including 1,600 ADR firm-years.

The BNY ADR listing contains 4,098 observations of which 1,560 are private placements, 1,444 are Level I ADRs, 483 are Level II ADRs, and 611 are Level III ADRs.<sup>16</sup> Because there are no periodic reporting requirements for the private placements and Level I ADRs, data is not readily available for these observations. After merging with Audit Analytics and Compustat and retaining the countries that have the country-specific equity and disclosure variables, we retain 384 unique ADR firms and 1,600 ADR firm-years. We only include ADR firm-years in the sample during periods that follow (precede) the ADR's effective (termination)

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<sup>15</sup> For firm-years with duplicate audit opinions, we retain the first audit opinion based on the filing date of the related report.

<sup>16</sup> The listing provided at the Bank of New York Mellon website (see [www.adrbnymellon.com](http://www.adrbnymellon.com)) includes only active ADRs. We obtained a complete listing of both active and inactive ADRs including the effective dates and termination dates, if applicable, and the ADR level, from a Bank of New York Mellon representative. The effective dates range from January 1, 1956 to December 31, 2008.

date. Our comparison sample includes all other non-ADR Compustat firms with complete data on Compustat and Audit Analytics, as discussed above.

## **Descriptive Statistics**

We present descriptive statistics comparing ADR firms to U.S. firms in Table 2. The ADR firm-years are significantly different from the average U.S. firm-years along many dimensions. ADR firms are, on average, significantly larger and pay higher audit fees. They are more profitable with a lower frequency of going concern opinions. ADR firms have a lower ratio of inventory and receivables to total assets, a lower quick ratio, and lower leverage on average although the median leverage is greater for ADR firms. In terms of growth, ADR firms have a lower market-to-book ratio and lower one year change-in-sales, on average. ADR firms are more likely to hire a Big N auditor, are less likely to report extraordinary items or discontinued operations, and are less likely to have a financial restatement. ADR firms are also less likely to file Section 404 reports on internal controls and are less likely to report material weaknesses although this is more likely to be the outcome of varying effective dates for Section 404 compliance requirements.<sup>17</sup>

Table 3 provides more detailed information on the ADR firms and firm-years. Panel A reports the distribution of ADR firm-years by level and by the accounting standards used by ADR firms in their SEC filings. We hand-collect the accounting standards information from the

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<sup>17</sup> U.S. accelerated and large accelerated filers were required to comply with Sarbanes-Oxley Section 404 requirements for fiscal years ending on or after November 15, 2004. Foreign private issuers (including our ADR sample) that meet the definition of a *large* accelerated filer were required to begin complying with Section 404 requirements for fiscal years ending on or after July 15, 2006. Foreign private issuers that meet the definition of an accelerated filer were required to comply with Section 404(a) requirements (i.e., providing a management report on internal controls), for fiscal years ending on or after July 15, 2006 and to comply with Section 404(b) requirements (i.e., receiving an auditor's attestation on internal controls), for fiscal years ending on or after July 15, 2007. All non-accelerated filers, including foreign private issuers that are not accelerated or large accelerated filers, must begin to comply with Section 404(a) for fiscal years ending on or after December 15, 2007. See SEC Release Nos. 33-8618; 34-52492 (SEC 2005a), 33-8730A; 34-54294A (SEC 2006), and 33-8934; 34-58028 (SEC 2008b).

audit reports contained in the SEC filings.<sup>18</sup> We code the accounting standards as either IFRS, U.S. GAAP, or domestic standards (i.e., the company follows the standards established in the home country) recognizing that most ADR firms reporting in either IFRS or domestic standards must then reconcile their financial statements to U.S. GAAP.

As reported in Panel A of Table 3, there are only 46 Level I firm-years in our final sample (traded OTC) as these firms are not required to file publicly-available financial statements with the SEC. There are 736 Level II firm-years and 818 Level III firm-years. Approximately 48% (388 of 818) of the Level III ADR firm-years file under domestic standards, while 14% (117 of 818) file IFRS and 38% (313 of 818) file in U.S. GAAP. The distribution is similar for the Level II firm-years (44% [326 of 736] domestic standards, 20% [145 of 736] IFRS and 36% [265 of 736] U.S. GAAP). Panel B of Table 3 reports the distribution of the ADR firm-years across regions. The largest representation is from Continental Europe with 32.8%, followed by Latin America with 22.7%, U.K. with 17.3%, and North Asia with 12.6%. Thus, our sample represents a variety of different regions, countries, and accounting standards.

#### **IV. MULTIVARIATE ANALYSES OF AUDIT FEES**

Ideally, we would examine audit effort directly rather than concentrating on audit fees. However, audit effort data is not typically available to researchers. Prior studies that examine audit effort and audit fees provide evidence that differences in fees capture variations in audit effort rather than simply reflecting fee premia or fee discounts (i.e., higher audit fees reflect higher audit effort). Studies using data from U.S. firms conclude that audit fees proxy for audit effort (e.g., Bell et al. 2001; Bedard and Johnstone 2006). Using a proprietary international

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<sup>18</sup> Compustat reports the accounting standard used to prepare the financial statements in the 20-F annual filing in their ACCTSTD variable; however, we noted several discrepancies with the standards as disclosed in the audit report. Thus, we chose to hand-collect the data rather than rely on the Compustat coding.

dataset, Choi et al. (2008) provide direct evidence supporting claims that audit fees capture the variation in audit effort. Consistent with prior studies, we draw inferences on audit effort based on audit fees.

To compare audit fees for ADR firms to U.S. firms, we develop a fee model following prior studies (Seetharaman et al. 2002; Whisenant, Sankaraguruswamy and Raghunandan 2003; Ghosh and Lustgarten 2006; Hogan and Wilkins 2008; Choi et al. 2008, 2009), and we include an indicator variable for ADR firms. We use ordinary least squares to estimate the following model.

$$\begin{aligned}
 LNFEE_{it} = & a_0 + \sum_{q=1}^5 a_q(\delta_q * LNTA_{it}) + a_6 INVREC_{it} + a_7 FOREIGN_{it} + a_8 MA_{it} + \\
 & a_9 QRATIO_{it} + a_{10} ROA_{it} + a_{11} LOSS_{it} + a_{12} LEV_{it} + a_{13} GROWTH_{it} + \\
 & a_{14} MKTBK_{it} + a_{15} RESTATE_{it} + a_{16} XDOPS_{it} + a_{17} BUSY_{it} + \\
 & a_{18} BIGN_{it} + a_{19} INITIAL_{it} + a_{20} GCO_{it} + a_{21} 404RPT_{it} + a_{22} 404ICW_{it} + \\
 & a_{23} PCGDP_{it} + a_{24} CIV\_COM_i + a_{25} EQUITY_i + a_{26} DISCLOSURE_i + \\
 & a_{27} ENFORCE_i + a_{28} ADR_{it} + \text{Industry and year controls} + \varepsilon_{it} \quad (1)
 \end{aligned}$$

The dependent variable,  $LNFEE_{it}$ , is the natural log of the total audit fees as reported in the Audit Analytics Opinions File. We include measures to capture client size, complexity and business risk, which prior studies have shown to be positively associated with audit fees. Recognizing that ADR firms are generally larger and that prior research finds that the coefficient on log of assets varies with client size (e.g. Bell et al. 1994; Carson and Fargher 2007), our concern is that the natural log of total assets may not capture the entire effect of size on audit fees and that our ADR variable is simply a proxy for firm size. Thus, consistent with Carson and Fargher (2007) we include  $\delta_q$  which is an indicator variable for each size quintile to allow the slope of the coefficient on  $LNTA_{it}$  to vary with client size.  $LNTA_{it}$  is the natural log of total assets.

