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Financial Reporting Quality of Chinese Reverse Merger Firms: The Reverse Merger Effect or the China Effect?

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Abstract

In this paper, we examine why Chinese reverse merger (RM) firms have lower financial reporting quality. We find that while U.S. RM firms have similar financial reporting quality as matched U.S. IPO firms, Chinese RM firms exhibit lower financial reporting quality than Chinese ADR firms. We further find that Chinese RM firms exhibit lower financial reporting quality than U.S. RM firms. These results indicate that the use of RM process is associated with poor financial reporting quality only in firms from China, where the legal enforcement is weaker than U.S. In addition, we find that compared to Chinese ADR firms, Chinese RM firms have lower CEO turnover performance sensitivity, a measure of bonding incentives, and poorer corporate governance, which in turn explains the lower financial reporting quality in Chinese RM firms. Overall the results suggest that the RM process provides Chinese firms with low bonding incentives and poor governance the opportunity to access the U.S. capital markets, resulting in poor financial reporting quality in Chinese RM firms.

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1. Introduction

In this paper, we examine why Chinese reverse merger (RM) firms listed in the U.S. have lower financial reporting quality. This examination is motivated by the recent popularity of Chinese RM firms and the associated accounting problems in the last couple of years. In an RM deal, a U.S. public shell firm acquires a private operating firm. While the original U.S. public shell firm survives, the original private firm's shareholders maintain control.[1] Compared to initial public offerings (IPOs), the RM process is faster and less costly. RM has been the most popular alternative to IPOs for firms to go public in the U.S. since the 1990s (e.g., Floros and Shastri 2009a). In recent years, many foreign firms, particularly those from China, entered the U.S. equity markets via RMs. Overall, there were 448 Chinese RM deals during the period of 2000-2011.[2] Over 90% of the foreign RM firms listed on the major stock exchanges are Chinese RM firms.

Despite its popularity, the RM process has been criticized as a "back door" or "shortcut" to go public because RM firms bypass the Securities and Exchange Commission's (SEC) and the market's scrutiny in the listing process. Many suspect that foreign RMs only "rent" the benefits of listing in the U.S. without actually improving their corporate governance and financial reporting quality. These concerns are particularly noteworthy for Chinese RM firms, which are subject to weaker legal enforcement. In 2010 and 2011, many Chinese RM firms restated their financial statements, and many shareholders sued Chinese RM firms for frauds (e.g., Siegel and Wang 2013). These scandals trigger the rapid decline of the value of Chinese RM firms which has been exacerbated by short sellers. As a result, from mid-2010 to mid-2011, Chinese RM

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[1] A public shell company is defined as a public reporting registrant that has no or nominal operations and no or nominal assets, which usually consist solely of cash and cash equivalents (SEC Securities Act Release No. 33-8587). In general, shell companies can be classified as virgin shells, development stage shells, and natural shells.
[2] During the same period, there were 135 Chinese ADRs (IPO-ADRs) issued and listed on major stock exchanges and an additional 107 unsponsored or Level 1 Chinese ADRs.

firms lost 80% of their market value (Templin 2012).

In this paper we examine whether the low financial reporting quality of Chinese RM firms results from the use of the RM method (i.e., the RM factor), the weak legal enforcement over Chinese firms (i.e., the China factor), or both? If it is the less scrutinized RM method that has caused the problem, we would expect U.S. RM firms to have lower financial reporting quality than their counterparts, the U.S. IPO firms, and Chinese RM firms to have lower financial reporting quality than other Chinese firms listed in the U.S., i.e., Chinese ADR (American depositary receipt) firms. If the cause is the weak legal enforcement over Chinese firms, we could expect Chinese RM firms to have lower financial reporting quality than U.S. RM firms. Built on the cross-listing literature, we further argue that the less scrutinized RM process allows the Chinese firms with weaker bonding incentives to access the U.S. capital markets. As such, Chinese RM firms would have poorer corporate governance and lower financial reporting quality than Chinese ADR firms.

We investigate these questions based on a sample of 193 Chinese RM firms traded on the major stock exchanges or OTC bulletin board that have data required for the analyses. Because of the inherent difficulty in capturing financial reporting quality, we follow prior research (e.g., Hope et al. 2013) and use a wide range of measures: five accrual-based measures, conditional conservatism, and the likelihood of accounting restatements. To ensure that the differences in financial reporting quality are not driven by the differences in firm characteristics, we control for a comprehensive list of determinants of financial reporting quality.

Before investigating the primary research question, we first investigate *whether* Chinese RM firms have lower financial reporting quality as commonly believed. We use U.S. IPO firms matched on the trading venue (NYSE, AMEX, NASDAQ, or OTC), industry, year, and size as

control firms. We find that the financial reporting quality of Chinese RM firms is indeed lower than that of the matched U.S. IPO firms.

With respect to our research question, we document three major empirical results. First, we investigate whether the RM factor leads to lower financial reporting quality for U.S. and Chinese firms, respectively, when holding the legal enforcement constant. We find that the financial reporting quality of U.S. RM firms is comparable with that of U.S. IPO firms matched on the trading venue, industry, year, and size. In contrast, we find that the financial reporting quality of Chinese RM firms is lower than that of Chinese ADR firms. This result is interesting because the legal enforcement is the same for both types of Chinese firms and the regulatory requirement for on-going disclosure is arguably more stringent for Chinese RM firms than for Chinese ADR firms. These results indicate that the RM process does not lead to lower financial reporting quality for U.S. firms, but it does for Chinese firms.

Second, we investigate whether the China factor is important when holding the RM process constant. We find that the reporting quality of Chinese RM firms is lower than that of U.S. RM firms. Given that both types of firms adopt the same listing method, this result indicates that the lack of screening and monitoring associated with the RM process leads to lower financial reporting quality only when the RM firms are subject to weak legal enforcement. (Due to the lack of data, we cannot test whether RM firms from other countries with weak legal enforcement have lower financial reporting quality like Chinese RM firms.)

Third, we argue that Chinese firms with weak bonding incentives and poor corporate governance use the RM process to bypass the market and regulatory scrutiny, leading to lower financial reporting quality. To test this conjecture, we examine the differences in the strength of bonding incentives and corporate governance features between Chinese RM firms and Chinese

ADR firms. First, following Lel and Miller (2008), we use the CEO turnover-performance sensitivity to capture the strength of bonding incentives. We find that the sensitivity is lower for Chinese RM firms than for Chinese ADR firms, supporting the conjecture that Chinese RM firms have lower bonding incentives. Second, we find that compared to Chinese ADR firms, Chinese RM firms have higher insider ownership, lower foreign ownership, smaller boards, lower board independence, higher likelihood of CEO-Chairman duality, and lower CEO option-based compensation. These results suggest that Chinese RM firms engage in fewer bonding activities than Chinese ADR firms, and these can lead to poorer financial reporting quality (Licht 2003; Doidge et al. 2004; Siegel 2005; Leuz 2006). We further confirm that the likelihood of using RM transactions as explained by governance variables is associated with lower financial reporting quality. Third, to further triangulate the results, our cross-sectional analysis *within* Chinese RM firms indicates that those with stronger corporate governance and those with Big4 auditors have better financial reporting quality, whereas issuing additional shares and being qualified for IPOs in China are associated with lower financial reporting quality.

This study contributes to the literature in several important ways. First, this study sheds light on why Chinese RM firms have lower financial reporting quality. It answers the call for more research on the financial reporting quality of Chinese RM firms (PCAOB 2011). We find that choosing a non-Big4 auditor, avoiding IPOs in China when qualified, having poor corporate governance, and issuing additional shares are all associated with poor financial reporting quality of Chinese RM firms. These findings should be of interest to regulators in designing rules to enhance the financial reporting quality of foreign RM firms, and to the investors who trade on the shares of these firms.

