

## **How Have Auditors Managed Their Chinese ADR Engagements?**

**Aloke (Al) Ghosh\*\***

Baruch College, City University of New York  
One Bernard Baruch Way, Box B12-225  
New York, NY 10010  
Email: [Aloke.Ghosh@baruch.cuny.edu](mailto:Aloke.Ghosh@baruch.cuny.edu)  
Phone: 646.313.3184

**Elisabeth Peltier**

Concordia University  
1455 de Maisonneuve Boulevard West  
Montreal, Quebec H3G 1M8  
Email: [elisabeth.peltier@concordia.ca](mailto:elisabeth.peltier@concordia.ca)  
Phone: 514-848-2424 x7591

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\*\*Corresponding author

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## **ABSTRACT**

The controversy over Chinese reverse mergers, which are directly listed on U.S. stock exchanges, has led to concerns about the audit quality of all U.S. listed Chinese companies. Because a sizeable number of foreign firms cross list their shares as American Depositary Receipts (ADRs) issued by U.S. depository banks (as opposed to directly listed), we study how auditors have managed Chinese ADRs. Our motivation for examining Chinese ADRs is based on the findings that cross-listing via the ADR process is beneficial for U.S. shareholders, generally results in higher valuations, and is less likely to be associated with misreporting. We find that relative to other ADRs, Chinese ADRs are: (1) more likely to be associated with a Big 4 auditor, (2) expected to pay more for their external audits, (3) are likely to have longer audit report lag (proxy for audit investments), and (4) less likely to restate prior period financial statements, which collectively suggests higher audit quality. When we include Chinese reverse mergers, which are non-ADR companies, we find that the audit quality problems are only confined to Chinese reverse mergers. Using Tobin's Q as a measure of market value, we find that the stock market continues to discount Chinese ADRs along with Chinese reverse mergers, which suggest that investors may not be incorporating the benefits of higher audit quality when evaluating Chinese ADRs relative to other ADRs or Chinese reverse merger companies.

## INTRODUCTION

The recent allegations of misreporting and regulatory scrutiny have raised serious concerns about the audit quality of all U.S. listed Chinese companies.<sup>1</sup> Because the Public Company Accounting Oversight Board (PCAOB) is unable to inspect the audit work papers of Chinese audit firms, investors might be apprehensive about the audit quality of Chinese companies (McMohan and Rapoport 2011). The SEC's investigation of Chinese "reverse mergers" added to the controversy surrounding Chinese companies. A critical question is whether the much publicized financial reporting problems or audit quality concerns are restricted to Chinese reverse mergers (PCAOB 2011), or whether they are more systematic problems describing a larger population of Chinese companies including American Depositary Receipts (ADRs), which is the predominant form of cross listing foreign shares in the U.S.

While much of the problems among Chinese companies appear to be confined to reverse mergers, the criticism appears to be directed towards all U.S.-listed Chinese companies. For instance, Carcello, Carver, Lennox and Neal (2014) claim that the bonding argument failed to apply for U.S.-listed Chinese companies. They contend that all U.S.-listed Chinese companies are viewed negatively because of lower audit quality and the inability of PCAOB to inspect Chinese audits. Similarly, Darrough et al. (2014) analyze the spillover effects around the time of the disclosure of Chinese reverse-merger fraud allegations and find a negative market reaction for U.S.-listed Chinese companies that are not involved in fraud but not for US reverse mergers. The media and popular press also expressed serious concerns about the quality of accounting information (e.g., Plender 2014).

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<sup>1</sup>For example, see Scannell and Bond (2012), Rapoport (2014), Chu and Rapoport (2012), Stein (2011), McMahon and Rapoport (2011), McMahon (2011) and Rapoport (2011). In 2010, the House Financial Services Committee sent a letter to the Securities and Exchange Commission (SEC) questioning the lack of rigor in auditing Chinese companies.

In this study, we examine the audits of Chinese ADR engagements, whether their auditors are likely to charge more, are likely to expend greater audit effort, whether Chinese ADRs are less likely to restate, whether they are more prone to litigation risk, and whether the market discounts Chinese ADRs relative to other ADRs or Chinese reverse mergers. Our emphasis is on ADRs, as opposed to directly listed companies that bypass the ADR process, for several crucial reasons.<sup>2</sup> First, a sizeable proportion of foreign firms trade on U.S. exchanges as ADRs (Doidge, Karolyi, Miller, and Stulz 2009). Second, prior studies document that U.S. cross listing is a credible commitment (or bonding) to higher financial reporting, disclosure, and audit quality because of stringent reporting requirements, a strict legal environment, and scrutiny from the investment community (e.g., Doidge, Karolyi, and Stulz 2004; Lang, Lins, and Miller 2003; Stulz 1999; Coffee 1999), which is expected to lead to fewer reporting problems. Finally, the involvement of a depositary bank as a financial intermediary provides a passive form of supervision which might have implications for accounting quality.<sup>3</sup> Considering that a large percentage of Chinese firms remain cross listed on U.S. stock exchanges, U.S. investors stand to benefit from having an enhanced understanding of Chinese ADR audits.

Because ADRs tend to be high quality firms (Doidge et al. 2009), Chinese ADRs are confronted with a potential adverse selection problem, i.e., market participants might not differentiate between Chinese ADRs and the other U.S. listed Chinese companies that have been at the forefront of much controversy especially involving their audit quality (Carcello, Carver,

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<sup>2</sup>Foreign companies can list their shares directly or cross list as ADRs on U.S. stock exchanges. Canadian public companies, and often those from Israel, list their stock directly on U.S. exchanges. Foreign private companies that raise capital in the U.S., which includes reverse mergers, also directly list on U.S. stock exchanges. Between 2000 and 2012, nearly 50% of the U.S. listed Chinese firms are traded as ADRs.

<sup>3</sup>Depositary banks report on important developments including recapitalization plans, exchange offers, subscription rights, treatment of dividends, and the procedure for voting. Further, the legal counsel of the bank is involved with the issuer's legal counsel to manage the compliance with U.S. securities laws, rules and regulations, which also enhances the flow of financial information.

Lennox and Neal 2014). One potential solution to this adverse selection problem is retaining a high quality auditor like the Big 4. Considering that Big 4 tend to be associated with higher audit quality because of their “deep pockets” (e.g. Lennox and Li 2014; Palmrose and Scholz 2004; Craswell, Francis and Taylor 2005), Chinese ADRs have strong incentives to retain a Big 4 auditor as a bonding device to convey their commitment to high quality information and to credibly signal their commitment to limiting agency problems.

Given the scrutiny surrounding Chinese companies in general (e.g., Templin 2011; Piotroski and Wong 2011; Peng and Bewley 2010), auditors are likely to perceive Chinese engagements as being risky. Therefore, auditors are expected to work more, gather additional audit evidence, and conduct extensive substantive testing to reduce audit risk to an acceptable level which suggests higher audit fees for Chinese ADRs than other ADRs. Further, if auditors are more apprehensive about Chinese ADR engagements and they expend greater audit effort, Chinese ADRs might be associated with a lower incidence of financial reporting misstatements.

Using a comprehensive database of ADRs derived from the Bank of New York (BNY) Mellon and Citi websites, we first examine whether the demand for high quality auditors is larger for Chinese ADRs than non-Chinese ADRs using Big 4 as a proxy for high quality auditors (Khurana and Raman 2004, Krishnan 2003, Francis and Krishnan 1999).<sup>4</sup> We find that the Big 4 are more likely to audit Chinese ADRs relative to ADRs from other countries. Thus, while directly U.S.-listed Chinese companies might retain non-Big 4 to preserve reporting flexibility (Carcello,

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<sup>4</sup>We use non-Chinese ADRs as a control sample, rather than using directly listed Chinese (or foreign) companies as a benchmark, because there are significant firm specific (e.g., size, risk, age, exchange listings, complexity) and reporting differences between ADRs and directly listed foreign companies. While ADR companies are almost entirely classified as foreign private issuers, and therefore file Form 20-F, many directly listed foreign companies fail to meet the criteria of foreign private issuers and, therefore, must file Form 10-K. Using other ADRs as a benchmark reduces concerns from the omitted correlated variables problem.

Carver, Lennox, and Neal 2014), our results from the ADR sample are consistent with the bonding theory; Chinese ADRs associate with Big 4 more frequently to signal their superior quality.

When we analyze audit fees, we find that audit firms charge about 75 percent more from Chinese ADRs relative to what they charge from other foreign ADRs. Auditors might charge more from Chinese ADRs because added audit investments are needed to provide the desired level of assurance or because of higher litigation risk. Using audit report lag (number of business days between the fiscal year-end and audit report date) as a surrogate for audit investments, we find that Chinese ADRs have the longest audit report lag. Using company lawsuits as a surrogate for litigation risk (Heninger 2001; Palmrose and Scholz 2004), we find that Chinese ADRs have the lowest litigation risk. Thus, our results suggest that auditors charge more from Chinese ADRs because of greater effort and not because of higher litigation risk.

We also find that Chinese ADRs are less likely than other foreign ADRs to restate prior period financial statements. Contrary to claims that U.S. listed Chinese companies are more likely to restate prior period financial statements, our results suggest that Chinese ADRs are less likely to restate because of errors or irregularities. When we include Chinese reverse mergers in our ADR sample, we find that audit quality concerns are confined to Chinese reverse mergers.<sup>5</sup> Collectively, our results indicate that Chinese ADRs engage Big 4 more frequently who charge more and make greater audit investments, which reduces the frequency of material misstatements of financial statements. There is no evidence to suggest that, relative to other ADRs, Chinese ADRs have lower audit quality.

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<sup>5</sup>In a reverse merger, a private company is merged into a public company that is typically a shell company (Lee, Li, and Zhang 2013). Because reverse mergers are small with less transparent disclosures avoiding the scrutiny of depositary and investment banks (Templin 2011), the benefits of high audit quality are limited. Several recent studies focus on reverse mergers (e.g. Darrrough, Huang, and Zhao 2013; Givol, Hayn, and Lourie. 2012; Lee, Li, and Zhang 2013).

Because our results suggest that Chinese ADRs do not have lower audit quality than other ADRs and that they are not associated with the audit quality problems of Chinese reverse mergers, a natural economic question is whether the stock market discriminates between Chinese ADRs, other ADRs, and Chinese reverse mergers. Using Tobin's Q as a measure of market value, we find that the stock market continues to discount Chinese ADRs which suggests that the stock market may not be incorporating the benefits of superior audit quality when evaluating Chinese ADRs relative to other ADRs or Chinese reverse merger companies.