We use three measures for audit complexity:  $INVREC_{it}$ ,  $FOREIGN_{it}$  to capture the complexity in auditing firms with international operations, and  $MA_{it}$  to capture merger or acquisition activity. Client business risk is higher for clients with poor financial performance, lower liquidity and higher leverage. We include the quick ratio ( $QRATIO_{it}$ ),  $ROA_{it}$ ,  $LOSS_{it}$ , and leverage ( $LEV_{it}$ ) to capture business risk. Growth in sales ( $GROWTH_{it}$ ) and the market-to-book ratio ( $MKTBK_{it}$ ) capture current and future potential growth and should be positively associated with audit fees as rapid growth increases audit risk.

Other engagement-specific factors that may be associated with audit fees include whether the firm announced a financial statement restatement, whether the firm reports extraordinary items or discontinued operations, whether the audit occurs during busy season, whether the auditor is a Big N or non-Big N firm, whether or not the client is a relatively new client, whether the client received a going concern opinion, whether the client and auditor filed a Section 404 internal control opinion, and whether the Section 404 report noted material weaknesses in internal controls (Ghosh and Lustgarten 2006; Hogan and Wilkins 2008; Raghunandan and Rama 2006). All of these variables are more fully defined in Table 2.

Our variable of interest,  $ADR_{it}$ , equals 1 if the client firm is listed on the Bank of New York Mellon ADR listing and 0 otherwise. We first estimate the audit fee regression without a control for the strength of auditing oversight. A positive coefficient on  $ADR_{it}$  is consistent with the incremental audit effort hypothesis, while a negative coefficient on  $ADR_{it}$  is consistent with the lower audit effort hypothesis. In subsequent regressions, we include a variable capturing the strength of the auditing regulatory environment within the various countries to control for the effects of the auditing environment on audit fees. We expect audit effort and possibly audit fees per hour to be higher in stronger regulatory environments.

Similar to Choi et al. (2008, 2009), we include country- and year-specific per capita GDP to control for differences in standards of living across countries and thus potential differences in compensation that could impact hourly billing rates. We also include the country-specific variables *CIV\_COM* and *ENFORCE* to capture variations in legal regimes. We measure *CIV\_COM* using the LaPorta et al. (1998) classification of the legal origin of commercial law, i.e., whether a country is identified as a civil law or common law country. If a firm included in our sample originates from a country not included in LaPorta et al. (1998), we determine the value of *CIV\_COM* for such firms using the description of the legal environment for the home country as described in Reynolds and Flores (1989). *ENFORCE* is taken from Leuz, Nanda, and Wysocki (2003) and is measured as the mean score across three legal variables used in LaPorta et al. (1998): (1) the efficiency of the judicial system, (2) an assessment of rule of law, and (3) the corruption index, where all three variables range from zero to ten. To the extent that audit fees are higher for ADRs facing exposure to litigation in their home country and in the U.S., we expect the coefficients on these variables to be positive.

We include the country-specific variables *EQUITY* and *DISCLOSURE* to capture the importance of the equity market and the country's disclosure level, respectively. Choi et al. (2008) find *DISCLOSURE* to be positively associated with audit fees and *EQUITY* to be negatively associated with audit fees suggesting that, after controlling for other factors that affect audit fees, audit fees are higher in countries where debt is a more important source of external financing as opposed to equity. Leuz et al. (2003) compute the *EQUITY* measure, which is intended to capture the importance of the equity market, by calculating the mean rank across three variables used in La Porta et al. (1997): (1) the ratio of the aggregate stock market capitalization held by minorities to gross national product, (2) the number of listed domestic

firms relative to the population, and (3) the number of IPOs relative to the population. We re-create this measure using the home countries of the firms in our sample. The *DISCLOSURE* variable is taken from the Center for International Financial Analysis and Research (CIFAR) index which measures the level of disclosure required in each country. Table 4 provides detail for each of the 33 countries included in our sample for the *CIV\_COM*, *EQUITY*, *DISCLOSURE*, *ENFORCE*, and *PCGDP* variables. The *PCGDP* values in Table 4 represent the average of the annual GDP per capita (in thousands) for each country during the 2000-2007 time period, while the other values are constant across years for each country. Finally, we include controls for each year and for each of the Fama-French 48 industries.

## Regression Results

The regression results are reported in Table 5. We first estimate the regressions without our measure of the strength of the auditing regulatory environment. The first two columns report the results of estimating regression equation (1) including the  $ADR_{it}$  indicator variable while the third and fourth columns report the results after separating  $ADR_{it}$  into two indicator variables representing Level I and II ADRs ( $LI\&II$ )<sup>19</sup> and Level III ADRs ( $LIII$ ). The coefficients on all quintiles of client size ( $LNTA_{it}$ ) are positive and significant at  $p < 0.001$  (all reported p-values are based on two-tailed tests). The coefficients on our measures of complexity ( $INVREC_{it}$ ,  $FOREIGN_{it}$ , and  $MA_{it}$ ) are also all positive and significant at  $p < 0.001$ . Client profitability is inversely related to the natural log of audit fees as the coefficient on  $ROA_{it}$  is negative and highly significant while the coefficient on  $LOSS_{it}$  is positive and highly significant. Audit fees are also

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<sup>19</sup> We combine Level I and Level II ADRs into one group for two reasons. First, the sample includes a small number of Level I observations. Second, the Level I ADRs in the sample are filing financial statements with the SEC, implying that they have subjected themselves to the same reporting requirements and liability exposure as the Level II ADRs.

negatively associated with liquidity ( $QRATIO_{it}$ )  $p < 0.001$ . Contrary to expectations, the coefficient on the year-over-year percentage change in sales ( $GROWTH_{it}$ ) is negative and significant ( $p < 0.001$ ), although the coefficient on the other proxy for growth,  $MKTBK_{it}$ , is positive and significant ( $p < 0.001$ ). As expected, audit fees are positively associated with  $LEV_{it}$ , the reporting of extraordinary items or discontinued operations ( $XDOPS_{it}$ ), busy season audits ( $BUSY_{it}$ ), Big N auditors ( $BIGN_{it}$ ), going concern opinions ( $GCO_{it}$ ), a Section 404 audit ( $404RPT_{it}$ ), the reporting of material weaknesses in a Section 404 audit ( $404ICW_{it}$ ), per capita GDP in the home country ( $PCGDP_{it}$ ), a higher required level of disclosure ( $DISCLOSURE$ ), and the strength of legal enforcement in a given firm's home country ( $ENFORCE$ ).<sup>20</sup> Finally, while the importance of the equity market ( $EQUITY$ ) is negatively related to audit fees, a finding consistent with Choi et al. (2008), we find no significant relation between audit fees and  $RESTATE_{it}$ ,  $INITIAL_{it}$  and  $CIV\_COM_{it}$ .<sup>21</sup>

The coefficient on our variable of interest,  $ADR_{it}$ , is positive and significant ( $p=0.01$ ), which is consistent with the incremental audit effort hypothesis. On average, audit fees are significantly higher for foreign firms cross-listed on U.S. exchanges as compared to their U.S. counterparts, after controlling for other engagement-specific factors and country-level variables. The magnitude of the  $ADR_{it}$  coefficient suggests that, *ceteris paribus*, ADR firms pay approximately 23 percent ( $e^{0.209} - 1$ ) more in audit fees relative to those of U.S. firms.