Second, our paper contributes to the literature on the financial reporting quality of foreign

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firms listed in the U.S. by investigating the impact of adopting the most popular listing method in recent years—the RM—on financial reporting quality (Lang et al. 2003; Lang et al. 2006; Leuz 2006; Ndubizu 2007). Prior research on the financial reporting quality of cross-listed firms generally excludes RM cases. In particular, our paper builds on and extends Lang et al. (2006) in several important dimensions. First and foremost, the objectives of the two studies are different. Lang et al. (2006) compare the financial reporting quality of ADRs and U.S. domestic firms. In the China context, that comparison would be that between Chinese ADRs and U.S. IPO firms. Yet our objective is to investigate *why* Chinese RM firms have low financial reporting quality. Second, one can infer from Lang et al.'s (2006) conclusion that the weak investor protection in China would lead Chinese RM firms to have lower financial reporting quality than U.S. IPO firms or U.S. RM firms. However, Lang et al.'s (2006) analysis does not shed light on the differences between U.S. RM firms and U.S. IPO firms or the differences between Chinese RM and Chinese ADR firms. These comparisons enhance our understanding of the impact of RM process on U.S. firms and Chinese firms, respectively, and help us nail down the reasons for why Chinese RM firms have lower financial reporting quality. Lastly, we examine whether Chinese RM firms have lower bonding incentives and weaker corporate governance than Chinese ADR firms and whether these differences contribute to lower financial reporting quality in Chinese RM firms.

Third, this study contributes to the cross-listing literature (Licht 2003; Siegel 2005; Lang et al. 2006; Leuz 2006). The analysis of Chinese RM and ADR firms is particularly interesting because it highlights the importance of listing choices and the analysis is not affected by the country-specific effect. The results suggest that when alternative listing choices are available, while some firms choose the more stringent listing method, adopt better corporate governance

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mechanisms, and hire high quality auditors to improve their financial reporting quality, others choose the less stringent listing method to bypass regulator and market scrutiny.

This paper is related to, but significantly different from, several concurrent studies that examine various issues surrounding Chinese RM firms. Focusing on the fundamentals, Lee et al. (2013) find that Chinese RM firms are more likely to survive and have better performance than other RM firms. Note that Lee et al.'s results are different from the findings of earlier studies of reverse merger firms (e.g., Adjei et al. 2008; Jindra et al. 2012), potentially due to differences in the research design (e.g., choices of control firms). Darrough et al. (2013) examine the spillover effects of Chinese fraud firms on non-fraud Chinese firms. They find that non-fraud Chinese firms also experience a significant drop in stock prices in late 2010 and 2011. He et al. (2013) and Ang et al. (2012) arrive at similar conclusion as Darrough et al. (2013) and further find that many Chinese firms delist afterwards. Unlike these studies, our paper examines why Chinese RM firms have low financial reporting quality.

Note that our analyses focus on the financial reporting quality, not investors' perception of it. When we used the earnings response coefficient to capture investors' perception of financial reporting quality, we find that Chinese RM firms do not differ from other firms. This result is consistent with the crash of Chinese RM firms experienced in 2011 and the evidence in the literature of accounting restatements (e.g., Ettredge et al. 2012). In addition, we find that Chinese RM firms that have lower financial reporting quality experience lower future stock returns than those with higher financial reporting quality.

Our paper is more closely related to a concurrent study, Givoly et al. (2012). Givoly et al. (2012) also find that Chinese RM firms have lower financial reporting quality than matched U.S. IPO firms. They attribute this result broadly to the cultural and institutional differences between

the U.S. and China without providing any direct evidence. Unlike Givoly et al. (2012), we conduct a more comprehensive analysis. Our results suggest that neither the RM process nor the China factor alone leads to poor financial reporting quality: it is the combination of the two that results in low financial reporting quality. In addition, we compare Chinese RM firms and Chinese ADR firms. The results from this comparison indicates that bonding incentives and corporate governance are associated with the listing choice of Chinese firms, and such incentives and governance characteristics affect financial reporting quality. These findings suggest that the lack of scrutiny associated with the RM process enables firms with weak bonding incentives to list in the U.S., leading to low financial reporting quality.

The rest of this paper is organized as follows. Section 2 discusses the background of Chinese RM firms and related research and develops hypotheses. Section 3 presents the sample selection, variable measurements, and descriptive statistics. Section 4 describes the research design and empirical results with regard to the financial reporting quality of Chinese RM firms. Section 5 reports the analysis of the strength of bonding incentive among U.S.-listed Chinese firms and how it relates to financial reporting quality, and Section 6 examines the market perception of Chinese RM firms' financial reporting quality. Section 7 concludes.

2. Background, related research, and hypothesis development

2.1 Background on Chinese RM firms

Foreign firms, including Chinese ones, have various incentives to access the U.S. capital markets, as documented in prior research. The most frequently cited reason is to obtain cheaper capital and increase liquidity (e.g., Pagano et al. 2002; Licht 2003). Other benefits include increased shareholder base, increased visibility, increases growth, diversification, and economies

of scale. As noted by the SEC (2011), *Investor Bulletin on Reverse Mergers*, obtaining access to the U.S. capital markets also improves the operating company's reputation with its customers and potential acquirers. Finally, in China, running a company listed on a U.S. stock exchange is sometimes regarded as a trophy and increases the CEO's social status. For example, Gillis (2011a) points out that some communities in China even give awards to firms that succeed in doing so. If these transactions are set up just to feed the ego of the CEO, then there is little incentive for them to improve financial reporting quality (Gillis 2011a).[3] The prestige motivation may also explain why a disproportional number of Chinese RM firms are "uplisted" to the major stock exchanges so quickly, compared with U.S. RM firms and other foreign RM firms.[4] All these potential benefits prompt Chinese firms to list in the U.S.

In recent years, RM has become the most popular approach for Chinese firms to go public in the U.S. In a typical Chinese RM transaction, a U.S. public shell company acquires a Chinese private firm through a share exchange. The U.S. public firm survives, but the directors and managers are replaced by the executives of the Chinese private firm. Because the Chinese firm effectively inherits the public status of the U.S. firm, its filing status remains that of a U.S. domestic firm and is subject to the same disclosure regulations as other U.S. domestic firms (Licht 2003).

One of the reasons for the popularity of RMs is that compared to other approaches (e.g., IPOs), the reverse merger process is faster and cheaper. Adjei et al. (2008) estimate that the cost of setting up a public shell company and completing the reverse merger transaction can be as low as $50,000, while completing an IPO can cost millions of dollars. Consistent with this notion,

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[3] "Understanding Chinese Frauds," http://chinaaccountingblog.com/weblog/understanding-chinese-fraud.html
[4] In a similar vein, Hung et al. (2012) find that SOEs with strong political connections are more likely to list on oversea exchanges because managers of these firms are more likely to gain private benefits, such as receiving political media coverage or a promotion to a senior government position subsequent to the oversea listing.

prior research finds that smaller, younger, and poorly performing firms are more likely to undertake RM transactions rather than using alternatives such as IPOs (Adjei et al. 2008; Jindra et al. 2012). Thus, despite the disadvantages of RMs – less funding, little support from market intermediaries, being traded on the OTC market (Feldman 2009), the number of Chinese RM firms has grown rapidly in the past decade.

However, Chinese RM firms, especially those listed on the major stock exchanges, have drawn significant attention recently due to an increasing number of accounting fraud cases in late 2010 and 2011. In early 2011, the SEC suspended the trading of several firms' shares and revoked the securities registration of several others, primarily due to financial reporting concerns. High-profile short-sellers also targeted Chinese RM firms.[5] In response to the widespread issues, in July 2011, the SEC issued a bulletin warning investors of investing in RM firms. In the same year, the PCAOB issued a research note highlighting the problems with Chinese RM firms, particularly the concerns with the audit quality.

Many commentators and regulators attribute the issues to the loopholes in the RM transaction process. For example, in April 2011, Luis Aguilar, one of the SEC's commissioners commented:[6]

> There are a lot of different ways for companies to access the public markets, but not all of them are equal. They differ in the quality of the disclosures, the time investors and the SEC typically have to consider them, and the protections that investors have against false and fraudulent statements... In the world of backdoor registrations to gain entry into the U.S. public market, the use by Chinese companies has raised some unique issues... There appear to be systematic concerns with the quality of the auditing and financial reporting.

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[5] For example, J Capital Research issued a research report on China Green Agriculture on Jan 5, 2011, Muddy Waters on Sino-Forest on June 2, 2011, and Citron Research on several Chinese RM firms in 2011.
[6] An excerpt from the speech by SEC Commissioner Luis A. Aguilar: *Facilitating Real Capital Formation,* at the SEC Council of Institutional Investors Spring Meeting at Washington, D.C. on April 4, 2011, http://www.sec.gov/news/speech/2011/spch040411laa.htm.