We conduct several supplementary analyses. We exclude companies audited by U.S.-based Chinese auditors, partition our sample into asset quintiles, confine our sample to the post-SOX years, and sort the ADR sample based on various levels (Levels I to III). Our results are robust to the added sensitivity analyses. Our results have interesting implications. Contrary to the popular perception (McMohan and Rapoport 2011; Economist May 19, 2012), our results suggest that not all Chinese companies are poor quality and that large accounting firms have been cautious and prudent in their audits of Chinese ADRs. However, our Tobin's Q analysis suggests that the market is penalizing Chinese ADRs despite these companies having superior audit quality. Our study therefore provides some evidence that investors might be mispricing Chinese ADRs. While reverse mergers do appear to have low-quality financial reporting, our study suggests that Chinese ADRs have higher financial reporting quality.

## **HYPOTHESES DEVELOPMENT**

### ***Foreign Companies Listed in the U.S.: ADR versus Direct Listing***

Rule 405 of the 1933 Securities Exchange Act and Rule 3b-4 of the 1934 Securities Exchange Act defines a foreign private issuer as a foreign issuer with (1) less than 50 percent of the issuer's outstanding voting securities held directly or indirectly by residents of the U.S., (2)

more than 50 percent of the assets located outside the U.S., or (3) administration principally outside the U.S. Foreign corporations can be traded in the U.S. in one of two forms: (a) direct listing (ordinary shares or as targeted shares adapted to the needs of U.S. investors, e.g., Share of New York Registry issued by ArcelorMittal, and (b) ADR. Presently, ADRs are by far the most prevalent form through which foreign corporations list and offer their securities in the U.S. (Cleary, Gottlieb, Steen and Hamilton, LLP 2012).<sup>6</sup>

There are fundamental differences between foreign issuers that are directly listed in the U.S. and those that are listed as ADRs. For instance, foreign companies that are directly listed on U.S. stock exchanges, which include reverse mergers, tend to be small, potentially risky with less transparent disclosures, and with low analyst coverage or institutional ownership. In contrast, ADRs are larger, with significant growth potential, have higher leverage, are more capital intensive and, more importantly, have greater transparency (Lang et al. 2003; Doidge et al. 2004).

There are distinct informational advantages associated with ADRs. First and foremost, ADRs have a superior information environment because of explicit regulatory disclosure requirements and because of pressure from investors to provide greater information to market participants. Second, ADRs have greater analyst coverage which further increases the demand for more transparent disclosures (Lang et al. 2003). The scrutiny from investment analysts, or institutional investors, plays a critical role in aligning the interests of ADR-shareholders with the management of the company, i.e., the analysts play a vital role in reducing potential agency conflicts between shareholders and insiders. Finally, ADRs have higher quality accounting

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<sup>6</sup>Historically, direct listings by foreign private issuers have been limited to Canadian companies and to companies from some countries in the Caribbean and Micronesia. More recently, some countries like China have turned towards direct listing as an alternative to ADRs. However, given the difficulties in transfer of shares between the U.S. and non-U.S. clearing systems and in the payment of dividend in currencies other than the U.S. dollar, foreign issuers continue to prefer ADR over listings including Global Shares or Shares of New York Registry (Cleary and Gottlieb 2012).



information because they report bad news in a timelier manner and are less likely to manage earnings (Lang et al. 2003).

Prior studies often ignore or downplay the role of a depositary bank as an information intermediary in the ADR listing process. To register a foreign security as an ADR, a foreign private issuer and the depositary bank enter into a depositary agreement which governs the creation and maintenance of the deposit facility in the U.S.<sup>7</sup> Setting up a depositary receipt program requires close coordination among the foreign issuer, the depositary bank, the custodian, and legal counsel of each entity (JPMorgan 2005). The depositary bank, as a financial intermediary, performs several services for U.S. shareholders thereby acting as a monitor and facilitator. Some of the key activities of the depositary bank include: (1) keeping ADR holders informed of important developments concerning the issuer of the underlying securities including recapitalization plans, exchange offers and subscription rights, (2) informing ADR holders of matters submitted for the vote of shareholders, and (3) paying dividends and other distributions to ADR holders.

A foreign private issuer cannot register its stock as an ADR if it was a shell company anytime in the prior 12 months before the offering (Bessette, Bajwa, and Swick 2011). This restriction precludes a reverse merger from being an ADR. Depositary banks also provide extensive research reports to ADR shareholders that might be useful for investment purposes including how various investor classes (e.g., retail versus institutional investors, hedge funds versus managed accounts) invest in foreign equities (Karolyi 2006). Thus, fundamentally, ADRs are high quality firms with a superior information environment compared to foreign issuers listed directly in the U.S.

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<sup>7</sup>An ADR is a share of a foreign company issued by a U.S. commercial bank (the “depositary”) in exchange for already outstanding foreign shares or for shares issued specifically for an offering in the U.S. The underlying foreign private shares remain at the office of the foreign bank acting as a custodian.

### *Demand for High Quality Auditors*

A common perception in the U.S. is that Chinese companies are prone to managing earnings (Scannell and Bond 2012; Chen et al. 2012; Givoly et al. 2012; Piotroski and Wong 2011). Because Chinese regulatory agencies use accounting measures to select initial public offerings or to suspend trading, Chinese firms have incentives to manage earnings around initial offerings and those incentives remain strong even after initial public offerings or around the issuance of rights (Jian and Wong 2010; Liu and Lu 2007; Yu, Du, and Sun 2006; Aharony, Lee, and Wong 2000). Similarly, Jian and Wong (2010) find evidence of related party transactions between state-controlled companies to manipulate earnings or to facilitate “tunneling of resources.” The presence of state-controlled companies in China and the government’s control of public companies may reduce the demand for high quality financial reports (Ball, Robin, and Wu 2000). Although China adopted IFRS in 2007, it did not eliminate national differences in financial reporting practices thereby allowing preparers and enforcers to implement a localized version of IFRS unique to China (Ball 2006).

ADRs intending to raise capital, or to advance their international profile, benefit from limiting agency problems and signaling to U.S. investors that they are high-value firms (Doidge et al. 2009). Thus, ADRs also have strong incentives to hire a high quality auditor as a bonding device to convey their commitment to high quality information and to credibly signal their commitment to limiting agency problems. Because of the negative U.S. perception of Chinese companies, Chinese ADRs have more to benefit from retaining high quality auditors. Stated alternatively, Chinese ADRs are unable to tap into the deep and liquid U.S. capital markets, and obtain external financing at a low cost if there is a perception that Chinese ADRs are prone to material misstatements in financial statements.

The presence of investment analysts, institutional investors, and banks in ADRs also suggests that the demand of high quality auditors is likely to be strong. Because high quality auditing is a form of monitoring that constrains managerial discretion with financial reporting, reduces agency conflicts, and reduces information risk, sophisticated market participants are likely to demand high quality auditors. The demand for high quality auditors is stronger for Chinese ADRs because they need to assure sophisticated U.S. investors that their companies are different from other Chinese companies directly listed in the U.S. or other ADRs. Therefore, our first hypothesis states

**HYPOTHESIS 1.** *Chinese ADRs are more likely than other foreign ADRs to retain high quality auditors.*

### ***Audit Effort***

If auditors judge that Chinese ADRs are prone to earnings management, or that they have relatively high risk of material misstatements because inherent risk or control risk is high, normal audit procedures may be insufficient to decrease audit risk to an acceptable level. These concerns are even higher for high quality auditors who have high reputational and litigation costs from clients misreporting or violating GAAP (Heninger 2001; Palmrose and Scholz 2004). Consequently, auditors need to gather additional audit evidence, conduct extensive testing and in-depth fieldwork, and increase audit investments to reduce audit risk to an acceptable level. Therefore, audit fees are expected to be higher for Chinese ADRs than other foreign non-Chinese companies for two key reasons. First, auditors might charge more from U.S. listed Chinese companies because these engagements require added audit investments. Second, fees might also be higher if auditors need to cover potentially higher litigation costs associated with U.S. cross listed Chinese companies. For instance, Choi et al. (2008) find that the litigation environment impacts audit effort, audit fees, and the premium charged by Big N auditors. Similarly,

Seetharaman et al. (2002) provide evidence of non-U.S. auditors being held liable under Rule 10b-5 and section 1962(c) when companies cross-list in the U.S.

*HYPOTHESIS 2. Audit fees of Chinese ADRs are higher than other foreign ADRs.*

One key expectation of the added audit effort from high quality auditors is that Chinese ADRs are expected to have a lower risk of materially misstated financial statements.

*HYPOTHESIS 3. The likelihood of financial reporting misstatements is lower for Chinese ADRs than other foreign ADRs.*

## METHODOLOGY

### *Big 4 Auditors*

We perform a multivariate logistic analysis to assess whether U.S. cross listed Chinese companies are more likely to engage a Big 4 auditor. We follow Lawrence, Minutti-Meza, and Zhang (2011) to control for several determinants of auditor-client selection.

$$\begin{aligned} \text{Big 4} = & \beta_0 + \beta_1 \text{Emerge-ADR} + \beta_2 \text{China-ADR} + \beta_3 \text{Assets} + \beta_4 \text{Revenuetoassets} + \beta_5 \text{Currentratio} \\ & + \beta_6 \text{Leverage} + \beta_7 \text{Profitability} + \text{Industry/Year fixed effects} + \varepsilon \end{aligned} \quad (1)$$

The dependent variable is set to one if the auditor is Deloitte, Ernst and Young, KPMG, or PricewaterhouseCoopers, 0 otherwise. *Emerge-ADR* is one if an ADR is headquartered in a country other than China which is classified as an emerging market by Morgan Stanley Capital International (MSCI). *China-ADR* is one if an ADR is headquartered in China. *Assets* is the natural logarithm of total assets. *Revenuetoassets* is the ratio of total revenue to total assets. *Currentratio* is current assets to current liabilities. *Leverage* is the ratio of total debt to total assets. *Profitability* is the ratio of net income before extraordinary items to total assets.