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<sup>20</sup> While Choi et al. (2008, 2009) control for the litigation environment using the natural log of the Wingate (1997) measure ( $REGIME$ ), this measure is not available for all of our sample countries. Therefore, we include the  $ENFORCE$  variable from Leuz et al. (2003). Nonetheless, when we replace the  $ENFORCE$  variable with the  $REGIME$  variable we find qualitatively similar results for the coefficient on  $ADR$ . The coefficient on  $REGIME$ , however, is positive but not significant, which is likely due to its high correlation with  $ADR$  ( $\rho_{REGIME} = -0.9149$ ;  $VIF_{REGIME} = 22.65$ ).

<sup>21</sup> In this regression, the VIFs for  $PCGDP_{it}$ ,  $ENFORCE$ ,  $CIV\_COM_{it}$ , three of the industry controls, and two of the year indicators exceed 10. While the coefficients for the first two variables are significant despite their inflated standard errors, high multicollinearity could be a possible explanation for the lack of significance on the  $CIV\_COM$  coefficient. Thus, we caution readers on making inferences with respect to this variable.

The second set of results reported in Table 5 separate the ADR firms into the *LI&II* and *LIII* groups based on whether they are listed and whether they are allowed to raise capital in the U.S. The coefficient on the Level I and II ADR variable (*LI&II*) is positive and significant ( $p < 0.01$ ). The coefficient on Level III ADR indicator is also positive and significant ( $p < 0.05$ ). Our results suggest that audit fees for both groups are significantly greater than audit fees for U.S. firms after controlling for client- and engagement-specific characteristics and country-level factors. While the coefficient on *LI&II* is larger in magnitude than that on *LIII* (0.232 versus 0.149), untabulated F-tests indicate that the difference is statistically insignificant ( $p = 0.27$ ).<sup>22</sup> This is consistent with our prediction that audit fees would be higher for ADR firms given that auditors of these firms must exert more effort to audit the financial statement results under two different sets of accounting standards and are subject to litigation in their home country and under U.S. Federal Securities laws.

In the last two columns in Table 5, we disaggregate the ADR firm-years to examine the effects of the accounting standards they use in their U.S. filings on audit fees. Specifically, we construct three indicator variables based on whether the ADR firm-year follows IFRS, U.S. GAAP, or domestic standards for financial reporting in U.S. filings. We find that ADR firm audit fees are significantly higher for each of these groups than those paid by U.S.-based companies, consistent with additional audit effort for audits of ADR firms. Untabulated F-tests

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<sup>22</sup> We also hand collect data on how an ADR firm files its financial statements with the SEC (i.e., whether it files a 10-K or reconciles its financial statements prepared under IFRS or domestic standards to U.S. GAAP in Item 17 or Item 18 of a 20-F. We then replace *LI&II* and the *LIII* variables with the three indicators representing a 10-K, Item 17, of Item 18 and re-estimate the regression from Table 5. While untabulated results suggest that the Item 18 and 10-K indicator variables are significantly positive ( $p < 0.01$ ), we are reluctant to draw conclusions because the vast majority of firms fall into the Item 18 category ( $n = 1,378$ ). Only 172 firm-years filed financial statements in Item 17 and 50 firm-years (representing 16 firms) filed their reports in 10-Ks, suggesting that even a majority of the Level II filers complete the more extensive reconciliation included in Item 18.

suggest that the coefficient on *IFRS* is significantly larger than the coefficient on *ADRGAAP* ( $p=0.06$ ), while the coefficient on *IFRS* is not significantly different than the coefficient on *DOMSTD*. Also, the difference between the coefficients on *ADRGAAP* and *DOMSTD* is statistically insignificant. These results suggest that ADR firm auditors expend the most effort for clients reconciling from IFRS to U.S. GAAP.<sup>23</sup>

### **Auditing Regulatory Environment**

Table 6 includes a summary of IFAC survey information that we use to develop our measure of the strength of the auditing regulatory environment for each of the 33 countries in our sample. We combine these individual measures using PCA. Our objective is to examine the overall auditing regulatory environment in a given country and how it impacts audit fees; we do not analyze whether and how each of these individual variables impact audit fees. Accordingly, instead of including the individual variables we combine them into a principal component score using PCA, which allows the new variable to capture the common variation in the underlying variables.

The first two columns relate to the auditing standard-setting process. The first measure, *INDSTD*, equals 1 if the auditing standard-setting body is not a government agency, but is considered “independent” (i.e. not a “private organization established by the profession”, Question 44 in Section 5B of the IFAC survey), and 0 otherwise. The second measure, *GOVSTD*, equals 1 if the auditing standard-setting body is a government agency (Question 44 in Section 5B), and 0 otherwise. The third measure, *OVERSIGHT*, captures the existence of an auditing oversight body as well as whether that oversight body carries out inspections and

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<sup>23</sup> While the marginally significant coefficient on *ADRGAAP* is surprising, it is still possible that auditors are attesting to financial results prepared under two different sets of accounting standards if the ADR firm files financial statements prepared under domestic accounting standards in their home country.

sanctions. *OVERSIGHT* equals 1 if the country has an auditing oversight body (Question 111 in Section 10C of the IFAC survey is “yes”) that does not have sanction authority (Question 111e in Section 10C of the IFAC survey) or conduct inspections (Question 111d in Section 10C of the IFAC survey), 2 if the country has an auditing oversight body that has sanction authority but does not conduct inspections, 3 if the country has an auditing oversight body that conducts inspections and has sanction authority, and 0 otherwise (i.e. if the answer to Question 111 in Section 10C is that no audit oversight body exists). The next two columns indicate whether partner rotation is required (*PROTATE*=1) or audit firm rotation is required for audits of listed entities (*FROTATE*=1) based on the answer to Question 42 in Section 4 of the IFAC survey. Finally, *JOINT* equals 1 if the answer to Question 41 in Section 4 indicates that a joint audit is required for listed entities, and *LICENSE* equals 1 when the answer to Question 79 in Section 7B indicates there are ongoing requirements (e.g. continuing education) to retain a license.

The last column of Table 6 includes *AUFACTOR*, the principal component scores from a PCA of all of the variables in the first seven columns. The eigenvalue for this component is 2.81 and explains 40.1% of the variation in the underlying variables. The untabulated correlations indicate that *AUFACTOR* is positively correlated with *INDSTD* (0.8816), *OVERSIGHT* (0.8729), *PROTATE* (0.7890), and *LICENSE* (0.3598), suggesting that the score is higher in countries with an independent standard-setting body, an auditing oversight body with the right to inspect and sanction, partner rotation, and ongoing requirements to maintain a license to practice as an auditor. The score is negatively correlated with *GOVSTD* (-0.3423), *FROTATE* (-0.5838), and *JOINT* (-0.2472), suggesting that it is lower when a government agency is in charge of standard-setting, when the country requires periodic audit firm rotation, and when the country requires joint auditors to audit listed companies.