That is, investors and the SEC have less time to evaluate the firm during the RM process.[7]

Compared to the RM process, the IPO process provides ample opportunities for information

dissemination, including road shows and detailed prospectuses. While IPOs must file financial

reports with the SEC for approval before going public, RMs only have to file the consolidated

financial reports (super 8K) *after* the transaction. In addition, a super 8K is not as detailed as a

prospectus. For example, a super 8K usually provides information for the last two years, while a

prospectus typically provides information for the last five years. Most of the super 8Ks lack

complete and detailed financial statements.

The protection that investors have against false financial statements is also much weaker in

the RM cases than in the IPO ones. Because IPO cases involve the issuance of new shares,

investment banks are also responsible for the representational faithfulness of the financial

statement. In contrast, no underwriters are involved in RM cases, and most of the law firms or

auditors involved in RM deals tend to be small. The scrutiny from financial analysts and

institutional investors is also lacking because most of the RM firms are traded on the OTC

market.

However, one should distinguish between regulatory requirements for the listing process

and the regulatory requirements related to on-going reporting. While the RM process is

characterized by weak scrutiny, the firms are subject to the same regulatory requirements for the

on-going financial reporting as firms that go public via IPOs. For example, when discussing the

regulatory requirements and auditing standards for Chinese RM firms on CNBC's *Fast Money*,

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[7] The RM transaction can progress so fast that it is possible for an RM firm to be listed on a major stock exchange even before the required financial statement is filed with the SEC. For example, a Chinese firm, SinoCoking, merged into a shell company, Alleauctions.com, on February 5, 2010. Three days later, Form 8-K was filed and the company was quoted on the OTC market. Thirteen days later, the stock up-listed to Nasdaq. However, it is not until March 18th that SinoCoking amended their 8-K filings to include the required audited financial statements with the SEC.

the CEO of NASDAQ OMX Group, Bob Greifeld, declared that "Let's make it clear – it's identical." Please refer to Templin (2012) for more detailed discussions on the regulatory and legal issues related to Chinese RM firms.

In response to the widespread issues with Chinese RM firms, the SEC adopted new rules in November 2011, requiring reverse merger firms to go through a one-year "seasoning period" and maintain a minimum share price for an extended period before their shares can be traded on the major stock exchanges (NYSE, AMEX, or NASDAQ). Whether the new rules are effective remains to be seen.

2.2 Related research

This paper is broadly related to the cross-listing literature, particularly those studies that examine the impact of cross-listing on financial reporting quality. There is a long line of research that examines the impact of cross-listing on foreign firms' corporate decisions and firm value. Please refer to Coffee (2002), Licht (2003), Siegel (2005), Leuz (2006) for more detailed discussion. Note that prior studies on cross-listing focus on ADRs and do not include RM firms in their samples. In terms of the relationship between cross-listing and financial reporting quality, Lang et al. (2003) find that compared to firms in their home countries, firms cross-listed in the U.S. reflect bad news in a more timely manner, have a higher correlation between earnings and share prices, and appear to be less likely to engage in earnings management. Bailey et al. (2006) also document that cross-listed firms have higher earnings response coefficients (ERCs) than firms that are not cross-listed.

In addition to comparing cross-listed firms with firms listed in their own countries, previous studies also examine the financial reporting quality of cross-listed firms relative to U.S. domestic firms. For example, Lang et al. (2006) find that cross-listed firms are more likely to

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engage in earnings management than U.S. domestic firms. Ndubizu (2007) finds similar evidence, particularly at the time of cross-listing. He also finds that non-IPO ADR firms do not differ from IPO ADR firms in financial reporting quality.

The aforementioned studies are generally built on the bonding hypothesis (e.g., Coffee 1999; Stulz 1999), which states that firms with poor minority shareholder protection signal their desire to respect shareholder rights by listing in a jurisdiction with higher market scrutiny, tougher regulations, and better enforcement. However, the strength of legal bonding has been challenged recently. First, ADRs are exempt from some requirements related to disclosure and corporate governance (e.g., Licht 2003; Leuz 2006). For example, ADRs are exempt from the proxy and insider trading provisions of the Securities and Exchange Act of 1934, from quarterly reporting requirements, and from Regulation Fair Disclosure. In addition, they do not need to prepare the full U.S. GAAP financial statement and only need to prepare 20-Fs. Second, legal enforcement actions against foreign firms are rare and often result in insignificant penalties (e.g., Siegel 2005; Licht et al. 2013). Such weak enforcement over foreign firms reduces managers' incentives to improve corporate governance and provide high-quality financial statements. Given the recent development in the cross-listing literature, some researchers extend the scope of bonding to include not only the legal bonding mechanism but also a dynamic reputation building process, through which mangers gradually build a reputation for not expropriating minority shareholders by, for example, voluntarily improving corporate governance and hiring reputable auditors and investment bankers (Siegel 2005; Marosi and Massoud 2008). These market players can further monitor foreign firms and improve the information environment, thereby reducing the information asymmetry between controlling and minority shareholders.

2.3   Hypothesis development on the financial reporting quality of Chinese RM firms

In this section, we develop the hypotheses on why Chinese RM firms have lower financial reporting quality. We first explore the impact of the RM factor for U.S. firms by comparing U.S. RM firms and U.S. IPO firms, and for Chinese firms, by comparing Chinese RM and Chinese ADR firms. We then explore the China factor by comparing Chinese RM and U.S. RM firms. Lastly, we develop hypotheses related to Chinese firms' bonding incentives and corporate governance. The argument is largely built on the cross-listing literature, as discussed above. Prior research on cross-listing suggests three primary factors that can affect the financial reporting quality of foreign firms listed in the U.S.:

1. Enhanced disclosure requirements and market scrutiny in the U.S. These are the foundations of the bonding mechanism and can improve the financial reporting quality of foreign firms, compared to their counterparts in the home countries (e.g., Lang et al. 2003; Leuz 2006; Gong et al. 2013). However, we are not comparing Chinese firms listed in the U.S. versus those listed in China. As such, this factor is not relevant for our study.

2. Investor protection in the home country and the SEC enforcement on foreign firms. For foreign firms from countries with weak investor protection, being listed in the U.S. can improve their financial reporting quality. However the weak investor protection in their home countries and the weak SEC enforcement on foreign companies, as discussed in the recent cross-listing literature, can reduce the bonding incentives and lead to lower financial reporting quality, compared to their U.S. counterparts (e.g., Lang et al. 2003; Siegel 2005; Leuz 2006; Gong et al. 2013).

3. Listing choices and firm level bonding incentives and governance. How a foreign firm accesses the U.S. capital markets could affect its financial reporting quality because of

differences in the level of scrutiny during the listing process. What is particularly relevant for this paper is whether the RM process is associated with lower financial reporting quality. While many firms choose the RM process because it is cheaper and faster, others might choose it because the scrutiny is less stringent. Therefore, firms with weaker bonging incentives and poorer governance may choose the RM process. Many studies argue that firms' incentives and governance have a significant impact on their financial reporting quality than the accounting rules in general (e.g., Ball et al. 2003) and for foreign firms listed in the U.S. in particular (Leuz 2006).

Below we elaborate on the impact of these factors in the corresponding sections when applicable.

The RM factor

As discussed in detail in Section 2.1, the potential loopholes associated with RM transactions, particularly the lack of market and regulatory scrutiny, have drawn attention from both the investment community and the regulators. As discussed above, the weak scrutiny by both regulators and market participants, along with other problems with the RM process, can result in lower financial reporting quality for RM firms than for their counterparts.

To isolate the potential RM effect for U.S. firms, we compare U.S. RM firms with U.S. IPO firms. Since these two groups of firms differ only in the listing process, if the loopholes in the RM process are the main driver, we expect U.S. RM firms to have lower financial reporting quality than U.S. IPO firms:

> *H1: Ceteris paribus, the financial reporting quality of U.S. RM firms is lower than that of the U.S. IPO firms.*

To isolate the potential RM effect for Chinese firms, we compare the financial reporting

quality of Chinese RM firms with that of Chinese ADR firms.[8] This comparison holds constant

the legal enforcement because both Chinese RM firms and Chinese ADR firms are subject to the

same legal enforcement and they only differ in the listing choices. Thus, if the loopholes in the

RM process are the main driver, our second hypothesis is:

> *H2: Ceteris paribus, the financial reporting quality of Chinese RM firms is lower than that of the Chinese ADR firms.*

However, compared to Chinese ADR firms, Chinese RM firms are subject to more

stringent regulations on on-going reporting. As noted in Leuz (2006) and Licht (2003), ADR

firms are exempt from the proxy and insider trading provisions of the Securities and Exchange

Act of 1934 and the quarterly reporting requirement, among other things. In contrast, because

Chinese RM firms inherit the filing status of U.S. shell firms, they must file just as frequent and

detailed disclosures as U.S. IPO firms. This difference in regulatory requirements for on-going

reporting likely biases against finding results consistent with H2.