If U.S. cross listed Chinese companies are more likely to be associated with the Big 4 relative to other cross listed companies from developed markets, the coefficient on *China-ADR*

( $\beta_2$ ) is expected to be positive. If Chinese companies are more likely to be associated with the Big 4 than other foreign companies from emerging markets,  $\beta_2$  is expected to be greater than  $\beta_1$ .

### ***Audit Fees***

We perform a multivariate ordinary least square regression analysis to assess whether Chinese ADRs pay more to their external auditor than other ADRs from emerging or developed countries. Consistent with much of the prior audit fee literature,<sup>8</sup> we model audit fees using the following regression specification

$$\begin{aligned}
 \text{Audit Fees} = & \beta_0 + \beta_1 \text{Emerge-ADR} + \beta_2 \text{China-ADR} + \beta_3 \text{Assets} + \beta_4 \text{Segments} + \beta_5 \text{Foreign} \\
 & + \beta_6 \text{Inventoryreceivables} + \beta_7 \text{M\&A} + \beta_8 \text{Issue} + \beta_9 \text{Markettobook} + \beta_{10} \text{Growth} \\
 & + \beta_{11} \text{Currentratio} + \beta_{12} \text{Leverage} + \beta_{13} \text{Profitability} + \beta_{14} \text{Loss} + \beta_{15} \text{Nonrecurring} \\
 & + \beta_{16} \text{ControlEffective} + \beta_{17} \text{Change} + \beta_{18} \text{Busy} + \beta_{19} \text{GoingConcern} \\
 & + \beta_{20} \text{EnforceScore} + \beta_{21} \text{AuditScore} + \beta_{22} \text{GDP} + \beta_{23} \text{Big4} + \beta_{24} \text{Seg\_ind} \\
 & + \text{Industry/Year fixed effects} + \varepsilon
 \end{aligned} \tag{2}$$

The dependent variable is the natural logarithmic transformation of the level of audit fees (*Audit Fees*). *Emerge-ADR* is one if an ADR company is headquartered in a country other than China which is classified as an emerging market by Morgan Stanley Capital International (MSCI). *China-ADR* is one if an ADR company is headquartered in China. The benchmark case consists of ADRs from developed markets.

As determinants of audit fee pricing, we include several variables based on auditor and client characteristics. We control for client size using the natural logarithm of total assets (*Assets*). To capture audit complexity, we include the number of business segments (*Segments*), the portion of sales from foreign operations (*Foreign*), the sum of accounts receivable and inventory to total assets (*Inventoryreceivables*), an indicator variable for companies with merger and acquisition activity (*M&A*), and an indicator variable for companies that issue equity or debt during the fiscal

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<sup>8</sup>See for example, Charles, Glover, and Sharp (2010); Ghosh and Lustgarten (2006); Hogan and Wilkins (2008); Hoitash, Hoitash, and Bedard (2008); Huang, Raghunandan, and Rama (2009); Seetharaman et al. (2002); Whisenant, Sankaraguruswamy, and Raghunandan (2003).

year (*Issue*). To capture audit risk, we include the market to book ratio (*Markettobook*) and sales growth (*Growth*). As measures of business risk, we include the ratio of current assets to current liabilities (*Currentratio*), ratio of total debt to total assets (*Leverage*), ratio of net income before extraordinary items to total assets (*Profitability*), and an indicator variable if net income before extraordinary items is negative in year t or t-1 (*Loss*).

In addition, we include several other variables associated with audit fees (e.g., Craswell, et al. 1995; Hackenbrack and Hogan 2005; Hoag and Hollingsworth 2011; Raghunandan and Rama 2006; Whisenant et al. 2003). We include an indicator for extraordinary items or discontinued operations (*Nonrecurring*), whether the auditor determines the internal controls are effective (*ControlEffective*), whether the firm-year is the first year of the audit engagement (*Change*), whether the audit occurs during the busy season (*Busy*), and whether the audit opinion is a going concern opinion (*GoingConcern*) and whether the auditor is a Big 4 (*Big4*).

We include three country-specific variables to control for cross-country variations in audit fees. *EnforceScore* and *AuditScore* are the natural logarithm of the country-specific values of an enforcement index and an audit index created by Preiato, Brown, and Tarca (2013).<sup>9</sup> *GDP* is the natural logarithm of nominal GDP per capita as provided in data.un.org.

We also include the indicator variable *Seg\_ind*. This variable is set to 1 if segment data is available in Compustat. We also set *Segments* to 0 rather than missing if segment data is not available in Compustat. This approach is consistent with Himmelberg, Hubbard, and Palia (1999)

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<sup>9</sup>The audit index consists of several components including auditor licensing, the extent of the licensing, ongoing professional development, quality assurance programs, presence of an audit oversight body, ability of the oversight body to sanction firms, requirement of auditor rotation, level of audit fees, and level of auditor litigation risk. The enforcement index consists of several components including the presence of a security market regulator or similar body and the number of employees, whether that body has power to set accounting and auditing standards, whether it reviews financial statements, whether it reports on those reviews, and whether it has taken enforcement action concerning financial statements.

to preserve our sample size since segment data is not available for many of the companies in our sample. We also include Fama-French industry effects and year fixed effects.

If U.S. listed Chinese companies have greater audit and litigation risk relative to other foreign companies from developed markets and therefore auditors need greater audit investments, audit fees are expected to be higher which suggests that the coefficient on *China-ADR* ( $\beta_2$ ) is expected to be positive. If auditors charge more from Chinese companies than other foreign companies from emerging markets,  $\beta_2$  is expected to be greater than  $\beta_1$ .

### ***Restatement***

We perform a multivariate logistic analysis to assess whether Chinese ADRs are more likely to restate their financial statements. We follow Romanus, Maher, and Fleming (2008) to control for several determinants of restatements.

$$\begin{aligned}
 Restate = & \alpha + \beta_1 Emerge-ADR + \beta_2 China-ADR + \beta_3 Assets + \beta_4 Leverage + \beta_5 Segments \\
 & + \beta_6 Issue + \beta_7 EarningsPrice + \beta_8 Markettobook + \beta_9 Accruals + \beta_{10} Exante \\
 & + \beta_{11} Profitability + \beta_{12} M\&A + \beta_{13} Age + \beta_{13} Specialist + \beta_{14} Big4 + \beta_{15} Seg\_ind \\
 & + Industry/Year fixed effects + \varepsilon
 \end{aligned} \tag{3}$$

The dependent variable *Restate* equals one if the current period financial statements are subsequently restated and 0 otherwise. *EarningsPrice* is the ratio of operating income to market value of equity. *Accruals* is the absolute value of the Kothari, Leone, and Wasley (2005) measure of performance adjusted discretionary accruals. *Exante* is 1 if the company's free cash flow is negative. *Age* is the number of years for which Compustat has total assets for the company. *Specialist* is 1 if the company's auditor is the industry leader in the country. All the other variables are previously defined.

Our emphasis is on the coefficient of *China-ADR* ( $\beta_2$ ). If Chinese ADRs are expected to restate their financial statements less often than other U.S. cross listed foreign companies from developed markets, the coefficient on *China-ADR* ( $\beta_2$ ) is expected to be negative. If Chinese ADRs

are expected to restate their financial statements less often than other ADRs from emerging markets,  $\beta_2$  is expected to be less than  $\beta_1$ .

## DATA

### *Sample Selection*

Audit opinions and fees are obtained from *Audit Analytics*' Auditor Opinions file. Data for the financial variables are from *Compustat* Annual files. Stock return control variables are obtained from *CRSP*. The litigation data is obtained from *Audit Analytics Corporate and Legal Data-Legal Case* and *Legal Parties*. Restatement data is taken from *Audit Analytics Non-Reliance Restatements*. We also identify a list of ADRs from the Citi and Bank of New York Mellon websites. We construct an ADR sample by combining the two databases which results in a comprehensive sample of active and delisted ADRs. The Citi ADR database is more comprehensive which includes both active and delisted ADRs. We identify 4,623 active and inactive ADRs from the Citi ADR database. Bank of New York (BNY) Mellon database includes active ADRs and only those delisted since 2007. We identify 2,593 ADR listings from Bank of New York.

The sample reduces to 3,764 firm year observations after merging with *Compustat* and *Audit Analytics*. Further, after excluding all financial companies, countries not classified as developed or emerging markets by MSCI, and companies without data on all control variables, we have 2,743 ADR firm year observations. We also exclude companies that are audited by a U.S. audit office since these companies may be more similar to U.S. companies than foreign companies. Overall, we have 524 observations for Chinese ADRS, which is our experimental group, and 976 ADR observations from other emerging market countries as well as 1,243 observations from developed countries which serve as our control groups.



We also identify an active list of 82 Chinese reverse mergers on the Bloomberg website (www.Bloomberg.com) as of June 24, 2011. We supplement this list with additional cases of Chinese reverse mergers obtained from Interactive Brokers as of April 12, 2011. In total, we identify 122 reverse merger companies of which 91 have the relevant data which translates into 368 firm year observations.

### ***Sample Composition***

Table 1 summarizes the ADR sample by country and the type of listing. We classify companies by the country of origin based on the location of the headquarters which is provided in *Compustat*. Because of various tax reasons, some foreign companies elect to incorporate their companies in “tax heaven” countries. We identify tax haven countries using the list provided by Organization for Economic Cooperation and Development (OECD).<sup>10</sup> Based on this definition, we find that 597 companies are incorporated in tax haven countries of which 372 companies are headquartered in China. The majority of the Chinese companies incorporated in tax haven countries are registered in the Cayman Islands (69%). For this reason, we use the location of the headquarters rather than the location of incorporation to identify the location of foreign companies trading in the US.<sup>11</sup>

There are 37 countries in our ADR sample. China has the largest number of ADRs with 524 observations (or 19% of the ADR sample). United Kingdom follows with 234 observations

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<sup>10</sup>Countries listed on various tax haven lists by region include West Indies (Anguilla, Antigua, and Barbuda, Aruba, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Dominica, Grenada, Montserrat, Netherland Antilles, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, Turks and Caicos, US Virgin Islands, Belize, and Costa) Central America (Belize, Costa Rica, and Panama), East Asia (Hong Kong, Macau, and Singapore), Europe (Andorra, Channel Islands, Cyprus, Gibraltar, Isle of Man, Ireland, Liechtenstein, Luxembourg, Malta, Monaco, San Marino), Indian Ocean (Maldives, Mauritius, Seychelles), Middle East (Bahrain, Lebanon, Jordan), North Atlantic (Bermuda), Pacific (Cook Islands, Marshall Islands, Samoa, Nauru, Tonga, Vanuatu) and Africa (Liberia).