We present the countries in Table 6 in descending order according to the value of *AUFACTOR*. While we are hesitant to draw too many conclusions from this ranking because the measure is somewhat subjective and noisy, it does provide some evidence of which countries have stronger regulatory environments (e.g. U.S., Australia, U.K.) relative to countries with weaker regulatory environments (e.g. Peru, Turkey, Venezuela).<sup>24</sup>

Table 7 reports the results of estimating regression equation (1) including the strength of the auditing regulatory environment score as an additional control variable. This measure is intended to capture differences in audit effort and/or differences in billing rates (i.e., the “value of auditing” across countries). The coefficients and significance levels on our control variables are consistent with those presented in Table 5 and thus we do not discuss those results here. The coefficient on *AUFACTOR* is positive and significant ( $p=0.01$ ) suggesting audit fees are higher in countries with stronger auditing regulatory environments.<sup>25</sup> The significantly positive coefficient on *ADR* in Table 7 suggests that ADR firms pay significantly higher audit fees, on average, than do U.S. firms even after controlling for the strength of the auditing regulatory environment in the ADR firms’ home countries.<sup>26</sup> The magnitude of the coefficient on *ADR* suggests that ADR firms pay approximately 39 percent higher fees relative to those of U.S. firms, which is slightly larger than the fee difference documented in Table 5 (i.e., prior to controlling for the strength of the auditing regulatory environment). Higher audit fees provide evidence of a cost of the cross-listing decision that is in addition to the costs of SEC regulatory

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<sup>24</sup> Five of the top eleven countries according to the *AUFACTOR* rankings are countries with which the PCAOB has “cooperative arrangements” (Australia, the Republic of Korea, the Financial Supervisory Authority in Norway, the Accounting and Corporate Regulatory Authority in Singapore, and the Professional Oversight Board in the United Kingdom[PCAOB 2008a]). Canada is the only other country which has a cooperative arrangement with the PCAOB. A cooperative arrangement indicates the PCAOB is willing to perform joint inspections within those countries.

<sup>25</sup> Consistent with the results for the full sample, the coefficient on *AUFACTOR* is positive and significant ( $p=0.035$ ) when we estimate equation (1) for ADR firms only.

<sup>26</sup> We find qualitatively similar results for the coefficients on *AUFACTOR* and *ADR* when we replace the raw score with the percentiles of the raw values to control for outliers.

and reporting compliance, legal costs and underwriting fees as discussed in prior literature (Doidge et al. 2004).

### **Predicted Fees across Countries**

While we find significant, positive coefficients on *ADR* and *AUFACTOR*, there are several significant country-specific determinants of audit fees that may result in an overall higher or lower predicted audit fee relative to the U.S. Using the regression coefficients from Table 7, we calculate predicted fees for a median ADR firm in fiscal 2004 in the consumer goods industry (with *FOREIGN*=1, *MA*=0, *LOSS*=0, *RESTATE*=0, *XDOPS*=0, *BUSY*=1, *BIGN*=1, *INITIAL*=0, *GCO*=0, *404RPT*=0, *404ICW*=0 and the appropriate values for any country-specific variables). To provide a few examples, predicted fees for this median company if they are located in the U.S. are approximately \$2.2 million, while predicted fees if they were located in Brazil would be approximately \$1.1 million (50% of the U.S. fee), or \$2.8 million if they were located in the U.K. (130% of the U.S. fee). Thus, while ADR firms pay an incremental fee for cross-listing, the strength of the auditing regulatory environment and other country-specific factors can reduce (increase) the overall fee such that it may be lower (higher) than a U.S.-based firm would pay.

### **Sensitivity Tests**

#### ***Size***

As discussed in Section III, the average ADR firm is significantly larger than the average U.S. firm. While our multivariate analyses allow the slope of the coefficient on *LNTA<sub>it</sub>* to vary with client size, we run a number of sensitivity tests to assess whether our ADR variable is

simply a proxy for firm size. For brevity, we only discuss the results in this subsection rather than tabulate them separately.

Our first size sensitivity follows Seetharaman et al. (2002) who create a matched sample by industry, year, and size. For each Fama-French 48 industry in a given year, we select the same number of the largest U.S firm-years as the number of ADR firm-years, resulting in 3,200 observations (1,600 ADR firm-years and 1,600 U.S firm-years). For example, our sample contains 11 ADR firms from the Retail industry for 2003. As a result, we select 11 U.S. control firms by choosing the largest 11 non-ADRs from the Retail industry with sufficient data for 2003. The untabulated means (medians) for each group suggest that the U.S. firm-years are significantly larger than the ADR firm-years [\$17.1 billion versus \$12.0 billion, respectively (\$12.3 billion versus \$4.3 billion, respectively)]. When we re-estimate the results from Table 7, we find that the *ADR* coefficient is 0.307, implying a fee difference of 36% ( $p < 0.01$ ).

In our second size sensitivity test, we replace the five size quintile control variables with  $LNTA_{it}$  and  $LNTA_{it}^2$ . When we re-estimate the regression from Table 7, we find that the coefficients on  $ADR_{it}$ ,  $LNTA_{it}$  and  $LNTA_{it}^2$  are all positive and significant ( $p < 0.01$ ).

Finally, we restrict our sample to include only the largest size decile of our sample firms. This restricted sample includes 2,770 U.S. firms-years and 792 ADR firm-years. While the size difference between the two groups decreases within the largest size decile, the untabulated mean (median) total assets of the ADR firm-years of approximately \$23 billion, (\$17 billion) remains significantly larger than that of the U.S. firm-years of approximately \$16 billion (\$11 billion). When we re-estimate the regression from Table 7 on this restricted sample, we find qualitatively

similar results to those originally reported.<sup>27</sup> Taken together, the results from the size sensitivity tests suggest that the significantly positive coefficient on *ADR* is not likely to be driven by the fact that the ADR firm-years are significantly larger than their U.S. counterparts. Additionally, *AUFACTOR* remains positive and significant ( $p \leq 0.05$ ) in all of the regressions estimated for the size sensitivity tests.

### ***Auditing Regulatory Environment Score***

A covariance matrix or, in our case, a Pearson correlation matrix is the input to PCA. With categorical data such as ours, however, these correlations are generally constrained in that they do not span the entire range -1 and +1 and tend to underestimate the correlations of the underlying latent variables (see e.g. Muthén 1983). One way to correct for this issue is to create a tetrachoric correlation matrix (as an estimate of the Pearson correlation matrix) and to perform the PCA using this matrix (Gorsuch 1983, 296).<sup>28</sup> One requirement of this method is that all of the variables are dichotomous. As a result, we collapse our *OVERSIGHT* variable into an indicator variable that equals 1 when the original variable is greater than 0, and 0 otherwise.

In untabulated results, we find that our main inferences are unchanged when we perform the PCA using the tetrachoric correlation matrix. We find a significantly positive relation between audit fees and (1) the auditing regulatory environment score and (2) the *ADR* variable after controlling for the auditing regulatory environment. The principal component score explains approximately 62% of the variation in the underlying variables, and the correlations between the score and the underlying variables have the same signs and similar, but larger absolute magnitudes than those for the original measure.