The China factor

The weak legal enforcement on Chinese firms is in large part due to the difficulties

experienced by U.S. regulators in gathering evidence from China and the difficulties experienced

by investors in the U.S. in protecting their legal rights (e.g., Cheng et al. 2012; McMahon 2012).

The problem is exacerbated by the lack of jurisdiction of the U.S. enforcement officials and the

lack of intention and/or resources of Chinese regulators to monitor and discipline Chinese RM

firms (Jindra et al. 2012; Siegel and Wang 2013).[9] Many Chinese RM firms admit that both

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[8] Most non-RM Chinese firms listed in the U.S. are ADR firms and our analyses focus only on Chinese ADR firms to avoid confounding effects.
[9] For example, Jindra et al. (2012) argue that "while the incidence of litigation appears higher for CRM [Chinese RM] firms, the cost of litigation as measured by dollar settlement amounts does not appear large, especially when compared to other settlements (page 24)."

investor protection in China and U.S. enforcements are weak.[10, 11] Templin (2012) notes that

regulators have weak enforcement power over not only Chinese RM firms, but also their Chinese

auditors. He also argues that Chinese auditors, usually carrying out the audit work for the U.S.

auditors hired by Chinese RM firms, are short of skills and sometimes have lower ethical

standards. All these problems can lead to poor financial reporting quality.[12]

To study the impact of the China factor – the effect of weak legal enforcement over

Chinese firms on the financial reporting quality, we would like to control for the listing choice.

For this purpose, we compare the reporting quality of Chinese RM and U.S. RM firms. Both

groups of firms go through the same listing process and are subject to the same financial

reporting rules. If weak legal enforcement leads to lower financial reporting quality, then we

expect that Chinese RM firms have lower financial reporting quality than U.S. RM firms:

> *H3: Ceteris paribus, the financial reporting quality of Chinese RM firms is lower than that of the U.S. RM firms.*

Chinese RM firms and Chinese ADR firms: bonding incentives and corporate governance

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[10] For example, with respect to the weak U.S. enforcement, on page 19 of their prospectus, China Display state that. "It will be extremely difficult to acquire jurisdiction and enforce liabilities against our officers, directors and assets based in China. Substantially all of our assets will be located outside of the United States and our officers and directors will reside outside of the United States. As a result, it may not be possible for United States investors to enforce their legal rights, to effect service of process upon our directors or officers or to enforce judgments of United States courts predicated upon civil liabilities and criminal penalties of our directors and officers under Federal securities laws. Moreover, we have been advised that China does not have treaties providing for the reciprocal recognition and enforcement of judgments of courts with the United States. Further, it is unclear if extradition treaties now in effect between the United States and China would permit effective enforcement of criminal penalties of the Federal securities laws."

[11] For example, with respect to weak investor protection in China, China Crescent stated in its 10K: "Uncertainties with respect to the Chinese legal system could limit the legal protections available to you and us. We conduct substantially our business through our subsidiaries in China. Our subsidiaries are generally subject to laws and regulations applicable to foreign investments in China and, in particular, laws applicable to foreign-invested enterprises. … However, since the Chinese legal system evolve rapidly, the interpretations of many laws, regulations, and rules are not always uniform, and enforcement of these laws, regulations, rules involve uncertainties, which may limit legal protections available to you and us. In addition, any litigation in China may be protracted result in substantial costs and diversion of resources and management attention. As a result, it may be difficult for investors to effect process in the United States or to enforce a judgment obtained in the United States against our Chinese operations and subsidiaries."

[12] International studies also find that financial reporting quality is higher in countries with strong investor protection (e.g., Hung 2001; DeFond et al. 2007).

When a Chinese firm intends to access the U.S. capital markets, it can to some extent choose to use the RM approach or other approaches (e.g., ADR). (While all firms can theoretically choose the RM approach, not all are eligible to use ADRs.) In light of this potential self-selection issue, we further examine the strength of the bonding incentives and the corporate governance of Chinese RM firms and Chinese ADR firms to better understand why financial reporting quality differs in these two groups of firms.

The bonding mechanism originates from the idea that foreign firms voluntarily subject themselves to stringent regulations and close monitoring from market participants in a more developed capital market in exchange for cheaper capital. Lel and Miller (2008) demonstrate how bonding incentives interact with the legal environment. Using the sensitivity of CEO turnover to performance to capture the strength of bonding incentives, they find that firms from regimes with weak investor protection have stronger bonding incentives. However, Ball et al. (2003) argue that only looking at regulations but ignoring the preparers' incentives can lead to misleading inferences. They document that when the incentive for increasing financial reporting quality is low, stringent standards do not necessarily lead to high-quality financial reporting. Subsequent studies, such as Chi et al. (2013), find that incentives, rather than rules, drive financial reporting decisions. Recent studies on the limitation of the bonding hypothesis also highlight the importance of companies' incentives to bond. High quality foreign firms can distinguish themselves by undertaking measures to protect minority shareholders' rights, including choosing a more stringent listing method, improving corporate governance, and engaging more reputable auditors.

It is possible that Chinese RM firms have particularly weak bonding incentives because most of the insiders from the original private firms usually do not cash out after the foreign RM

transactions (Floros and Shastri 2009b). Therefore, unlike the ADR firms, as examined in Coffee (2002), in which insiders enjoyed an increase in valuation premium, the existing shareholders of RM firms do not immediately benefit from bonding.

We conjecture that most of the corporate governance-related decisions made by U.S.-listed Chinese firms are tied to the strength of their bonding incentive. Coffee (2002) notes that being subject to the monitoring of reputable market intermediaries, such as high-quality auditors, can signal their intention to protect minority shareholders' rights. Firms can also enhance their reputation by strengthening their corporate governance. Stulz (1999) argues that important monitoring mechanisms, such as the independence of the board, is likely intensified by globalization in the form of cross-listings, and that these mechanisms would vary across firms, even for those from the same home market. In a weak legal enforcement environment, adopting more effective corporate governance mechanisms can serve as a strong signal of firms' bonding incentives.

This discussion motivates us to examine the potential differential bonding incentives and corporate governance of Chinese RM firms and Chinese ADR firms. Our last set of hypotheses is thus:

> *H4a: Ceteris paribus, Chinese RM firms have weaker bonding incentives than Chinese ADR firms.*

> *H4b: Ceteris paribus, the strength of corporate governance is weaker in Chinese RM firms than in Chinese ADR firms.*

3. Sample and data

3.1 Sample selection

We rely on multiple sources to compile the list of Chinese RM firms. We start with the list of Chinese RM firms from Dealflow Media. Dealflow Media tracks RM deals with US shell

companies starting from 2001. From Dealflow Media, we identify 432 reverse merger deals involving Chinese private companies in the period 2001-2011. We then cross-check the list with Chinese RM firms listed on NYSE, NYSE Amex, and NASDAQ from the Bloomberg report published in June 2011 and the U.S.-listed Chinese firms included in Halter USX China Index and CYNES.com.[13] To ensure that these firms are listed through the RM method, we go through these firms' annual filings and websites. These steps yield 16 additional Chinese RM firms, resulting in the initial sample of 448 Chinese RM firms in 2000-2011.

To be included in our final sample, Chinese RM firms need to satisfy the following criteria: (1) the headquarter of the firm and the majority of the operations are in China; (2) SEC filings (i.e., the first 10K and 8K filings) are available to verify whether a U.S. shell company is involved;[14] (3) the accounting data are available from Compustat; and (4) firms are not in finance (SIC 6000-6999) or utilities industries (SIC4900- 4949). As a result, 6, 4, 238, and 7 firms are excluded due to the above four requirements, respectively. Our final sample includes 193 Chinese RM firms in the period of 2000-2011.[15] Of these firms, 116 are eventually listed on the major exchanges and 77 are still traded on the OTC market at the time of data collection.