<sup>11</sup>When we exclude all companies that are headquartered and incorporated in the tax haven countries from our analyses, our results and conclusions remain unchanged.

(8.5%) and Japan is third with 212 observations (7.7%). Brazil, Mexico, and France also have more than 100 observations.

### ***Sample Description***

Table 2 reports the means and medians for the control variables for the audit fee regressions sorted into three groups: Chinese ADRs (*China-ADR*), ADRs from other emerging markets (*Emerge-ADR*), and ADRs from developed markets (*Developed-ADR*).<sup>12</sup> We also report the mean differences of emerging and developed countries compared to China. Compared with companies from other emerging markets, companies from China are more likely to have a Big 4 and industry specialist auditors but are younger and similar in size to other emerging market companies. Chinese ADRs are more complex with more frequent merger and acquisition activity and more business segments than other emerging market countries. They have higher sales and current ratios but with lower leverage. They have a greater need for financing (*Exante*) and are more likely to issue debt or equity. Chinese ADRs also report lower earnings price ratios, higher market to book ratios, and lower accruals than other emerging market companies.

Compared with ADRs from developed markets, ADRs from China are more likely to engage a Big 4 auditor but are much younger and much smaller than developed market ADRs. The Chinese ADRs report higher sales, profitability and current ratios. They also maintain lower leverage, are more likely to issue debt or equity, and have lower discretionary accruals than developed market ADRs.<sup>13</sup>

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<sup>12</sup> MSCI (Morgan Stanley Capital International) launched the first comprehensive emerging markets index in 1988. Because Morgan Stanley identifies China as an emerging market, the appropriate benchmark group for China-ADR is *Emerge-ADR*, but we also include *Developed-ADR* to compare the results of emerging markets with those of developed markets. We track the MSCI Emerging Markets definition since 2002 which included 26 countries. Our sample does not include ADRs from Czech Republic, Egypt, Iran, Jordan, Malaysia, Morocco, Poland, Thailand, Tunisia, or Vietnam which were all classified as emerging markets at some point since 2002. Argentina, which is in our sample, was classified as MSCI emerging until 2009.

<sup>13</sup>The issuance of ADRs is sponsored, or unsponsored, depending on whether they are issued by a bank with, or without, an agreement with the issuer. Sponsored ADRs are issued by a bank pursuant to an agreement with the

## EMPIRICAL RESULTS

### *Big 4 Auditors*

In Table 3 we test whether the distribution of Big 4 auditors depends on the location of the companies (*China-ADR*, *Emerge-ADR*, and *Developed-ADR*) where the dependent variable is set to one when the auditor is Big 4 and 0 otherwise. In regression 1, the coefficient on *China-ADR* is positive and significant consistent with Chinese ADRs being more likely than *Developed-ADRs* to have a Big 4 auditor. In Regression 2, we add control variables and find that the coefficient on *China-ADR* remains positive and significant (2.04, z-statistic=4.37), while the coefficient on *Emerge-ADR* is insignificant. Our results suggest that among ADRs, Chinese ADRs are most likely to engage a Big 4 auditor relative to ADRs from other emerging or developed countries.

If Chinese ADRs are especially high risk clients posing added risk for the auditors, we would expect Big 4 auditors with litigation and reputational risk to become more cautious in accepting these engagements. Our results suggest that Big 4 auditors are significantly more likely to be involved with Chinese ADRs compared to ADRs from other countries which is inconsistent with auditors being reluctant to become associated with Chinese ADRs because of excessively high audit risk.

### *Audit Fees*

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issuer and with its financial support for shares that are already outstanding or for shares specifically issued for an ADR offering. Less than 1% of the ADRs are unsponsored (JPMorgan 2005). Our sample only includes sponsored ADRs.

In Table 4 we examine whether audit fees of foreign companies listed in the U.S. vary by the country of origin after controlling for the company- and country-level determinants of audit fees. In Regression 1, the coefficient on *China-ADR* is positive and significant ( $\beta=0.53$  t-statistic=2.61). Our results suggest that, holding other factors constant, Chinese companies pay 70 percent higher fees than ADRs from developed countries. In Regression 2, we restrict the sample to clients of Big 4 auditors and find similar results. The coefficient on *Emerge-ADR* is insignificant in both regressions consistent with auditors not differentiating between emerging and developed markets when setting fees. Untabulated F-tests for the difference in coefficients between *China-ADR* and *Emerge-ADR* find the coefficients to be significantly different at less than the 1 percent level in both regressions.

These results suggest that auditors are charging higher fees from Chinese ADRs. Fees may be high because audit firms need to invest more to provide the desired level of assurance or because Chinese companies pose higher litigation risk for the auditors and therefore they charge more as compensation for the added risk. In the subsequent subsections, we further investigate potential explanations for higher audit fees paid by Chinese ADRs by directly examining audit report lag and company lawsuits.

### ***Higher Audit Fees: Audit Investments***

A fundamental problem in auditing is that researchers do not have access to the number of hours worked by auditors as this information is not publicly disclosed. Prior studies that examine the determinants of audit report lag conclude that greater auditor effort leads to delays in audit reports. Therefore, we use audit report lag as a proxy for audit investments, where audit report lag is defined as the number of weekdays between the fiscal year end and the audit report date. When

audit investment needs are greater, auditors are expected to work longer and therefore charge higher fees.

Drawing on prior studies (e.g., Ashton, Willingham, and Elliott 1987; Ashton, Graul, and Newton 1989; Bamber, Bamber, and Schoderbek 1993; Knechel and Payne 2001; Schwartz and Soo 1996), we estimate the following audit report lag specification.

$$\begin{aligned}
 ReportLag = & \beta_0 + \beta_1 Emerge-ADR + \beta_2 China-ADR + \beta_3 Exchange + \beta_4 Assets + \beta_5 Accruals \\
 & + \beta_6 Profitability + \beta_7 Loss + \beta_8 Leverage + \beta_9 FCZ + \beta_{10} GoingConcern + \beta_{11} Segments \\
 & + \beta_{12} Foreign + \beta_{13} Change + \beta_{14} Tenure + \beta_{15} EnforceScore + \beta_{16} AuditScore \\
 & + \beta_{17} IFRS + \beta_{18} IFRSpost + \beta_{19} LocalGAAP + \beta_{20} Big4 + \beta_{21} Seg\_ind + \varepsilon \quad (4)
 \end{aligned}$$

The dependent variable *ReportLag* is the square root of the number of weekdays between the fiscal year end and the audit signature date. While it is common for prior studies to rely on calendar days, one innovation in our study is that we use the number of weekdays to measure audit report lag, which we believe is a more refined measure of audit investments than the use of calendar days.<sup>14</sup>

One concern is that the filing requirements might vary between foreign companies which might affect audit report lag. For instance, until December 2011, a foreign private registrant had six months to file its annual report (20-F). In contrast, domestic U.S. companies designated as accelerated (non-accelerated) filers must file their annual reports within 75 (90) days. While ADRs almost always qualify as a foreign private issuer, and therefore must file a 20-F, some companies that raise capital in the U.S. might not qualify as a foreign private issuer and therefore might file a

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<sup>14</sup>We include an indicator for listing on a major stock exchange (*Exchange*) and the natural logarithm of total assets (*Assets*) to capture demand for public information. To control for earnings quality, we include the absolute value of discretionary accruals (*Accruals*). To capture risk, we include return on assets (*Profitability*), negative income (*Loss*), *Leverage*, Zmijewski (1984) financial condition score (*FCZ*), and an indicator for a going concern opinion (*GoingConcern*). We measure audit complexity as business segments (*Segments*) and sales percentage from foreign operations (*Foreign*). We control for auditor changes (*Change*) and audit engagement length (*Tenure*). *EnforceScore* and *AuditScore* are as defined previously. We include three indicator variables, *IFRS* for those filing under IFRS, *IFRSpost* for the period when no reconciliation is required, and *LocalGAAP* when financial statements are prepared using standards other than U.S. GAAP or IFRS.

10-K.<sup>15</sup> Based on *Audit Analytics* filing status, 45 of our ADR observations do not file on form 20-F so they are not included in the audit report lag analysis.

In Regression 1 of Table 5, the coefficient on *China-ADR* is positive and significant (1.16, z-statistic=5.58) and so is the coefficient on *Emerge-ADR* (0.50, t-statistic=2.14). An F-test for the difference between the coefficients (not reported) finds them to be significantly different at the 5 percent level. In general, our results suggest that audit report lag is longer for all emerging market countries compared to developed market countries. The Big 4 results in regression 2 provide similar evidence. These results are consistent with the higher fees for Chinese ADRs being driven in part by extra effort the auditors put into auditing these clients.

### ***Higher Audit Fees: Litigation Risk***

When a company is involved in a lawsuit, auditors may also be included in the lawsuit because of their deep pockets. Lawsuits also involve public scrutiny which tends to tarnish the reputation of the auditors. Therefore, we use lawsuits against the company as a surrogate for litigation risk. Following prior research (e.g., Kaplan and Williams 2012; Boone, Khurana, and Raman 2011; Lys and Watts 1994), we estimate the following logistic regression.

$$\begin{aligned}
 \text{Lawsuit} = & \alpha + \beta_1 \text{Emerge-ADR} + \beta_2 \text{China-ADR} + \beta_3 \text{Assets} + \beta_4 \text{FCZ} + \beta_5 \text{M\&A} + \beta_6 \text{Growth} \\
 & + \beta_7 \text{Leverage} + \beta_8 \text{InventoryRatio} + \beta_9 \text{ReceivablesRatio} + \beta_{10} \text{CurrentRatio} + \beta_{11} \text{Loss} \\
 & + \beta_{12} \text{GoingConcern} + \beta_{13} \text{Accruals} + \beta_{14} \text{LitigiousIndustry} + \beta_{15} \text{Big4} + \beta_{16} \text{Return} \\
 & + \beta_{17} \text{Volatility} + \beta_{18} \text{Turnover} + \varepsilon
 \end{aligned} \tag{5}^{16}$$

<sup>15</sup>The SEC imposes a two-step procedure to determine whether a foreign company qualifies as a foreign private issuer. A foreign company will qualify as a foreign private issuer if 50% or less of its outstanding voting securities are held by U.S. residents. If a foreign company determines that over 50% of its outstanding voting securities are held by U.S. residents, the foreign company must consider the extent of its U.S. business contacts before it can consider itself as a foreign private registrant. Thus, foreign private issuer status is not determined solely by the country in which a company is organized (<http://www.sec.gov/divisions/corpfin/internatl/foreign-private-issuers-overview.shtml>).