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<sup>27</sup> Our Table 7 results also hold when we include only the largest quintile of firms and when we exclude all firm-years with a non-Big N auditor.

<sup>28</sup> While tetrachoric correlations correct for potentially understated Pearson correlations, a key underlying assumption is that the dichotomous variables measure latent, continuous constructs that are normally distributed (Gorsuch 1983).

As an alternate sensitivity test, we perform a multiple correspondence analysis (MCA), which is a counterpart to PCA for categorical variables (Le Roux and Rouanet 2005, 10-11). The untabulated MCA results suggest that the auditing regulatory environment score explains 68% of the variation in the underlying data. The correlation coefficient between the MCA and PCA measures is -0.9884, suggesting that these measures are very similar. When we replace the PCA scores with the MCA scores and re-estimate our Table 7 regression, we find that our inferences are unchanged for both the auditing regulatory environment score and the impact of *ADR* on audit fees.<sup>29</sup> Thus, while our data violates the normality assumption of PCA, our alternative tests suggest that our results are not sensitive to whether we use PCA or another multivariate statistical method.

## V. SUMMARY

In this paper, we examine audit fees for foreign firms cross-listed in the U.S relative to the audit fees of domestic firms in the U.S. Similar to auditors of U.S.-based firms, auditors of foreign firms cross-listing in the U.S. are subject to U.S. Federal Securities laws and must comply with U.S. auditing and independence standards. However, auditors of foreign firms cross-listed in the U.S. are required to attest to any reconciliation of financial information to U.S. GAAP, effectively attesting to financial results prepared under two different sets of accounting standards. We hypothesize this additional audit requirement for auditors of cross-listed firms results in higher audit fees relative to those of U.S.-based firms.

An alternative hypothesis is that audit effort is lower for ADR firms. While ADR-firm auditors have strong incentives to fully comply with U.S. auditing standards because they are

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<sup>29</sup> The signs on the MCA score are the opposite of those for the PCA score, resulting in a negative coefficient on the MCA score. This difference, however, does not impact the interpretation of the results.

subject to inspections by the PCAOB, in practice the PCAOB has had to delay the completion of many of its inspections of the auditors of foreign firms listed on U.S. exchanges (PCAOB 2008b). Given the potential for less stringent monitoring of auditors of ADR firms, auditors could expend lower audit effort without suffering regulatory penalties associated with this lower effort. Thus, the lower audit effort would result in lower audit fees for ADR firms relative to those of U.S. domestic firms.

Consistent with the reconciliation to U.S. GAAP resulting in ADR-firm-auditors expending more effort, we find that audit fees are significantly higher for ADR firms. This finding extends prior studies examining the audit fee effects of litigation exposure for foreign firms cross-listed in the U.S. relative to those of foreign firms that are not cross-listed (e.g., Choi et al. 2008, 2009; Seetharaman et al. 2002). Our results document an additional cost to firms cross-listing in the U.S.

We also extend prior research that examines country-specific factors impacting audit fees, such as the legal environment and the importance of the equity market, by examining the impact of the auditing regulatory environment on audit fees. We construct a measure of the strength of auditing oversight in various countries and find this measure is significantly, positively associated with audit fees. After controlling for the regulatory environment, the incremental audit fee we document for cross-listed firms increases from 23% to 39%, suggesting it is important to control for the auditing environment in studies examining audit fees across countries. We believe these findings will be of interest to academics, audit firms, and regulators who are concerned about audit quality differences across countries.

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**TABLE 1**  
**Sample Selection**

		<b>Firm-years</b>	
<b>Panel A: Overall Sample Selection Process</b>			
Audit Analytics Opinion File firm-years from 2000-2007		137,249	
Missing audit fee data		(48,104)	
Multiple audit opinions		(155)	
Not found in Compustat		(37,676)	
Missing Compustat financial data		(14,159)	
Cannot determine Auditor tenure		(20)	
Financial services firms		(1,156)	
Compustat ADRs not identified by Bank of New York		(54)	
Missing country-level governance variables		(302)	
Firm-years available for analysis		<u>35,623</u>	
<b>Panel B: Yearly Distribution</b>			
	<b>Non-ADRs</b>	<b>ADRs</b>	<b>Total</b>
2000	3,008	13	3,021
2001	4,277	22	4,299
2002	4,682	230	4,912
2003	4,770	316	5,086
2004	4,777	303	5,080
2005	4,632	292	4,924
2006	4,179	248	4,427
2007	3,698	176	3,874
Total	<u>34,023</u>	<u>1,600</u>	<u>35,623</u>

American Depository Receipts (ADRs) are identified using the Bank of New York Mellon database which includes all active and terminated depository receipts between 1956 and 2008. Our final sample includes 35,623 firm-years, including 1,600 ADR firm-years.

**TABLE 2**  
**Descriptive Statistics**

	Non-ADRs		ADRs		t-test	Wilcoxon
	Mean	Median	Mean	Median	p-value	p-value
<i>AUDFEES</i> (\$millions)	0.999	0.312	3.914	1.631	0.0000	0.0000
<i>ASSETS</i> (\$millions)	1,752.06	162.07	11,968.27	4326.642	0.0000	0.0000
<i>INVREC</i>	0.262	0.223	0.210	0.186	0.0000	0.0000
<i>FOREIGN</i>	0.204	0	0.691	1	0.0000	0.0000
<i>MA</i>	0.176	0	0.163	0	0.1848	0.1848
<i>QRATIO</i>	2.297	1.388	1.611	1.116	0.0000	0.0000
<i>ROA</i>	-0.196	0.017	0.022	0.044	0.0000	0.0000
<i>LOSS</i>	0.435	0	0.237	0	0.0000	0.0000
<i>LEV</i>	0.271	0.173	0.250	0.244	0.0010	0.0000
<i>GROWTH</i>	0.303	0.088	0.193	0.133	0.0000	0.0000
<i>MKTBK</i>	2.268	1.310	1.492	1.094	0.0000	0.0000
<i>RESTATE</i>	0.129	0	0.106	0	0.0058	0.0058
<i>XDOPS</i>	0.218	0	0.167	0	0.0000	0.0000
<i>BUSY</i>	0.698	1	0.748	1	0.0000	0.0000
<i>BIGN</i>	0.724	1	0.969	1	0.0000	0.0000
<i>INITIAL</i>	0.104	0	0.149	0	0.0000	0.0000
<i>GCO</i>	0.104	0	0.034	0	0.0000	0.0000
<i>404RPT</i>	0.275	0	0.204	0	0.0000	0.0000
<i>404ICW</i>	0.035	0	0.009	0	0.0000	0.0000
<i>PCGDP</i> (\$thousands)	39.502	39.812	24.828	27.219	0.0000	0.0000
<i>CIV_COM</i>	0	0	0.656	1	0.0000	0.0000
<i>EQUITY</i>	28	28	19.295	21.200	0.0000	0.0000
<i>DISCLOSURE</i>	71	71	65.551	65.000	0.0000	0.0000
<i>ENFORCE</i>	9.500	9.500	8.051	8.900	0.0000	0.0000