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[13] We rely on the Halter USX China Index to ensure the accuracy of the list. The Halter USX China Index includes Chinese firms that are listed on the NYSE, NYSE-AMEX, or NASDAQ and have a market-cap greater than $50 million. The components of the index are updated quarterly based on the basic market value requirement and other factors. To avoid the survivorship bias, we collect a historical list of Chinese issues from quarterly reports of the Halter USX China Index since 2003.

[14] We limit our RM firms with shell firms for two reasons. First, an RM transaction between two operating firms is similar to regular merger and acquisitions except that it is the target, not the acquirer, that survives. A lot of reputable firms are established through this method, including Blockbuster, Occidental Petroleum, RadioShack, the NYSE, Texas Instruments, and Berkshire Hathaway. In contrast, the primary objective of RMs involving shell firms is for the private firms to go public. Second, the majority of the U.S. RM deals in our sample period are conducted through merging with shell firms; therefore, focusing on RMs with shell firms can facilitate a more appropriate comparison.

[15] Our Chinese RM sample size, 193 firms, is comparable to that of recent reverse merger studies, 118 in Lee at al. (2013), 106 in Givoly et al. (2012), and 114 in Ang et al. (2012). Our sample is slightly smaller than He et al.'s (2013) (287 firms) and Darrough et al.'s (2012) (265 firms) because we require comprehensive data coverage from Compustat to measure various financial reporting quality proxies, and many firms, particularly OTC firms, are excluded as a result. Compustat covers firms traded on the OTC market only if their shares are priced at $0.01 or above and traded fairly consistently. Including the really small and illiquid firms traded on the OTC can introduce bias to the analyses, without a clear benefit due to their economic insignificance.

Note that we include both firms traded on the major stock exchanges and on the OTC market to increase the generalizability of the results. The drawback of including OTC firms is that OTC firms are much smaller than those traded on the major stock exchanges. Also, firms traded on the OTC market are subject to less stringent market monitoring, such as that of institutional investors and financial analysts. These differences likely introduce noise to the analyses. To mitigate the impact, we match the control firms on the trading venue, as discussed in detail later. We also conduct an untabulated sensitivity test by excluding OTC firms from the sample and the results are quantitatively similar.

The sample selection process for U.S. RM firms is similar. From Dealflow Media, we identify 1,204 reverse merger deals involving U.S. private and shell companies.[16] Applying the same criteria, we obtain 273 U.S. RM firms. Of these, 65 uplist to major stock exchanges and 208 are traded on the OTC market.

We do not include non-Chinese foreign RM firms in our study because of their small sample size. There are 180 reverse merge deals conducted by foreign private companies in the period 2001-2011. However, the majority of these firms are still listed on the Pink Sheets market. Only four firms eventually move up to the major stock exchanges and 30 are listed on the OTC market.[17] For these 24 foreign RM firms, we only obtain 93 firm-years' data from Compustat. This small sample makes it impossible to examine the impact of legal origin or investor protection on the reporting quality of these RM firms as a stand-alone sample. Including these observations in the U.S. RM sample or Chinese RM sample, as done in Givoly et al. (2012), will only add noise to the analyses because of the differences in the legal infrastructure and investor

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[16] Even though Dealflow Media states that only reverse mergers involving shell companies are included, we find that eight "shell" companies were traded on the major stock exchanges before the RM deals. Excluding those firms does not change our results.

[17] Two of the four companies are from Israel, one from Kazakhstan, and one from Sweden.

protection in various countries.

We collect Chinese ADRs based on the information from the Bank of New York, JPMorgan's adr.com, CYNE.com, Sina.com, and the historical quarterly Halter USX China Index. We read 20-F filings of those ADR firms to identify the location of their headquarters and business to ensure that these firms are from China.[18] We do not include ADRs traded on the OTC because they are exempt from the SEC reporting requirements and not covered in Compustat.[19] These steps result in a sample of 142 U.S.-listed Chinese ADRs in the period 2000-2011.

In addition to accounting data from Compustat, we obtain the price and return data from CRSP, auditing data from Audit Analytics, seasoned equity offerings and private placement data from the Thomson SDC New Issues database, and private investment in public equity (PIPE) from Sagient Research's Placement Tracker database.[20] We hand-collect CEO turnover and corporate governance variables of Chinese RM and ADR firms from 10Ks, 20Fs, and proxy statements filed with the SEC.

Panel A of Table 1 reports the yearly distribution of Chinese RM firms, U.S. RM firms, and Chinese ADRs.[21] There are more Chinese RM deals in the period 2004-2010. Panel B of Table 1 presents the distribution based on the trading venue at the time of data collection. NASDAQ is the most popular exchange across the three groups of firms. In comparison, Chinese RM firms are more likely to be traded on the major exchanges than U.S. RM firms. Also, a disproportionally high percentage of Chinese ADR firms (67 out of 142) are listed on the

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[18] Eleven firms from the Halter index are not included in our final sample because they are HK firms. Including these firms does not affect our results.

[19] Specifically, ADRs (sponsored or unsponsored) traded on the OTC can obtain exemption from Section12g3-2(b) of the Security Exchange Act of 1934 registration and Reporting requirements.

[20] The primary difference between PIPEs and traditional private placements is the duration of the resale restrictions imposed on the participating investors. Please see Chen et al. (2010) for detailed discussions.

[21] There are 3 Chinese RM firms and 21 Chinese ADR firms that were listed before 2001. Data for U.S. RM firms involving shell firms before 2001 are not available from DealFlow Media. Excluding these 24 Chinese firms from the sample does not affect the results.

NYSE.[22] Panel C of Table 1 presents the sample distribution by Fama-French industry classification. Most of the U.S.-listed Chinese firms are from the manufacturing, business equipment, and healthcare industries. Most of the U.S. RM firms are in the oil and gas, healthcare, and business equipment industries.

To test H1, we need a sample of U.S. IPO firms. As discussed above, prior research finds that small firms and poorly performing firms tend to use the RM process to access the capital markets. We make two design choices to control for this potential self-selection issue. First, we use U.S. IPO firms matched on trading venue, industry, year and size as control firms when evaluating the financial reporting quality of Chinese RM and U.S. RM firms.[23] Second, as discussed below, we include a comprehensive list of variables that prior research shows to affect financial reporting quality, including firm size, sales growth, M/B, firm performance, capital needs, operating cycle, inventory, as well as industry fixed effects. We believe that our research design addresses the potential confounding effect of the differences in firm characteristics between RM and IPO firms and the documented results capture the difference in financial reporting quality between U.S. RM firms and matched U.S. IPO firms.

3.2 *Measurement of financial reporting quality*

Because there are no universally accepted measures of financial reporting quality, we use a wide range of measures to triangulate our results (Dechow et al. 2010). The use of multiple measures also helps capture different aspects of financial reporting quality.

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[22] The results are quantitatively similar when we control for exchange fixed effects in all regressions.

[23] In an untabulated analysis, we use a propensity score method to identify the matched U.S. IPO firms separately for U.S. RM firms and Chinese RM firms. Specifically, we identify all U.S. IPO firms that are in the same year and exchange as the U.S. RM firms. For each exchange-year, we estimate a Logit regression with the indicator variable for U.S. RM firms as the dependent variable and firm size, leverage, market to book ratio, sales growth, capital needs, operating cycle, firm performance, and industry indicators as the independent variables. We calculate the propensity score for each observation and for each U.S. RM firm, we find the U.S. IPO firm that has the closet propensity score (with the maximum difference of 0.001) as the matched U.S. IPO firm. We find matched U.S. IPO firms for Chinese RM firms using the same methodology. The inferences from the untabulated tests remain the same.

The first five measures are accrual-based financial reporting quality measures. The following is a brief description, and please see Appendix A for detailed discussion. The first measure is the absolute value of discretionary accruals ($|DA|$) estimated from the Jones model as modified in Dechow et al. (1995). The second measure is based on the cross-sectional Dechow and Dichev (2002) model, as modified in McNichols (2002), Francis et al. (2005), Ball and Shivakumar (2006), and Givoly et al. (2009). The absolute value of the residual from the regression ($|DD|$) is used as a proxy for financial reporting quality. The third measure is the absolute value of discretionary revenue ($|DR|$), the residual estimated from a regression of accounts receivable on change in revenue, as developed in McNichols and Stubben (2008) and Stubben (2010). The fourth measure is based on the natural logarithm of the ratio of the absolute value of accruals to cash flows, *ln|ACCR/OCF|*, as developed and used in Burgstahler et al. (2006) and Hope et al. (2013). Firms may overstate earnings to achieve certain earnings targets or to report good performance in specific instances through accrual choices, without affecting cash flows. The higher the ratio, the lower the financial reporting quality. The fifth measure is the smoothing measure used in man international studies to capture the extent of earnings management (e.g., Leuz et al. 2003). It is measured as the standard deviation of net income over the standard deviation of operating cash flows. To be consistent with other measures, we multiply the ratio by -1 so that the higher the value, the lower the reporting quality.