<sup>16</sup> The dependent variable is one if a company is a defendant in a lawsuit based on the lawsuits filing date. The control variables are defined as follows. *InventoryRatio* (*ReceivablesRatio*) is inventory (receivables) over total assets. *Return* is the annual return on the company's shares. *Volatility* is the volatility of the company's monthly market adjusted return over the fiscal year. *Turnover* measures the percentage of shares traded over the fiscal year. *LitigiousIndustry* is set to 1 if the company's SIC code places it in the computer, electronic, retail, or biotech industries. The litigation observations are matched to the other data for the fiscal year prior to the case start date. All the other variables are previously defined.

In Regression 1 of Table 6, the coefficient on *China-ADR* is negative and significant ( $\beta=-1.21$ , z-statistic=-3.75). The coefficient on *Emerge-ADR* is also negative and significant ( $\beta=-0.36$  z-statistic=-2.07). Thus, Chinese ADRs and those from emerging markets are less likely to be sued than ADRs from developed countries. A chi-squared test for the difference between the coefficients on *China-ADR* and *Emerge-ADR* (not reported) reveals that the coefficients are significantly different from each other at the 1 percent level. In Regression 2 we add control variables from CRSP to capture stock returns (*Return*), stock price volatility (*Volatility*), and share turnover (*Turnover*). In this model, *Emerge-ADR* is no longer significant, but *China-ADR* continues to be negative and significant. In Regression 3 when we restrict the sample to Big 4 clients, the results remain essentially unchanged.

The litigation results suggest that Chinese ADRs are less likely to be sued. This result is inconsistent with auditors charging higher fees from Chinese ADRs because of increased litigation risk.

### ***Restatement***

In Table 7, we estimate the effect of location on the likelihood of a company misstating its financial statements where the dependent variable is one if a company subsequently restates its current period financial statements. Our restatement data is from Audit Analytics non-reliance Restatements which includes companies that disclosed a financial statement restatement since January 1, 2001 in annual reports and/or 8-K (8-K/A) filings. Restatement is defined as a revision of previously filed financial statements as a result of an error, fraud or GAAP/foreign principle misapplication.

We include two experimental variables (*Emerge-ADR* and *China-ADR*) along with other control variables that affect restatements. The base comparison group is ADR companies from

developed countries. In Regression 1, the coefficient on *China-ADR* is negative and significant ( $\beta=-1.51$   $z\text{-statistic}=-3.37$ ), which suggests that Chinese ADRs are less likely to restate their financial statements than ADRs from other emerging and developed countries. The coefficient on *Emerge-ADR* is insignificant at the 5 percent level. In Regression 2, we estimate the regression using the Big 4 sample and find very similar results. Untabulated Chi-square tests for the difference in the coefficients between *China-ADR* and *Emerge-ADR* are significant at less than 1 percent level in both regressions.

We find no evidence to suggest that Chinese ADRs are misstating their financial statements more often than other ADRs. On the contrary, Chinese cross listed companies appear to misstate less frequently than other ADRs which is consistent with U.S. cross listed Chinese companies having higher audit quality relative to other foreign U.S. cross listed firms. Collectively, the results from Tables 3 to 7 suggest that auditors do charge higher fees to offset added effort involved in their audits of Chinese ADRs. However Chinese ADRs do not appear to have greater audit or litigation risk based on lawsuits or restatements.

### ***Reverse Mergers***

Our audit quality results are contrary to reports claiming or insinuating that US-listed Chinese companies are more prone to misreporting or have lower audit quality. Our ADR sample does not include reverse mergers because by design they are directly listed on a U.S. stock exchange and they cannot be structured as an ADR. Chinese reverse mergers tend to be small, risky and less transparent in their disclosures, which could be why reverse merger companies might care less about audit quality. Moreover, reverse mergers avoid the rigorous scrutiny of depositary banks and investments banks which could be another reason for their low reporting quality.



In Table 8 Panel A, we test whether the distribution of Big 4 auditors varies between Chinese reverse mergers and Chinese ADRs. Regression 1 includes the experimental variables only, while Regression 2 includes the experimental and control variables. We find that Chinese reverse mergers are significantly less likely to have a Big 4 auditor in both regressions. For example, in Regression 2,  $\beta=-4.40$  ( $z\text{-statistic}=-12.51$ ). Chi-squared tests for the difference between the coefficients on *China-ADR* and *Emerge-ADR* and that between *China-ADR* and *China-ReverseMerger* (not reported) are significant at the 1 percent level in Regressions 1 and 2.

In Panel B, we test the probability of restatement associated with reverse merger companies. We find that compared to developed market ADRs, Chinese reverse mergers are significantly more likely to restate ( $\beta=1.26$   $z\text{-statistic}=2.86$ ). The results are similar in Regression 2 when we restrict the sample to Big 4 auditors. Once again, Chi-squared tests for the difference between the coefficients on *China-ADR* and *Emerge-ADR* and that between *China-ADR* and *China-ReverseMerger* (not reported) are significant at the 1 percent level in both regressions.

In Panel C, we test audit fees for Chinese reverse mergers. In Regression 1 we find that while Chinese ADRs pay higher fees ( $\beta=0.49$   $t\text{-statistic}=2.53$ ), Chinese reverse mergers pay similar fees to other companies ( $\beta=0.14$   $t\text{-statistic}=0.53$ ). However, most reverse mergers are not audited by Big 4 auditors. In Regression 2, we restrict the sample to Big 4 clients. We find that Big 4 auditors charge higher fees for Chinese reverse merger companies ( $\beta=0.50$   $t\text{-statistic}=2.65$ ) just as they do for other Chinese ADRs.

The Table 8 results are consistent with reverse mergers having a lower likelihood of choosing a Big 4 auditor and a higher likelihood of reporting restatements. These results are starkly opposite to those of Chinese ADRs who are more likely to have a Big 4 auditor and less likely to have restatements. Our results confirm the concerns about low audit quality surrounding Chinese

reverse mergers. However, even for reverse merger companies, Big 4 charge a premium which is consistent with larger accounting firms perceiving these companies as being risky. While the Big 4 usually do not audit these companies, when they do, they charge significantly more for added effort and added risk.

### **PRICING OF CHINESE ADRS**

The perception in the media, among standard setters, and among market participants is that Chinese companies are riskier because they are less likely to be audited by the Big 4, are more prone to material misstatements of financial statements and lack transparency. Therefore, we expect a discount associated with U.S. listed Chinese companies. However, our results suggest that that Chinese ADRs are more likely to hire a Big 4 auditor, their auditors expend more effort, and they are less prone to material misstatements of financial statements. Therefore, an interesting question is whether the stock market continues to discount Chinese ADRs or whether the stock market is discerning and accounts for the positive attributes of Chinese ADRs in their pricing decisions.

We test the market perception of Chinese companies using Tobin's Q (Anderson, Duru, and Reeb 2012).

$$\begin{aligned}
 \text{Tobin's } Q = & \beta_0 + \beta_1 \text{Emerge-ADR} + \beta_2 \text{China-ADR} + \beta_3 \text{SChina-ReverseMerger} + \beta_4 \text{Sales} \\
 & + \beta_5 \text{Leverage} + \beta_6 \text{ReturnVolatility} + \beta_7 \text{Investment\%} + \beta_8 \text{Lag\_Tobin's } Q \\
 & + \text{Industry/Year fixed effects} + \varepsilon
 \end{aligned} \tag{6}$$

The dependent variable is Tobin's Q which is measured as the sum of the market value of common stock, the book value of preferred stock, and the book value of long-term debt, all divided by the book value of assets. We also estimate the model using industry-adjusted Tobin's Q to account for differences in Q across industries. *Sales* is the logarithmic transformation of total sales. *ReturnVolatility* is the standard deviation of monthly stock returns over the previous 3 years.

*Investment%* is the sum of research and development and capital expenditures scaled by total assets. All the other variables are previously defined. Our emphasis is on the coefficient of *China-ADR* ( $\beta_2$ ). If Chinese ADRs are penalized by the market, we expect the coefficient on *China-ADR* ( $\beta_2$ ) to be negative. However, if the market does not perceive a difference between the quality of Chinese ADRs and other ADRs we expect to see an insignificant coefficient on *China-ADR* ( $\beta_2$ ).

Table 9 reports the regression results of Tobin's Q. In Regression 1, we find that the market values of Chinese ADRs are significantly lower than developed market ADRs ( $\beta=-0.27$  t-statistic=-2.97). Chinese ADR valuations are also significantly lower than those of other emerging market ADRs based on an f-test (F-statistic = 8.44 not tabulated). In Regression 2 we add Chinese reverse merger observations. We find that Chinese ADRs continue to be valued significantly lower than other ADRs and based on an F-test (F-statistic = 5.04 not tabulated) Chinese reverse mergers are valued significantly lower than Chinese ADRs. In Regressions 3 and 4 we re-estimate the regressions using industry-adjusted Tobin's Q as the dependent variable and find very similar results.

Therefore, our results suggest that the stock market discounts Chinese ADRs even though they are more likely to hire a Big 4, their auditors work more, and they are less prone to material misstatements of financial statements.

## **ROBUSTNESS TESTS**

### ***Foreign Companies with U.S. Based Auditors***

Our main tests exclude companies audited by U.S. based auditors. Because U.S. based audit firms are required to be registered with the PCAOB, and subject to their inspections, we exclude foreign companies engaging U.S. based audit firms (558 observations) since U.S. auditors are more likely to charge a fee premium to incorporate the more stringent regulatory

environment. Our results and conclusions remain the same when we include Chinese ADRs that are audited by U.S. based auditors.

### ***Asset Quintiles***

Because of possible variations in company size in our sample, a concern is that the control for assets is not sufficient to capture all of the size variability. Since prior research has found that the coefficient on assets varies by client size (Bell, Knechel, and Willingham 1994; Carson and Fargher 2007), we rank observations into five quintiles based on their asset size and then interact the five quintile indicator variables with *Assets*. The results using this alternative measure are essentially unchanged.