The sample includes 35,623 firm-years including 1,600 ADR firm-years from the 2000-2007 period. All continuous variables are winsorized at the top and bottom 1% level. All p-values are from two-tailed tests. The variables are defined as follows: *AUDFEES* is annual audit fees; *ASSETS* is year-end total assets; *INVREC* is the year-end ratio of the sum of inventory and accounts receivable to total assets; *FOREIGN* equals one when foreign currency translation adjustments are present, zero otherwise; *MA* equals one for firms with mergers, zero otherwise; *QRATIO* is the year-end ratio of current assets minus inventory to total current liabilities; *ROA* is income before extraordinary items divided by lagged total assets; *LOSS* equals one when *ROA* is less than zero, zero otherwise; *LEV* is the year-end ratio of the sum of debt in current liabilities and long-term debt to total assets; *GROWTH* is the percentage change in sales between the current and prior year; *MKTBK* is the year-end ratio of the market value of equity plus total debt to total assets; *RESTATE* equals one when a firm announces a restatement during the year, zero otherwise; *XDOPS* equals one when a firm reports extraordinary items or discontinued operations, zero otherwise; *BUSY* equals one for firms with fiscal year ends between 12/31 and 1/15, zero otherwise; *BIGN* equals one when the auditor is a Big N audit firm, zero otherwise; *INITIAL* equals one for the first year of the engagement, zero otherwise; *GCO* equals one when an auditor issues a going-concern audit opinion, zero otherwise; *404RPT* equals one when the AuditAnalytics 404 file has an auditor opinion on internal controls, zero otherwise; *404ICW* equals one when the AuditAnalytics 404 file reports a material weakness in internal controls, zero otherwise; *PCGDP* is per capital gross domestic product in thousands of U.S. dollars from the October 2008 IMF World Economic Outlook Database; *CIV\_COM* equals one (zero) when a country is a civil code (common law) legal regime; *EQUITY* is the mean rank of the following country-specific variables from LaPorta et al. (1997): the ratio of stock market capitalization held by minorities to GNP, the proportion of listed domestic firms in the population, and the proportion of IPOs in the population (Leuz et al. 2003); *DISCLOSURE* is the country level disclosure from the Center for International Financial Analysis and Research (CIFAR) index; and *ENFORCE* is the mean score of the following LaPorta et al. (1998) variables: the efficiency of the judicial system, the assessment of rule of law, and the corruption index (Leuz et al. 2003).

**TABLE 3**  
**Descriptive Statistics for Cross Listed Firms in the US**

<b>Panel A: Distribution of ADR Levels and Accounting Standards</b>				
ADR Level	Accounting Standard			Total
	Domestic	IFRS	US GAAP	
Level I	19	6	21	46
Level II	326	145	265	736
Level III	388	117	313	818
Total	733	268	599	1,600

  

<b>Panel B: Distribution of ADR Firm-years by Region</b>		
	Frequency	Proportion
Australia & New Zealand	83	5.2%
Continental Europe	524	32.8%
Latin America	363	22.7%
Middle East/N. Africa/The Gulf	49	3.1%
North Asia	202	12.6%
South Asia	61	3.8%
Sub-Saharan Africa	41	2.6%
United Kingdom	277	17.3%
Total	1,600	100.0%

Panel A reports the distribution of ADR firm-years by the level and by the accounting standards used in the 20-F filings. Accounting standards are coded as IFRS, U.S. GAAP, or Domestic which would be the standards followed in the home country of the cross listed firm. Panel B reports the distribution of the ADR firm-years across different regions. The regions are defined as follows: Continental Europe includes firms from Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Norway, Spain, Sweden, Switzerland, The Netherlands, and Portugal; Latin America includes firms from Argentina, Brazil, Chile, México, Perú, and Venezuela; Middle East/N. Africa/The Gulf includes firms from Israel and Turkey; North Asia includes firms from Hong Kong, Japan, and Korea; and South Asia includes firms from India, Philippines, and Singapore.

**TABLE 4**  
**Summary Statistics for Country Specific Variables**

<b>Country</b>	<b>Observations</b>	<b>CIV_COM</b>	<b>EQUITY</b>	<b>DISCLOSURE</b>	<b>ENFORCE</b>	<b>PCGDP (mean)</b>
Argentina	50	1	7.5	45	5.8	4.454
Australia	73	0	28	75	9.5	32.286
Austria	5	1	10	54	9.4	33.633
Belgium	5	1	14.7	61	9.4	32.420
Brazil	134	1	6.3	54	6.1	4.512
Chile	64	1	24	52	6.5	6.848
Denmark	16	1	23.8	62	10	45.492
Finland	17	1	18.2	77	10	34.603
France	127	1	13	69	8.7	30.973
Germany	76	1	8.3	62	9.1	32.868
Greece	16	1	14.7	55	6.8	21.063
Hong Kong	48	0	33.2	69	8.9	25.908
India	42	0	19	57	5.6	0.662
Israel	43	0	27	64	7.7	19.952
Italy	46	1	9.7	62	7.1	29.322
Japan	110	1	21.2	65	9.2	34.054
Korea	44	1	15	62	5.6	15.542
México	105	1	7.2	60	5.4	8.072
New Zealand	10	0	25.2	70	10	20.971
Norway	31	1	24.5	74	10	58.269
Perú	6	1	15	38	4.7	2.867
Philippines	7	1	8.3	65	3.5	1.188
Portugal	9	1	15.3	36	7.2	16.957
Singapore	12	0	33.2	78	8.9	27.374
South Africa	41	0	19.8	70	6.4	4.538
Spain	22	1	10.2	64	7.1	24.734
Sweden	27	1	22	83	10	39.283
Switzerland	37	1	28.8	68	10	49.445
The Netherlands	85	1	24.5	64	10	34.334
Turkey	6	1	7.3	51	4.8	6.415
United Kingdom	277	0	30	78	9.2	33.686
United States	34,023	0	28	71	9.5	39.479
Venezuela	4	1	4.5	40	5.9	4.982

*CIV\_COM* equals one (zero) when a country is a civil code (common law) legal regime; *EQUITY* is the mean rank of the following country-specific variables from LaPorta et al. (1997): the ratio of stock market capitalization held by minorities to GNP, the proportion of listed domestic firms in the population, and the proportion of IPOs in the population (Leuz et al. 2003); *DISCLOSURE* is the country level disclosure from the Center for International Financial Analysis and Research (CIFAR) index; *ENFORCE* is the mean score of the following LaPorta et al. (1998) variables: the efficiency of the judicial system, the assessment of rule of law, and the corruption index (Leuz et al. 2003); and *PCGDP* is per capital gross domestic product in thousands of U.S. dollars from the October 2008 IMF World Economic Outlook Database