We also conduct a principal component analysis to capture the common construct underlying the five accrual-based financial reporting quality measures. We define the financial reporting index (*FRQ*) as the first principal component of these five variables. There is only one factor with eigenvalue larger than one (2.4) and it explains 48.5% of the sample variance and is

positively correlated with each individual measure.[24]

Next, we use the model introduced in Ball and Shivakumar (2006) to measure the conditional conservatism. This measure has been used in many prior studies (e.g., Hope et al. 2013). Firms that recognize bad news in a more timely fashion have higher conditional conservatism and are usually regarded as of higher financial reporting quality. Specifically, we estimate the following model:

$$\Delta NI_{i,t} = \alpha_0 + \alpha_1 \Delta NI_{i,t-1} + \alpha_2 D\Delta NI_{i,t-1} + \alpha_3 D\Delta NI_{i,t-1} \times \Delta NI_{i,t-1} + \alpha_4 CRM_{i,t} + $$
$$\alpha_5 D\Delta NI_{i,t-1} \times CRM_{i,t} + \alpha_6 \Delta NI_{i,t-1} \times CRM_{i,t} + \alpha_7 D\Delta NI_{i,t-1} \times \Delta NI_{i,t-1} \times CRM_{i,t} + \varepsilon_{i,t}$$

ΔNI is the change in net income scaled by lagged total assets and $D\Delta NI$ is a dummy variable for negative ΔNI. CRM is an indicator variable for Chinese RM firms. While α_1 measures the persistence of positive change in net income, α_3 measures the incremental persistence of negative change in net income. Conservative accounting implies α_3 to be negative because bad news is recognized more timely than good news. If Chinese RM firms are less conservative than the control group, α_7 is expected to be positive, and vice versa.[25] We revise this model accordingly when comparing the financial reporting quality of U.S. RM firms and U.S. IPO firms.

Lastly, we use the probability of accounting restatements as a proxy for financial reporting quality. The analysis of restatements complements the analyses based on the above financial reporting quality measures. While the above accrual-based measures and the conservatism measure are likely to capture earnings management tactics within the GAAP boundaries, restatements can capture financial reporting activities beyond such boundaries (DeFond and

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[24] Because the inclusion of the smoothness measure greatly reduces the sample size, especially for some of the later analyses that require additional data, in an untabulated analysis we also generate a common factor from the other four individual measures. This factor has an eigenvalue of 2.5 and explains 61.3% of the sample variation. The results are quantitatively similar.

[25] Note that we cannot use the Basu (1997) conditional conservatism measure because some of the firms are not actively traded and potentially mispriced, leading to noises in stock returns and violating the basic assumption underlying the Basu measure that the market is efficient.

Jiambalvo 1991; Lang et al. 2006). As such, the results based on restatements may or may not be consistent with those based on accrual-based financial reporting quality measures.

We collect restatements from Audit Analytics, which covers the restatements announced since 2000. We include all restatements with available data in the sample. In an untabulated additional analysis, we also separate errors from accounting irregularities. To identify accounting irregularities, we follow the same procedure as outlined in Hennes et al. (2008) and cross-check with the list of fraud cases listed in Siegel and Wang (2013), Ang et al. (2012) and Jindra et al. (2012). As a result, 33% of the restatements in our sample are classified as accounting irregularities.

3.3   Descriptive statistics

Panel D of Table 1 reports the descriptive statistics for Chinese RM firms, U.S. RM firms, Chinese ADR firms, and the matched U.S. IPO firms, first for financial reporting quality measures and then for other variables. Overall, Chinese RM and U.S. RM firms have lower financial reporting quality based on the accrual-based measures. Chinese RM firms have a much higher likelihood of restatements (18%), compared to U.S. RM firms (7%), Chinese ADR firms (4%), and matched U.S. IPO firms (6%).[26] Because we do not have firm-year level conditional conservatism measure, we report the variables used to capture conservatism. Like Lee et al. (2013), we find that Chinese RM firms outperform other firms by having the highest change in net income. However, one should interpret this result with caution because it is possible that higher reported accounting performance is due to earnings management.

In terms of the control variables used in the financial reporting quality analysis, we find that U.S. RM firms stand out by having the highest market-to-book ratio and sales growth. The

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[26] The observation that Chinese ADR firms are less likely to have restatements than U.S. IPO firms is consistent with the findings in Srinivasan et al. (2012).

matched U.S. IPO firms have the highest leverage, although Chinese ADR firms appear to be larger. Chinese RM firms have the highest capital needs and matched U.S. IPO firms have the lowest capital needs.

4. Financial reporting quality of Chinese RM firms

In this section, we test hypotheses H1 – H3 by comparing the financial reporting quality of various groups of firms. Due to research design differences, we first examine the accrual-based measures, and then the conditional conservatism and the likelihood of restatements.

4.1 Analyses of accrual-based financial reporting quality measures

Research Design

We use the following regression model to investigate the financial reporting quality of Chinese RM firms relative to the other types of firms:

$$FRQ_{i,t} =$$

$$\alpha + \beta CRM_{i,t}(USRM_{i,t}) + \gamma Controls_{i,t} + \delta Year\ Dummies + \theta Industry\ Dummies + \varepsilon_{i,t}\ (1)$$

The dependent variable, *FRQ*, is one of the following variables: the absolute value of discretionary accrual (|*DA*|), the absolute value of working capital accruals (|*DD*|), the absolute value of discretionary revenue (|*DR*|), the natural logarithm of the absolute value of the ratio of accruals to cash flows (*ln*|*ACCR/CFO*|), the smoothing measure (*SMOOTH*), and the common factor. The variable of interest is the indicator variable *CRM*, which is 1 for Chinese RM firms and 0 for the other firms included in the regression. If the financial reporting quality of Chinese RM firms is lower than that of the comparison group, then we expect a positive sign for the coefficient on *CRM*. Note that higher variable values imply lower financial reporting quality. When comparing the financial reporting quality of U.S. RM firms with U.S. IPO firms, we

replace *CRM* with the indicator variable for U.S. RM firms, *USRM*, which is 1 for U.S. RM firms and 0 for U.S. IPO firms. The reported t-values are based on firm- and year-clustering-adjusted standard errors.

Control variables include the variables that prior research suggests affect financial reporting quality: the market-to-book ratio (*M/B*), sales growth (*Growth*), leverage (*LEV*), firm size (*Size*), capital needs (*Capital_Need*), firm performance (*ROE*, *Loss*), operating cycle (*Op_Cycle*), and inventory (*Inventory*).[27] Please see Appendix B for the definition of the variables.

Do Chinese RM firms have lower financial reporting quality?

Before investigating why Chinese RM firms have lower financial reporting quality, we first confirm whether they have lower financial reporting quality. For this purpose, we use U.S. IPO firms matched with Chinese RM firms on trading venue, industry, year, and size. Table 2 reports the regression results based on accrual-based measures. For each of the five individual accrual-based measures and for the common factor, the coefficient on *CRM* is positive and significant at the 0.05 level or better. Not tabulated for sake of space, the results based on conditional conservatism and the likelihood of restatements lead to the same inferences. These results confirm that the financial reporting quality of Chinese RM firms is lower than that of matched U.S. IPO firms. This finding indicates that the inherent problems with the RM process and/or the weak legal enforcement on Chinese firms lead to lower financial reporting quality.

Test of H1 and H2: The RM factor

To test H1, we compare the financial reporting quality of U.S. RM firms with the matched U.S. IPO firms to investigate whether the RM factor leads to lower financial reporting quality for

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[27] In an untabulated sensitivity test, we also control for the standard deviation of quarterly earnings and obtain qualitatively similar results.

U.S. RM firms. The regression results are reported in Panel A of Table 3. The coefficient on

USRM is insignificantly different from zero for all of the individual measures and the common

factor, except for |DR|, for which the coefficient on *USRM* is marginally significant (t=1.81).