### ***Years***

Because the distribution of companies changes over time, and most of the Chinese observations are in 2005 and subsequent years, we restrict our sample to include the years 2005-2012. Also, Chinese companies adopted IFRS in 2007. Therefore, we also examine the subsample using 2007 and the subsequent years. Our results are not sensitive to time period examined.

### ***Sample Attrition***

One concern with our sample may be that we lose a large number of observations because: (1) we do not have data for the control variables for some ADRs, (2) companies are not covered in both *Compustat* and *Audit Analytics*, (3) we restrict our analysis to non-financial companies, and (4) we do not include U.S.-based auditors and therefore our results are not generalizable. When we remove all restrictions and maximize our sample size, our ADR sample size increases from 2,743 to 4,514 observations. Using this larger sample we replicate all our tests and find consistent results.

For instance, the coefficient on *China-ADR* in Regression 2 of Table 3 is 2.17 (z-stat=12.03), which suggests that Chinese ADRs are more likely to have a Big 4 than other ADRs. When we replicate Table 4, the coefficient on *China-ADR* in Regression 1 is -1.18 (z-stat=-3.05), which suggests that Chinese ADRs are less likely to restate prior period financial statements. When we replicate Table 5, the coefficient on *China-ADR* in Regression 1 is 0.46 (t-stat=2.51), which suggests that audit fees are significantly higher for Chinese ADRs than other ADRs. Finally, when we replicate Table 7, the coefficient on *China-ADR* in Regression 1 is -1.05 (z-stat=-3.63), which suggests that Chinese ADRs are less likely to be involved in lawsuits than other ADRs.

### ***Levels***

Reporting requirements differ for ADR companies depending upon the level of the ADR. Level I ADRs that are traded in the OTC markets are not required to follow US GAAP but can provide the SEC with their financial statements prepared using other standards. However Level II and Level III ADRs are traded on major exchanges and are required to comply with US GAAP by reconciling to US GAAP using Form 20-F or by filing a 10-K. Because of this, most of our audit quality measures are likely to vary by the level of ADR since Level II and III ADRs should require more work and higher quality audits. Very few of our Chinese ADR observations are Level I so this is a concern in our sample. We therefore re-estimate all of the tests using only Level II and Level III ADRs. We also estimate the tests using only Level III ADRs. Our results are not sensitive to the exclusion of Level I or Level I and Level II ADRs.

## **CONCLUSION**

In the last decade, many Chinese companies have begun listing their shares in the U.S. Over the same time period, there have been many accounting scandals questioning the quality of

audits of Chinese companies engaging in reverse mergers (McMohan and Rapoport 2011; PCAOB 2011). Because a large population of foreign companies cross list as ADRs issued by depository banks (Doidge et al. 2009), we study whether there are reasons to be apprehensive about the audit quality of Chinese ADRs. Our motivation for examining Chinese ADRs is based on the findings from accounting and finance studies documenting that cross-listing via the ADR process benefits U.S. shareholders and provides higher share valuations for the listing company. ADR companies are also less likely to be associated with earnings management which suggests that ADRs (the predominant form of cross listing) have higher audit quality.

We find that relative to other ADRs, Chinese ADRs: (1) are less likely to restate prior period financial statements (i.e., there are fewer instances of audit failures), (2) are more likely to hire a Big 4 auditor (example of higher audit quality), and (3) pay higher audit fees. Further, when we examine the reasons for higher audit fees, we find that auditors charge more from Chinese ADRs because of greater audit investments and not because of higher litigation. Collectively, our results do not suggest that Chinese ADRs have lower audit quality.

Since our ADR sample excludes Chinese reverse mergers, which are directly listed, we examine whether the audit quality concerns are limited to Chinese reverse mergers. When we additionally include Chinese reverse mergers in our ADR sample, our results indicate that only Chinese reverse mergers have lower audit quality. Thus, our results suggest that the audit quality concerns surrounding reverse mergers or other directly U.S. listed Chinese companies do not extend to Chinese ADRs.

Although our results do not suggest investors should be concerned about Chinese ADRs, academic research and popular press articles often seem to consider that all Chinese companies have poor reporting quality. We therefore examine whether the market discriminates between

Chinese ADRs and Chinese reverse mergers. We find that all US-listed Chinese companies appear to be penalized by the market. While the market appears to penalize the reverse mergers most, Chinese ADRs still have significantly lower valuations than ADRs from other countries. Given our findings that Chinese ADRs actually appear to have higher reporting quality, this lower valuation suggests that the market may be mispricing Chinese ADRs. We leave it to subsequent researchers to further examine the potential mispricing of Chinese ADRs. We also acknowledge that our sample size is significantly limited by data availability and our results may therefore not be generalizable to the population of Chinese ADRs.

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**Table 1. Distribution of ADRs by Country of Origin**

ADRs From Developed Markets			ADRs From Emerging Markets		
	Number	%		Number	%
Australia	75	2.73%	Argentina	49	1.79%
Austria	5	0.18%	Brazil	207	7.55%
Belgium	14	0.51%	Chile	94	3.43%
Denmark	15	0.55%	Hungary	9	0.33%
Finland	21	0.77%	India	92	3.35%
France	114	4.16%	Indonesia	22	0.80%
Germany	92	3.35%	Israel (2002-2008)	42	1.53%
Greece	13	0.47%	Mexico	171	6.23%
Hong Kong	87	3.17%	Peru	12	0.44%
Ireland	60	2.19%	Philippines	15	0.55%
Israel (2009-2012)	20	0.73%	Russia	37	1.35%
Italy	50	1.82%	South Africa	71	2.59%
Japan	212	7.73%	South Korea	69	2.52%
Netherlands	66	2.41%	Taiwan	75	2.73%
New Zealand	11	0.40%	Turkey	11	0.40%
Norway	28	1.02%	Total (without China)	976	35.58%
Portugal	11	0.40%			
Singapore	14	0.51%	China	524	19.10%
Spain	18	0.66%			
Sweden	23	0.84%			
Switzerland	60	2.19%			
United Kingdom	234	8.53%			
Total (Developed)	1,243	45.32%	Total (Emerging with China)	1,500	54.68%
Total ADRs				2,743	100%

The emerging and developed definitions are Morgan Stanley Capital International classifications. Israel was reclassified from emerging to developed in 2009 so observations until (after) 2008 are emerging (developed). Argentina was dropped from MSCI Emerging in 2009 so observations prior to that year are classified as emerging and other observations are dropped.

**Table 2. Descriptive Statistics**

	ADRs						
	China	Emerging	Developed				
Big 4	0.98	0.95	0.96	0.03	(-2.78) ***	0.02	(-2.00) **
<i>Specialist</i>	0.19	0.06	0.17	0.12	(-7.53) ***	0.02	(-1.27)
<i>Age</i>	6.42	11.8	16.1	-5.39	(18.84) ***	-9.68	(19.54) ***
Assets (million \$)	9,173	10,209	37,314	-1,035	(0.70)	-28,141	(9.73) ***
<i>M&amp;A</i>	0.10	0.05	0.10	0.05	(-3.69) ***	0.00	(-0.21)
<i>Segments</i>	1.58	1.48	1.47	0.11	(-2.27) **	0.11	(-1.94) *
<i>RevtoAssets</i>	0.02	0.01	0.01	0.02	(-15.28) ***	0.01	(-9.10) ***
<i>Profitability</i>	0.04	0.05	0.01	-0.01	(1.35)	0.03	(-3.89) ***
<i>CurrentRatio</i>	3.91	1.85	2.04	2.07	(-12.53) ***	1.87	(-12.34) ***
<i>Leverage</i>	0.36	0.49	0.53	-0.13	(12.01) ***	-0.17	(15.72) ***
<i>Exante</i>	0.10	0.04	0.09	0.07	(-5.08) ***	0.01	(-0.79)
<i>Issue</i>	0.16	0.1	0.08	0.07	(-8.32) ***	0.08	(-9.70) ***
<i>EPR</i>	0.01	0.11	-0.32	-0.10	(6.79) ***	0.33	(-0.56)
<i>MarkettoBook</i>	1.82	1.54	1.73	0.28	(-5.04) ***	0.09	(-1.84) *
<i>Accruals</i>	0.66	0.97	0.88	-0.31	(3.50) ***	-0.22	(2.49) **
Observations	524	976	1,243				

The table reports the mean values of the variables. The observations are divided into three groups by headquarters: China, other emerging market countries, and developed countries. Big 4 is the proportion of observations with Big 4 auditors. *Specialist* is 1 if the company's auditor has the highest market share in the client's industry and country. *Age* is the number of years for which the company has assets in Compustat. Assets is total assets in millions of dollars. *M&A* is a dummy variable equal to one if a company reported any merger or acquisition activity. *Segments* is the square root of the number of business segments. *RevtoAssets* is the ratio of total sales to total assets. *Profitability* is net income before extraordinary items over total assets. *CurrentRatio* is the ratio of current assets to current liabilities. *Leverage* is total debt divided by total assets. *Exante* is 1 if the company's free cash flow is negative. *Issue* is the amount of debt and equity issued during the year divided by total assets. *EPR* is the ratio of operating income to market value of equity. *MarkettoBook* is the ratio of market value of equity to book value of equity. *Accruals* is the absolute value of the Kothari et al. (2005) performance adjusted discretionary accruals.

\*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 3. Distribution of Big 4 Auditors by Country of Origin**

	<u>Estimate</u>	<u>z-statistic</u>	<u>Estimate</u>	<u>z-statistic</u>
Intercept	3.12	(22.42) ***	19.68	(15.32) ***
<u>Experimental Variables</u>				
<i>Emerge-ADR</i>	-0.24	(-1.21)	-0.17	(-0.65)
<i>China-ADR</i>	0.64	(1.97) **	2.04	(4.37) ***
<u>Control Variables</u>				
<i>Assets</i>			0.58	(6.25) ***
<i>Revenuetoassets</i>			3.41	(0.71)
<i>Currentratio</i>			-0.05	(-1.03)
<i>Leverage</i>			-1.65	(-2.68) ***
<i>Profitability</i>			-0.83	(-0.98)
Observations		2,743		2,743
Pseudo R <sup>2</sup>		0.87%		24.71%

We use a logistic regression to estimate the likelihood of engaging a Big 4 auditor. The dependent variable is set to 1 if the company is audited by Deloitte, Ernst and Young, KPMG, or PriceWaterhouseCoopers. *Emerge-ADR* (*China-ADR*) is set to 1 if a company is headquartered in an emerging market country (China). The independent variables are defined as follows. *Assets* is the logarithmic transformation of total assets. *Revenuetoassets* is the ratio of total revenue to total assets. *Currentratio* is the ratio of current assets to current liabilities. *Leverage* is total debt divided by total assets. *Profitability* is net income before extraordinary items over total assets. Year and industry fixed effects are included in the regressions.