**TABLE 5**  
**Audit Fees For Cross Listed Firms Relative to U.S. Firms**

	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	6.523	0.0000	6.637	0.0000	6.538	0.0000
<i>LNTA1</i>	0.468	0.0000	0.468	0.0000	0.468	0.0000
<i>LNTA2</i>	0.453	0.0000	0.452	0.0000	0.452	0.0000
<i>LNTA3</i>	0.442	0.0000	0.442	0.0000	0.442	0.0000
<i>LNTA4</i>	0.448	0.0000	0.448	0.0000	0.448	0.0000
<i>LNTA5</i>	0.474	0.0000	0.474	0.0000	0.474	0.0000
<i>INVREC</i>	0.381	0.0000	0.381	0.0000	0.380	0.0000
<i>FOREIGN</i>	0.158	0.0000	0.159	0.0000	0.158	0.0000
<i>MA</i>	0.042	0.0000	0.042	0.0000	0.042	0.0000
<i>QRATIO</i>	-0.035	0.0000	-0.035	0.0000	-0.035	0.0000
<i>ROA</i>	-0.036	0.0000	-0.035	0.0000	-0.035	0.0000
<i>LOSS</i>	0.177	0.0000	0.177	0.0000	0.177	0.0000
<i>LEV</i>	0.030	0.0430	0.030	0.0435	0.030	0.0416
<i>GROWTH</i>	-0.022	0.0000	-0.022	0.0000	-0.022	0.0000
<i>MKTBK</i>	0.009	0.0000	0.009	0.0000	0.009	0.0000
<i>RESTATE</i>	-0.008	0.5761	-0.008	0.5682	-0.008	0.5706
<i>XDOPS</i>	0.170	0.0000	0.170	0.0000	0.171	0.0000
<i>BUSY</i>	0.079	0.0000	0.080	0.0000	0.078	0.0000
<i>BIGN</i>	0.260	0.0000	0.261	0.0000	0.261	0.0000
<i>INITIAL</i>	0.019	0.1472	0.018	0.1503	0.018	0.1516
<i>GCO</i>	0.208	0.0000	0.207	0.0000	0.207	0.0000
<i>404RPT</i>	0.527	0.0000	0.527	0.0000	0.527	0.0000
<i>404ICW</i>	0.408	0.0000	0.408	0.0000	0.408	0.0000
<i>PCGDP</i>	0.013	0.0163	0.014	0.0092	0.013	0.0273
<i>CIV_COM</i>	0.092	0.4300	0.089	0.4461	0.099	0.3962
<i>EQUITY</i>	-0.020	0.0016	-0.020	0.0019	-0.019	0.0019
<i>DISCLOSURE</i>	0.027	0.0000	0.026	0.0000	0.026	0.0000
<i>ENFORCE</i>	0.114	0.0231	0.106	0.0327	0.117	0.0195
<i>ADR</i>	0.209	0.0103				
<i>LI&amp;II</i>			0.253	0.0069		
<i>LIII</i>			0.172	0.0424		
<i>ADRGAAP</i>					0.149	0.0946
<i>IFRS</i>					0.292	0.0014
<i>DOMSTD</i>					0.217	0.0371
Adjusted R <sup>2</sup>	84.4%		84.4%		84.4%	

The sample includes 35,623 firm-years including 1,600 ADR firm-years from the 2000-2007 period. All continuous variables are winsorized at the top and bottom 1% level. All p-values are from two-tailed tests. Each model includes Fama-French 48 industry and year indicator variables that are not reported here for expositional convenience. Reported results use heteroskedasticity-robust standard errors clustered by firm. The dependent variable is the natural log of AUDFEES. The independent variables are defined as follows: *LNTA<sub>i</sub>* is the natural log of *ASSETS* for firms in size quintile *i*; *INVREC* is the year-end ratio of the sum of inventory and accounts receivable to total assets; *FOREIGN* equals one when foreign currency translation adjustments are present, zero otherwise; *MA* equals one for firms with mergers, zero otherwise; *QRATIO* is the year-end ratio of current assets minus inventory to total current liabilities; *ROA* is income before extraordinary items divided by lagged total assets; *LOSS* equals one when *ROA* is less than zero, zero otherwise; *LEV* is the year-end ratio of the sum of debt in current liabilities and long-term debt to total assets; *GROWTH* is the percentage change in sales between the current and prior year; *MKTBK* is the year-end ratio of the market value of equity plus total debt to total assets; *RESTATE* equals one when a firm announces a restatement during the year, zero otherwise; *XDOPS* equals one when a firm reports extraordinary items or discontinued operations, zero otherwise; *BUSY* equals one for firms with fiscal year ends between 12/31 and 1/15, zero otherwise; *BIGN* equals one when the auditor is a Big N audit firm, zero otherwise; *INITIAL* equals one for the first year of the engagement, zero otherwise; *GCO* equals one when an auditor issues a going-concern audit opinion, zero otherwise; *404RPT* equals one when the AuditAnalytics 404 file has an auditor opinion on internal controls, zero otherwise; *404ICW* equals one when the AuditAnalytics 404 file reports a material

weakness in internal controls, zero otherwise; *PCGDP* is per capital gross domestic product in thousands of U.S. dollars from the October 2008 IMF World Economic Outlook Database; *CIV\_COM* equals one (zero) when a country is a civil code (common law) legal regime; *EQUITY* is the mean rank of the following country-specific variables from LaPorta et al. (1997): the ratio of stock market capitalization held by minorities to GNP, the proportion of listed domestic firms in the population, and the proportion of IPOs in the population (Leuz et al. 2003); *DISCLOSURE* is the country level disclosure from the Center for International Financial Analysis and Research (CIFAR) index; *ENFORCE* is the mean score of the following LaPorta et al. (1998) variables: the efficiency of the judicial system, the assessment of rule of law, and the corruption index (Leuz et al. 2003); *ADR* equals one when the firm is listed on the Bank of New York Mellon ADR database, zero otherwise; *LI&II (LIII)* equals one when a firm-year is identified as a Level I or II (Level III) ADR, zero otherwise; and *ADRGAAP*, *IFRS*, and *DOMSTD* equal one when an ADR prepares its financial statements under U.S. GAAP, IFRS, or domestic GAAP, respectively, in a given year, zero otherwise.

**TABLE 6**  
**Auditing Regulatory Environment Across Countries**

COUNTRY	INDSTD	GOVTSTD	OVERSIGHT	PROTATE	FROTATE	JOINT	LICENSE	AUFACTOR
United States	1	0	3	1	0	0	1	0.188
Australia	1	0	1	1	0	0	1	-1.134
United Kingdom	1	0	1	1	0	0	1	-1.134
Hong Kong	0	0	3	1	0	0	1	-1.692
Korea	0	0	3	1	0	0	1	-1.692
Singapore	0	0	3	1	0	0	1	-1.692
Israel	0	0	2	1	0	0	1	-2.352
France	1	0	1	1	0	1	1	-2.403
Switzerland	0	0	0	1	0	0	1	-3.674
The Netherlands	0	0	0	1	0	0	1	-3.674
Norway	0	0	3	0	0	0	1	-3.953
South Africa	1	0	0	0	0	0	1	-4.055
Japan	0	1	2	1	0	0	1	-4.070
Portugal	1	0	3	0	0	0	0	-4.165
Greece	0	1	1	1	0	0	1	-4.731
Italy	1	0	3	0	1	0	1	-4.926
Belgium	0	0	1	0	0	0	1	-5.274
Germany	0	0	1	0	0	0	1	-5.274
Sweden	0	0	1	0	0	0	1	-5.274
Austria	0	1	0	1	0	0	1	-5.391
New Zealand	0	1	0	1	0	0	1	-5.391
Philippines	0	1	0	1	0	0	1	-5.391
Spain	0	1	0	1	0	0	1	-5.391
Denmark	0	0	2	1	0	1	0	-5.713
México	0	0	0	1	0	0	0	-5.765
Finland	0	0	2	0	0	1	1	-5.882
Argentina	0	0	0	0	0	0	1	-5.935
Chile	0	0	0	0	0	0	1	-5.935
India	0	0	0	0	0	0	1	-5.935
Brazil	0	0	0	0	1	0	1	-8.787
Perú	0	1	0	0	0	1	1	-8.922
Turkey	0	0	0	0	1	1	1	-10.056
Venezuela	0	1	0	0	1	0	0	-12.596