These results suggest that the less scrutinized RM process does not lead to lower financial

reporting quality for U.S. RM firms.

To test H2, we compare the financial reporting quality of Chinese RM firms with Chinese

ADR firms to investigate whether the RM factor makes a difference, given that both groups of

firms are subject to weak legal enforcement. Panel B of Table 3 reports the regression results.

The coefficient on *CRM* is significantly positive for all of the individual accrual-based measures

and for the common factor, with the exception of the smoothness measure. This result is

consistent with H2 that the financial reporting quality of Chinese RM firms is lower than that of

Chinese ADR firms. Hence, the negative effects of the loopholes associated with RM

transactions, or the type of firms that RM method attracts, leads to lower financial reporting

quality. Note that this is a more conservative test because, as discussed above, Chinese RM firms

are subject to stricter disclosure and reporting requirement on an on-going basis than Chinese

ADR firms.

In sum, the results indicate that while the RM factor does not lead to lower financial

reporting quality for U.S. RM firms, it does for Chinese RM firms.

Test of H3: The China factor

Next, we compare Chinese RM and U.S. RM firms. Because both Chinese and U.S. RM

firms are subject to the same RM-related issues and filing rules, the difference between the two

groups of firms, if any, would be driven by country-related factors, such as legal enforcement.

Panel C of Table 3 presents the regression results. The coefficient on *CRM* is positive across all

of the five individual measures and for the common factor, significant at the 0.05 level or better.

These results are consistent with hypothesis H3 that weak legal enforcement leads to lower

financial reporting quality of Chinese RM firms. However, one should note that China factor

alone does not cause the lower financial reporting quality of Chinese RM firms; otherwise,

Chinese ADR firms would have lower financial reporting quality than U.S. RM firms.

Untabulated analayses indicate that Chinese ADR firms have similar financial reporting quality

as U.S. RM firms.

4.2   Conditional conservatism

Table 4 reports the results from the conditional conservatism analysis. Again, if U.S. RM

firms or Chinese RM firms are less conservative than others included in the regression, we would

expect a positive coefficient on the three way interaction term. In Column (1) we compare the

conditional conservatism between U.S. RM and U.S. IPO firms and we find that the two groups

of firms are not different from each other (t=0.04). In Column (2), we compare Chinese RM and

Chinese ADR firms and we find that Chinese RM firms are less conservative than Chinese ADR

firms (t=2.10). In the last column, we compare Chinese RM and U.S. RM firms and we find that

Chinese RM firms are less conservative than U.S. RM firms (t=2.03). These results are

consistent with those based on accrual-based financial reporting quality measures.

4.3   The probability of restatements

To test whether Chinese RM (or U.S. RM) firms differ from other types of firms regarding

the probability of restatements, we estimate the following Logit regression:

$$\Pr(\text{Restatement}_{it}) = \alpha + \beta_1 CRM_{it}(or\, USRM_{it}) + \gamma \text{Controls}_{it\text{-}1}$$
$$+ \phi\, Year\; Dummies + \lambda\, \text{Industry Dummies} + \varepsilon_{it} \qquad (2)$$

The dependent variable, *Restatement*, is a dummy variable that equals 1 if the financial statement

of the firm in that year is restated later, and 0 otherwise. We include the same set of control

variables as in Equation (1).

Table 5 reports the results of three models: Model (1) comparing U.S. RM firms with matched U.S. IPO firms, Model (2) comparing Chinese RM firms and Chinese ADR firms, and Model (3) comparing Chinese and U.S. RM firms. As reported in Model (1), we find that U.S. RM firms and U.S. IPO firms do not differ from each other (t=-0.17). As reported in models (2) and (3), the coefficient on the indicator for Chinese RM firms, *CRM*, is significantly positive (t=5.79 and 7.75, respectively), indicating that Chinese RM firms exhibit a higher likelihood of restatements than Chinese ADR firms and U.S. RM firms. The marginal effect is also economically significant. A shift from Chinese ADR firms to Chinese RM firms increases the probability of restatements by 7.48 percentage points and a shift from U.S. RM to Chinese RM firms increases the probability by 17.52 percentage points (untabulated). The inferences are the same when we separate irregularities from errors in an untabulated analysis.

In sum, the results from the analysis of the likelihood of restatements are consistent with those based on accrual-based financial reporting quality measures and conditional conservatism.

5. Why do Chinese RM firms have lower financial reporting quality?

The results reported above indicate that Chinese RM firms have inferior financial reporting quality than other firms, and this is due to the combination of RM and China factor. The RM process itself does not seem to lead to poor financial reporting quality because U.S. RM firms have similar financial reporting quality as U.S. IPO firms. The China factor alone does not explain the results, either. Otherwise, Chinese RM firms should not have lower financial reporting quality than Chinese ADR firms. These results suggest that Chinese RM firms have weaker bonding incentives and the cheap, fast, and less scrutinized RM process provides these

Chinese firms with means to access to the U. S. capital markets, as hypothesized in H4a and H4b. In this section, we first use the methodology used in prior research to investigate whether bonding incentives are lower for Chinese RM firms than for Chinese ADR firms, and then examine whether Chinese RM firms have poorer corporate governance than Chinese ADRs.

5.1   Test of H4a: Is the bonding incentive weaker for Chinese RM firms?

Lel and Miller (2008) argue that if a foreign firm has a weaker bonding incentive, then its CEO turnover is less sensitive to firm performance. It thus follows that if Chinese RM firms have weaker bonding incentives, then Chinese RM firms should have lower CEO turnover-performance sensitivity than Chinese ADR firms. Following Lel and Miller (2008), we use the following regression model to test this prediction:

$$\Pr(CEO\_Turnover_{it}) = \alpha + \beta_1 PER_{i,t\text{-}1} + \beta_2 CRM_i + \beta_3 PER_{i,t-1} \times CRM_i$$
$$+ \gamma Controls_{i,t} + \varphi Year\ Dummies\ + \lambda Industry\ Dummies\ + \varepsilon_{it}$$

$$(3)$$

$CEO\_Turnover_{it}$ is a binary variable that equals 1 if the CEO is replaced in year t. Following Lel and Miller (2008) and other prior studies on CEO turnover, we use two measures to capture firm performance. The first one is *ROA*, measured as earnings before interest and taxes divided by total assets, and the second one is industry-adjusted stock returns. We use the lagged performance measure to avoid overlapping the replaced CEO's performance with the new CEO's. Because CEO-turnover performance sensitivity is negative, we expect a positive coefficient on the interaction term if Chinese RM firms have weaker bonding incentives. We control for firm size, industry, and year fixed effects, as in Lel and Miller (2008), as well as the control variables included in Equation (1) to be consistent with the financial reporting quality analysis, with the exception of *ROE*. *ROE* is not included as a control because of the inclusion of the performance measure (*PER*) in the model.

We hand collect CEO turnover data from the financial statements filed by U.S.-listed

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Chinese firms and the Audit Analytics database. Untabulated analyses indicate that the CEO turnover ratio is 9.13% for Chinese RM firms and 15.87% for Chinese ADR firms, and the difference is significant at the 0.01 level.

Table 6 presents the regression results. As in Lel and Miller (2008), the probability of CEO turnover is negatively correlated with firm performance (t=-3.05 and -22.66, respectively). More importantly, the probability of CEO turnover is less sensitive to firm performance for Chinese RM firms than for Chinese ADR firms. The coefficient on *PER×CRM* is significantly positive at the 0.05 level (t=2.99 and 2.05, respectively).[28] This result is consistent with H4a, indicating that Chinese RM firms have weaker bonding incentives, i.e., lower incentives to improve corporate governance to signal their intention to protect minority shareholder rights.

5.2   Test of H4b: Corporate governance of Chinese RM firms vs. Chinese ADR firms

In this section, we test H4b by examining whether the RM process attracts Chinese firms with weak bonding incentives, as exemplified in the corporate governance features. We first investigate the differences in several common corporate governance features – ownership structure, board characteristics, and CEO compensation structure – between Chinese RM firms and Chinese ADR firms. We then examine to what extent these differences lead to differential financial reporting quality.