\*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.



**Table 4. Audit Fees of ADRs By Country of Origin**

	Regression 1		Regression 2	
	Estimate	t-statistic	Estimate	t-statistic
Intercept	6.06	(6.48) ***	6.91	(9.02) ***
<u>Experimental Variables</u>				
<i>Emerge-ADR</i>	-0.10	(-0.63)	-0.12	(-0.80)
<i>China-ADR</i>	0.53	(2.61) ***	0.47	(2.57) ***
<u>Control Variables</u>				
<i>Assets</i>	0.53	(26.33) ***	0.54	(27.92) ***
<i>Segments</i>	0.16	(2.59) ***	0.16	(2.61) ***
<i>Foreign</i>	0.29	(3.64) ***	0.29	(3.65) ***
<i>Inventoryreceivables</i>	1.10	(4.06) ***	1.08	(3.99) ***
<i>M&amp;A</i>	0.05	(1.04)	0.03	(0.74)
<i>Issue</i>	-0.02	(-0.34)	-0.05	(-1.00)
<i>Markettobook</i>	0.03	(1.29)	0.04	(1.76) *
<i>Growth</i>	-0.12	(-2.24) **	-0.11	(-2.18) **
<i>Currentratio</i>	0.01	(0.95)	0.01	(0.61)
<i>Leverage</i>	0.25	(1.54)	0.22	(1.43)
<i>Profitability</i>	-0.56	(-2.71) ***	-0.79	(-4.34) ***
<i>Loss</i>	-0.05	(-1.07)	-0.08	(-1.67) *
<i>Nonrecurring</i>	0.21	(3.15) ***	0.20	(2.90) ***
<i>ControlsEffective</i>	0.05	(0.73)	-0.03	(-0.54)
<i>Change</i>	-0.17	(-3.32) ***	-0.15	(-2.77) ***
<i>Busy</i>	-0.04	(-0.41)	-0.02	(-0.25)
<i>GoingConcern</i>	0.38	(2.29) **	0.17	(1.78) *
<i>EnforceScore</i>	-0.01	(-0.07)	0.00	(0.00)
<i>AuditScore</i>	0.26	(2.42) **	0.29	(2.65) ***
<i>GDP</i>	0.20	(2.50) **	0.16	(2.49) **
<i>Big4</i>	0.16	(0.87)		
<i>Seg_ind</i>	-0.38	(-2.69) ***	-0.37	(-2.71) ***
Observations	2,743		2,625	
Adjusted R <sup>2</sup>	80.24%		81.47%	

The dependent variable is the logarithmic transformation of audit fees. The first (second) regression uses the full ADR (Big 4 ADR) sample. *Emerge-ADR* (*China-ADR*) is 1 if a company is headquartered in an emerging market country (China). *Assets* is the natural log of total assets in millions of dollars. *Segments* is the square root of the number of business segments. *Foreign* is the portion of sales from foreign segments. *Inventoryreceivables* is the ratio of inventory and accounts receivable to total assets. *M&A* is 1 if a company reports M&A activity. *Issue* is 1 if a company issued equity or debt during the fiscal year. *Markettobook* is the ratio of market value of equity to book value of equity. *Growth* is the percentage increase in sales over the previous year. *Currentratio* is the ratio of current assets to current liabilities. *Leverage* is total debt to total assets. *Profitability* is net income before extraordinary items over total assets. *Loss* is 1 if income before extraordinary items is negative in year *t* or *t-1*. *Nonrecurring* is an indicator for extraordinary items or discontinued operations. *ControlsEffective* is 1 if the auditor's opinion is that the client's internal controls are effective. *Change* is 1 for the first year of an audit engagement. *Busy* is 1 if the fiscal year end is between December 31 and January 15. *GoingConcern* is 1 if the financial statements include a going concern opinion. *EnforceScore* (*AuditScore*) is the natural log of the enforcement (audit) index from Preiato et al. (2013). *GDP* is the natural log of nominal GDP per capita as provided in data.un.org. *Big4* is 1 if the company is audited by Deloitte, Ernst and Young, KPMG, or PriceWaterhouseCoopers. *Seg\_ind* is 1 if the company has segment data available in Compustat. We use heteroskedasticity-robust standard errors clustered by firm. Industry and year effects are included in all models. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 5. Audit Report Lag of ADRs By Country of Origin**

	Regression 1		Regression 2	
	Estimate	z-statistic	Estimate	z-statistic
Intercept	9.93	(12.35)***	8.31	(6.98)***
<u>Experimental Variables</u>				
<i>Emerge-ADR</i>	0.50	(2.14)**	0.48	(2.03)**
<i>China-ADR</i>	1.16	(5.58)***	1.16	(5.50)***
<u>Control Variables</u>				
<i>Exchange</i>	-0.15	(-0.83)	-0.19	(-1.07)
<i>Assets</i>	-0.22	(-5.59)***	-0.25	(-6.11)***
<i>Accruals</i>	0.01	(0.30)	0.00	(0.18)
<i>Profitability</i>	-1.55	(-2.60)***	-1.35	(-2.27)**
<i>Loss</i>	-0.12	(-1.07)	-0.16	(-1.41)
<i>Leverage</i>	0.81	(2.28)**	0.79	(2.23)**
<i>FCZ</i>	-0.02	(-2.00)**	-0.02	(-2.31)**
<i>GoingConcern</i>	0.34	(1.38)	0.46	(1.84)*
<i>Segments</i>	0.24	(1.82)*	0.23	(1.69)*
<i>Foreign</i>	-0.32	(-1.90)*	-0.29	(-1.76)*
<i>Change</i>	0.12	(0.86)	0.07	(0.43)
<i>Tenure</i>	-0.05	(-2.94)***	-0.05	(-2.89)***
<i>EnforceScore</i>	-0.02	(-0.15)	-0.04	(-0.25)
<i>AuditScore</i>	-0.12	(-0.47)	-0.10	(-0.37)
<i>IFRS</i>	0.04	(0.16)	0.07	(0.28)
<i>IFRSpost</i>	-0.24	(-1.53)	-0.21	(-1.32)
<i>LocalGAAP</i>	0.63	(3.35)***	0.71	(3.75)***
<i>Big4</i>	0.07	(0.21)		
<i>Seg_ind</i>	-0.40	(-1.24)	-0.36	(-1.08)
Observations	2,728		2,614	
Adjusted R <sup>2</sup>	30.05%		30.78%	

The dependent variable is the square root of the number of weekdays between the fiscal year end and the audit report date. The sample is limited to companies that report on form 20-F. The first (second) regression uses the Full ADR (Big 4 ADR) sample. *Emerge-ADR* (*Chinese-ADR*) is 1 if a company is headquartered in an emerging market country other than China (China). *Exchange* is 1 if a company trades on the New York Stock Exchange, American Stock Exchange, or NASDAQ. *Assets* is the natural logarithm of total assets. *Accruals* is the absolute value of the Kothari et al. (2005) performance adjusted discretionary accruals. *Profitability* is net income before extraordinary items over total assets. *Loss* is an indicator variable for negative net income before extraordinary items in year t or t-1. *Leverage* is total debt divided by total assets. *FCZ* is the Zmijewski (1984) financial condition score. *GoingConcern* is 1 if the financial statements include a going concern opinion. *Segments* is the square root of the number of business segments. *Foreign* is the portion of sales from foreign segments. *Change* is 1 for the first year of an audit engagement. *Tenure* is the number of consecutive years the auditor has audited a company's financial statements. *EnforceScore* (*AuditScore*) is the natural log of the enforcement index (audit index) from Preiato et al. 2013. *IFRS* is 1 if a company reports using IFRS. *IFRSpost* is 1 if a company uses IFRS and does not need to reconcile to US GAAP on its form 20-F. *LocalGAAP* 1 if a company does not use US GAAP or IFRS for financial reporting. *Big4* is 1 if the company is audited by Deloitte, Ernst and Young, KPMG, or PriceWaterhouseCoopers. *Seg\_ind* is 1 if the company has segments reported in Compustat. *Foreign* is the portion of sales from foreign segments. We use heteroskedasticity-robust standard errors clustered by firm.

\*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 6. Litigation Risk of ADRs By Country of Origin**

	Regression 1		Regression 2		Regression 3	
	Estimate	z-statistic	Estimate	z-statistic	Estimate	z-statistic
Intercept	-10.40	(-11.98)***	-9.11	(-10.10)***	-8.02	(-10.51)***
<u>Experimental Variables</u>						
<i>Emerge-ADR</i>	-0.36	(-2.07)**	-0.27	(-1.43)	-0.24	(-1.30)
<i>China-ADR</i>	-1.21	(-3.75)***	-1.46	(-4.03)***	-1.44	(-3.98)***
<u>Control Variables</u>						
<i>Assets</i>	0.54	(10.56)***	0.56	(9.77)***	0.55	(9.50)***
<i>FCZ</i>	0.02	(0.83)	0.02	(0.50)	0.02	(0.52)
<i>M&amp;A</i>	0.45	(1.86)	0.50	(1.92)*	0.52	(1.99)**
<i>Growth</i>	-0.38	(-1.24)	-0.45	(-1.31)	-0.47	(-1.36)
<i>Leverage</i>	-0.35	(-0.69)	-0.55	(-0.98)	-0.58	(-1.02)
<i>InventoryRatio</i>	3.54	(3.02)***	3.38	(2.66)	3.37	(2.63)***
<i>ReceivablesRatio</i>	0.03	(0.03)	-0.48	(-0.42)	-0.41	(-0.35)
<i>CurrentRatio</i>	0.09	(2.52)**	0.07	(1.69)*	0.07	(1.53)
<i>Loss</i>	0.57	(3.20)***	0.62	(3.13)***	0.60	(3.02)***
<i>GoingConcern</i>	0.50	(0.82)	0.32	(0.51)	-0.06	(-0.08)
<i>Accruals</i>	-0.03	(-0.54)	-0.02	(-0.36)	-0.01	(-0.16)
<i>LitigationIndustry</i>	1.96	(12.64)***	2.04	(12.14)***	2.06	(12.17)***
<i>Big4</i>	1.09	(2.18)**	0.99	(1.96)**		
<i>Return</i>			-0.53	(-2.68)***	-0.49	(-2.49)**
<i>Volatility</i>			1.08	(0.80)	1.09	(0.80)
<i>Turnover</i>			-0.04	(-0.57)	-0.04	(-0.58)
Observations	2,743		2,435		2,323	
Pseudo R <sup>2</sup>	24.46%		26.37%		26.04%	