Country level data on auditing environment is hand-collected from IFAC compliance surveys available on the IFAC website. The variables are defined as follows: *INDSTD* equals one when the country indicates the auditing standard-setter is an independent agency (i.e. not a government agency and not a "private organization established by the profession") for Question 44 in Section 5B of the IFAC survey, zero otherwise; *GOVTSTD* equals one when the country indicates that the auditing standard-setter is a government agency for Question 44 in Section 5B of the IFAC survey; *OVERSIGHT* equals one if the country indicates that it has an auditing oversight body (Question 111 in Section 10C of the IFAC survey is "yes") that does not have sanction authority (Question 111e in Section 10C of the IFAC survey) and does not conduct inspections (Question 111d in Section 10C of the IFAC survey), 2 if the country indicates that it has an auditing oversight body that has sanction authority but does not conduct inspections, 3 if the country indicates that has an auditing oversight body that conducts inspections and has sanction authority, or zero if the country does not have an auditing oversight body; *PROTATE* equals one when the answer to Question 42 in Section 4 indicates that the country requires audit partner rotation for listed entities, zero otherwise; *FROTATE* equals one when the answer to Question 42 in Section 4 indicates that the country requires audit firm rotation for listed entities, zero otherwise; *JOINT* equals one when the answer to Question 41 in Section 4 indicates that the country requires joint auditors for audits of listed entities, zero otherwise; *LICENSE* equals one when the

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answer to Question 79 in Section 7B indicates that there are ongoing requirements to retain a license to practice as a public accountant, zero otherwise; and *AUFACTOR* is an audit regulatory environment principal component score calculated from the previous seven variables.

**TABLE 7**  
**Audit Fees, Cross Listing and Auditing Regulatory Environment**

	Coefficient	Std. Err.	<i>t</i> -statistics	<i>p</i> -value
intercept	6.905	0.4338	15.92	0.0000
<i>LNTA1</i>	0.467	0.0107	43.66	0.0000
<i>LNTA2</i>	0.452	0.0076	59.64	0.0000
<i>LNTA3</i>	0.442	0.0062	71.63	0.0000
<i>LNTA4</i>	0.448	0.0052	86.35	0.0000
<i>LNTA5</i>	0.474	0.0045	106.12	0.0000
<i>INVREC</i>	0.382	0.0369	10.37	0.0000
<i>FOREIGN</i>	0.157	0.0150	10.51	0.0000
<i>MA</i>	0.043	0.0102	4.16	0.0000
<i>QRATIO</i>	-0.035	0.0021	-16.37	0.0000
<i>ROA</i>	-0.036	0.0076	-4.71	0.0000
<i>LOSS</i>	0.176	0.0107	16.54	0.0000
<i>LEV</i>	0.029	0.0148	1.98	0.0480
<i>GROWTH</i>	-0.022	0.0035	-6.30	0.0000
<i>MKTBK</i>	0.009	0.0019	4.59	0.0000
<i>RESTATE</i>	-0.008	0.0139	-0.57	0.5680
<i>XDOPS</i>	0.171	0.0103	16.61	0.0000
<i>BUSY</i>	0.079	0.0133	5.94	0.0000
<i>BIGN</i>	0.260	0.0166	15.71	0.0000
<i>INITIAL</i>	0.019	0.0128	1.47	0.1430
<i>GCO</i>	0.207	0.0181	11.40	0.0000
<i>404RPT</i>	0.528	0.0133	39.77	0.0000
<i>404ICW</i>	0.409	0.0223	18.35	0.0000
<i>PCGDP</i>	0.006	0.0057	1.13	0.2580
<i>CIV_COM</i>	0.197	0.1350	1.46	0.1450
<i>EQUITY</i>	-0.026	0.0063	-4.15	0.0000
<i>DISCLOSURE</i>	0.022	0.0058	3.76	0.0000
<i>ENFORCE</i>	0.153	0.0512	2.99	0.0030
<i>AUFACTOR</i>	0.076	0.0302	2.51	0.0120
<i>ADR</i>	0.327	0.0888	3.69	0.0000
Adjusted R <sup>2</sup>		84.4%		

The sample includes 35,623 firm-years including 1,600 ADR firm-years from the 2000-2007 period. All continuous variables are winsorized at the top and bottom 1% level. All *p*-values are from two-tailed tests. Each model includes Fama-French 48 industry and year indicator variables that are not reported here for expositional convenience. Reported results use heteroskedasticity-robust standard errors clustered by firm. The dependent variable is the natural log of AUDFEES. The independent variables are defined as follows: *LNTA<sub>i</sub>* is the natural log of *ASSETS* for firms in size quintile *i*; *INVREC* is the year-end ratio of the sum of inventory and accounts receivable to total assets; *FOREIGN* equals one when foreign currency translation adjustments are present, zero otherwise; *MA* equals one for firms with mergers, zero otherwise; *QRATIO* is the year-end ratio of current assets

minus inventory to total current liabilities; *ROA* is income before extraordinary items divided by lagged total assets; *LOSS* equals one when *ROA* is less than zero, zero otherwise; *LEV* is the year-end ratio of the sum of debt in current liabilities and long-term debt to total assets; *GROWTH* is the percentage change in sales between the current and prior year; *MKTBK* is the year-end ratio of the market value of equity plus total debt to total assets; *RESTATE* equals one when a firm announces a restatement during the year, zero otherwise; *XDOPS* equals one when a firm reports extraordinary items or discontinued operations, zero otherwise; *BUSY* equals one for firms with fiscal year ends between 12/31 and 1/15, zero otherwise; *BIGN* equals one when the auditor is a Big N audit firm, zero otherwise; *INITIAL* equals one for the first year of the engagement, zero otherwise; *GCO* equals one when an auditor issues a going-concern audit opinion, zero otherwise; *404RPT* equals one when the AuditAnalytics 404 file has an auditor opinion on internal controls, zero otherwise; *404ICW* equals one when the AuditAnalytics 404 file reports a material weakness in internal controls, zero otherwise; *PCGDP* is per capital gross domestic product in thousands of U.S. dollars from the October 2008 IMF World Economic Outlook Database; *CIV\_COM* equals one (zero) when a country is a civil code (common law) legal regime; *EQUITY* is the mean rank of the following country-specific variables from LaPorta et al. (1997): the ratio of stock market capitalization held by minorities to GNP, the proportion of listed domestic firms in the population, and the proportion of IPOs in the population (Leuz et al. 2003); *DISCLOSURE* is the country level disclosure from the Center for International Financial Analysis and Research (CIFAR) index; *ENFORCE* is the mean score of the following LaPorta et al. (1998) variables: the efficiency of the judicial system, the assessment of rule of law, and the corruption index (Leuz et al. 2003); *AUFACTOR* is an audit regulatory environment principal component score; and *ADR* equals one when the firm is listed on the Bank of New York Mellon ADR database, zero otherwise.