The dependent variable is 1 for the fiscal year before a company is a defendant in a lawsuit. *Emerge-ADR* (*China-ADR*) is 1 if a company is headquartered in an emerging market country other than China (China). The first (second) regression uses the full ADR (Big 4 ADR) sample. The control variables are defined as follows. *Assets* is the natural logarithm of the dollar value of total assets. *FCZ* is the Zmijewski (1984) financial condition score. *M&A* is a dummy variable equal to one if a company reported any merger or acquisition activity, zero otherwise. *Growth* is the percentage increase in sales over the previous year. *Leverage* is total debt divided by total assets. *InventoryRatio* (*ReceivablesRatio*) is inventory (receivables) over total assets. *CurrentRatio* is the ratio of current assets to current liabilities. *Loss* is an indicator variable for negative net income before extraordinary items in year t or t-1. *GoingConcern* is set to 1 if the financial statements include a going concern opinion. *Accruals* is the absolute value of the Kothari et al. (2005) performance adjusted discretionary accruals. *LitigationIndustry* is set to 1 if a company's SIC code places it in the computer, electronic, retail, or biotech industries. *Big4* is 1 if the company is audited by Deloitte, Ernst and Young, KPMG, or PriceWaterhouseCoopers. *Return* is the annual return on a company's shares. *Volatility* is the volatility of a company's monthly market adjusted return over the fiscal year. *Turnover* measures the percentage of shares traded over the fiscal year. Year effects are included in all regressions.

\*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 7. Restatement of ADRs By Country of Origin**

	Regression 1		Regression 2	
	Estimate	z-statistic	Estimate	z-statistic
Intercept	-6.66	(-5.34)***	-6.54	(-5.44)**
<u>Experimental Variables</u>				
<i>Emerge-ADR</i>	0.38	(1.85)*	0.31	(1.47)
<i>China-ADR</i>	-1.51	(-3.37)***	-1.49	(-3.32)***
<u>Control Variables</u>				
<i>Assets</i>	0.12	(1.75)*	0.10	(1.50)
<i>Leverage</i>	1.13	(2.23)**	1.13	(2.16)**
<i>Segments</i>	0.03	(0.15)	0.01	(0.05)
<i>Issue</i>	0.37	(1.56)	0.35	(1.41)
<i>EarningsPrice</i>	0.06	(0.16)	0.02	(0.10)
<i>Markettobook</i>	-0.15	(-1.27)	-0.17	(-1.42)
<i>Accruals</i>	-0.10	(-1.78)*	-0.13	(-2.09)**
<i>Exante</i>	-0.15	(-0.39)	-0.22	(-0.56)
<i>Profitability</i>	-1.26	(-1.30)	-0.99	(-1.01)
<i>M&amp;A</i>	-0.39	(-0.96)	-0.30	(-0.73)
<i>Age</i>	-0.72	(-4.43)***	-0.69	(-4.06)***
<i>Specialist</i>	-1.13	(-3.15)***	-1.32	(-3.51)***
<i>Big4</i>	-0.07	(-0.17)		
<i>Seg_ind</i>	0.16	(0.37)	0.16	(0.34)
Observations	2,743		2,625	
Pseudo R <sup>2</sup>	18.95%		19.42%	

The dependent variable is 1 if a company subsequently had to restate its current year's financial statements. *Emerge-ADR* (*China-ADR*) is 1 if a company is headquartered in an emerging market country (China). The control variables are defined as follows. *Assets* is the natural logarithm of the dollar value of total assets. *Leverage* is total debt divided by total assets. *Segments* is the square root of the number of business segments. *Issue* is a dummy variable which equals 1 if a company issued equity or debt during the fiscal year. *EarningsPrice* is the ratio of operating income to market value of equity. *MarkettoBook* is the ratio of market value of equity to book value of equity. *Accruals* is the absolute value of the Kothari et al. (2005) performance adjusted discretionary accruals. *Exante* is 1 if the company's free cash flow is negative. *Profitability* is net income before extraordinary items over total assets. *M&A* is a dummy variable equal to 1 if a company reported any merger or acquisition activity. *Age* is the natural log of the number of years for which the company has total assets in Compustat. *Specialist* is 1 if the company's auditor is the industry leader in the country. *Big4* is 1 if the company is audited by Deloitte, Ernst and Young, KPMG, or PriceWaterhouseCoopers. *Seg\_ind* is 1 if the company has segment data in Compustat. Industry and year effects are included in all models.

\*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 8. Chinese Reverse Mergers and ADRs**

Panel A: Distribution of Big 4 auditors				
	Regression 1		Regression 2	
	Estimate	z-statistic	Estimate	z-statistic
Intercept	3.09	(22.22)***	2.53	(-0.17)
<i>Emerge-ADR</i>	-0.21	(-1.08)	-0.09	(-0.34)
<i>China-ADR</i>	1.06	(2.77)***	3.15	(4.94)***
<i>China-ReverseMerger</i>	-5.31	(-24.11)***	-4.40	(-12.51)***
Controls			included	
Observations	3,111		3,111	
Pseudo R <sup>2</sup>	54.98%		63.91%	

  

Panel B: Probability of Restatement				
	Regression 1		Regression 2	
	Estimate	z-statistic	Estimate	z-statistic
Intercept	-6.39	(-6.55)***	-6.22	(-5.53)***
<i>Emerge-ADR</i>	0.26	(1.30)	0.24	(1.13)
<i>China-ADR</i>	-1.54	(-3.50)***	-1.61	(-3.59)***
<i>China-ReverseMerger</i>	1.26	(2.86)***	1.76	(2.97)***
Controls	included		included	
Observations	3,111		2,660	
Pseudo R <sup>2</sup>	16.87%		18.26%	

  

Panel C: Audit Fees				
	Regression 1		Regression 2	
	Estimate	t-statistic	Estimate	t-statistic
Intercept	6.56	(7.91)***	6.97	(10.20)***
<i>Emerge-ADR</i>	-0.14	(-0.92)	-0.14	(-0.93)
<i>China-ADR</i>	0.49	(2.53)**	0.45	(2.50)**
<i>China-ReverseMerger</i>	0.14	(0.53)	0.50	(2.65)***
Controls	included		included	
Observations	3,111		2,660	
Adjusted R <sup>2</sup>	82.46%		81.45%	

This table reports prior results after adding observations of Chinese reverse mergers. Panel A, Panel B Regression 1, and Panel C regression 1 are estimated using the full MSCI ADR sample plus Chinese reverse mergers. Regression 2 from Panels B and C is estimated using only the firm years audited by Big 4 auditors. Panel A estimates the regressions from Table 3. Panel B estimates the regressions from Table 7. Panel C estimates the regressions from Table 4. *Emerge-ADR* is 1 if a company is headquartered in an emerging market country other than China and lists in the US via an ADR. *China-ADR* is 1 if an ADR company is headquartered in China. *China-ReverseMerger* is 1 if a company is a Chinese reverse merger company.

\*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 9. Tobin's Q - Market valuation**

	Tobin's Q		Industry Adjusted Tobin's Q					
	Regression 1		Regression 2		Regression 3		Regression 4	
	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic
Intercept	-0.35	(-1.49)	-0.26	(-1.30)	0.04	(0.26)	-0.55	(-2.67)***
<u>Experimental Variables</u>								
<i>Emerge-ADR</i>	-0.03	(-0.49)	-0.01	(-0.20)	0.04	(1.27)	0.05	(1.35)
<i>China-ADR</i>	-0.27	(-2.97)***	-0.25	(-2.69)***	-0.18	(-2.89)***	-0.18	(-2.54)**
<i>China-ReverseMerger</i>			-0.53	(-4.69)***			-0.45	(-5.47)***
<u>Control Variables</u>								
<i>Sales</i>	0.01	(0.57)	0.00	(-0.21)	0.00	(-0.29)	-0.01	(-0.77)
<i>Leverage</i>	-0.32	(-2.12)**	-0.08	(-0.40)	-0.17	(-1.56)	-0.22	(-1.75)
<i>ReturnVolatility</i>	1.03	(2.21)**	0.52	(1.57)	0.78	(2.14)**	0.5	(1.69)
<i>Investment%</i>	0.68	-1.49	1.03	(2.36)**	0.25	(0.73)	0.39	(1.12)
<i>Lag_Tobin's Q</i>	0.62	(-17.40)***	0.57	(15.95)***	0.77	(23.92)***	0.71	(19.64)***
Observations	2,563		2,874		2,264		2,572	
Adjusted R <sup>2</sup>	67.67%		63.10%		69.12%		59.57%	

We use an OLS regression to estimate the market valuation of ADR and reverse merger companies. The dependent variable for regressions 1 and 2 is *Tobin's Q* which is measured as the sum of the market value of common stock plus the book value of preferred stock plus the book value of long-term debt, all divided by the book value of total assets. The dependent variable for Regressions 3 and 4 is *Tobin's Q* adjusted for the mean value of *Tobin's Q* in the company's industry. *Emerge-ADR* (*China-ADR*) is set to 1 if a company is headquartered in China. *Chinese-ReverseMerger* is set to 1 if the company is a Chinese company incorporated in the US via a reverse merger. The control variables are defined as follows. *Sales* is the logarithmic transformation of total sales. *Leverage* is total debt divided by total assets. *Return\_volatility* is the standard deviation of monthly stock returns over the previous 3 years. *Investment%* is the sum of research and development and capital expenditures scaled by total assets. *Lag\_Tobin's Q* is the prior year's *Tobin's Q*. Year and industry fixed effects are included in Regressions 1 and 2. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.