We hand collect all of the required information from 10-Ks, 20-Fs, and proxy statements filed by Chinese firms during the sample period, including insider ownership (holdings by the officers and directors), existence of foreigner blockholders (non-Chinese owners with 10% of ownership or higher), board characteristics (board size, board independence, whether the CEO is the chairman), whether the CEO is the founder of the firm, and CEO compensation

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[28] An F-test indicates the net turnover-performance sensitivity for Chinese RM firms (*PER + PER × CRM*) is insignificantly different from zero (p=0.614 and 0.875, respectively).

characteristics (whether firms grant CEOs options).[29] Panel A of Table 7 reports the characteristics of these variables separately for Chinese RM firms and Chinese ADR firms and then p-values based on the t-test and Z-test for the differences in means and medians, respectively. We find that compared to Chinese ADR firms, Chinese RM firms have higher insider ownership, fewer large foreign blockholders, smaller and less independent boards, higher likelihood of having the CEO as the chairman, and are less likely to have founder CEOs or to grant the CEO option-based compensation. Overall, the results are consistent with H4b that the strength of corporate governance is weaker in Chinese RM firms than in Chinese ADR firms.

Next, we examine whether differences in corporate governance features lead to differential financial reporting quality with a two-stage process. In the first stage, we use the above governance characteristics to predict the probability of a Chinese firm being a Chinese RM firm, that is, the *CRM* dummy (equal to 1 for Chinese RM firms and 0 for Chinese ADR firms). The overall explanatory power of the model, as measured by the Pseudo R^2, is 35.5%. In the second stage, we rely on the predicted value of *CRM* (*CRM_P*) and the residual (*CRM_R*) generated from the first stage model to explain the financial reporting quality of U.S.-listed Chinese firms:

$$FRQ_{it} = \alpha + \beta_1 CRM\_P_{it} + \beta_2 CRM\_R_{it} + \beta\ Controls_{it} + \varepsilon_{it}$$

(4)

The dependent variable, *FRQ*, is the common factor generated from the individual accrual-based measures. If the weak corporate governance of Chinese RM firms leads to lower financial reporting quality, then *CRM_P* should be negatively correlated with financial reporting quality, resulting in a positive coefficient on *CRM_P*. The coefficient on the residual value of *CRM* (*CRM_R*) captures the impact of other unidentified differences between Chinese RM firms and non-RM Chinese firms on financial reporting quality.

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[29] Leuz et al. (2003) argue that higher insider ownership weakens, and Siegel (2005) argues that having a large foreign shareholder can improve, the governance of the firm.

Panel B of Table 7 reports the regression results. Because the sample size is smaller due to additional data requirements, we first replicate the analyses reported in Panel B of Table 3 in Column (1) and obtain quantitatively similar results. Column (2) reports the results from Equation (4). The coefficient on *CRM_P* is positive and significant (t=3.09). This result indicates that the corporate governance decisions made by Chinese firms are strongly correlated with financial reporting quality; that is, poor corporate governance leads to lower financial reporting quality of Chinese RM firms. The coefficients on the residual (*CRM_R*) are also positive and significant at the 0.05 level, although the coefficient is smaller than that on *CRM_P*.[30] In untabulated analyses, we also examine how *CRM_P* is related to conditional conservatism and the probability of restatements. The inferences are the same.

In sum, the results in this section are consistent with the notion that compared to Chinese ADR firms, Chinese RM firms have weaker bonding incentives and are unwilling to improve their corporate governance to signal their intention to protect shareholder rights. These factors are strongly correlated with firms' decision to choose the RM approach to access the U.S. capital markets, and partially explain their lower financial reporting quality.

5.3   Cross-sectional analysis within Chinese RM firms

In this section, we explore the cross-sectional differences within Chinese RM firms to further enhance our understanding of the factors and incentives that contribute to or mitigate their inferior financial reporting quality. Specifically, we examine the influence of corporate governance, auditor choice, financing incentives, and the IPO qualification in China on these firms' financial reporting quality.[31]

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[30] An untabulated F-test indicates that the coefficient on *CRM_P* is significantly larger than that on *CRM_R*. The p-value of the F-test is 0.02. Note that our focus is the coefficient on *CRM_P*, not the coefficient on *CRM_R* or the difference between *CRM_P* and *CRM_R*.

[31] Due to the small sample size, we cannot carry out analyses of conditional conservatism and restatements.

Following the discussion in Section 5.2, we expect Chinese RM firms with stronger governance to have better financial reporting quality than those with weaker governance. To test this conjecture, we generate a common factor based on the governance variables used in Panel A of Table 7 and refer to it as *Governance:* the higher the value, the stronger the corporate governance. This common factor has an eigenvalue of 1.91. Based on the aggregate financial reporting quality measure, the result reported in Model (1) of Table 8 suggests that Chinese RM firms with stronger corporate governance exhibit better financial reporting quality.

The quality of audit work in many Chinese RM cases has been questioned. Some fraudulent cases arise from the auditors' failure to understand worksheets written in Chinese and to validate some of the legal documents, such as deposit certifications (Gillis 2011b). Therefore, it is argued that the auditors may lack the resources or expertise and/or rely too much on other people's work (PCAOB 2010). While such concerns apply to both Big4 auditors and smaller audit firms, previous studies show that reputational concerns and resources available to large audit firms enable them to do a better job than small ones (Becker et al. 1998; Francis et al. 1999). This belief is also shared by RM consulting firms, some of which claim that they "would not do an RM unless the company agreed to a Top Ten auditor (Lawrence 2011)," and the SEC, which states that "small U.S. auditing firms … may not have the resources to meet its auditing obligations when all or substantially all of … operations are in another country. As a result, such auditing firms might not identify circumstances where these companies may not be complying with the relevant standards (SEC 2011)." In addition, auditors are subject to litigation risk if Chinese RM firms are discovered to engage in accounting frauds (Templin 2012) and the risk is usually higher for large auditors. As such, we conjecture that big auditing firms provide higher quality audit work and enhance the financial reporting quality. Around 11% of the Chinese RM

firms have Big4 auditors. The result reported in Model (2) of Table 8 indicates that Chinese RM

firms hiring Big 4 auditors exhibit better financial reporting quality than others.[32]

Next, we test whether issuing shares in the U.S. affect the financial reporting quality of

Chinese RM firms. A significant benefit of listing in the U.S. is the access to cheaper capital

(Coffee 1999, 2002; Stulz 1999). Prior research finds that firms manipulate earnings around the

period of equity issuance (e.g., Teoh et al. 1998). It thus follows that the Chinese RM firms that

raise capital after the RM transactions are more likely to engage in earnings management,

leading to lower financial reporting quality, than other Chinese RM firms. We construct an

indicator variable (*EquityIssue*) for the existence of share issuance. Around 13.5% of our sample

Chinese RM firms have equity issuance in the future. As reported in Model (3) of Table 8, the

coefficient on *EquityIssue* is positive and significant at the 0.01 level, indicating that Chinese

RM firms issuing shares have lower financial reporting quality than other Chinese RM firms.

Note that this result contrasts the finding in Ndubizu (2007) that raising equity capital does not

affect foreign firms' financial reporting quality when RM firms are not included in the sample.

Finally, we examine whether the financial reporting quality differs between Chinese RM

firms that qualify to list on Chinese exchanges and those that do not qualify.[33] Compared to those

non-qualified, firms that qualify to list on the Chinese stock exchanges likely choose to come to

the U.S. for different reasons. Those seeking to bond to the stringent U.S. rules may choose to

cross-list their stocks or pursue the IPO method, which is a more costly but credible signal of

their incentives. If qualified firms choose to access the U.S. market via RMs, their intention is

probably to avoid the more stringent rules and just "rent" the reputation of being a U.S. public

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[32] We also construct dummies to indicate Big4 auditors that are China experts or RM experts (having 10 or more Chinese firm clients or RM firm clients) and we find qualitatively similar results.

[33] The current listing criteria in China include: (1) net income being positive in the two consecutive years before IPO, (2) net assets being larger than RMB20 million, and (3) the sum of net income in the two years before listing being greater than a specified level.

firm. In contrast, firms that are not qualified to be listed on Chinese stock exchanges cannot

obtain the approval from the China Securities Regulatory Commission (CSRC) to list their

shares in China and the U.S., and thus have no other choices but to adopt the RM approach to

obtain the access to the U.S. capital markets. Their objective is prone to obtain funding to

support their growth. As such, they have stronger bonding incentives and are less likely to

engage in earnings management, leading to better financial reporting quality. Around 26% of our

sample Chinese RM firms are qualified to be listed on Chinese stock exchanges. Consistent with

this argument, as reported in Model (4) of Table 8, we find that qualified Chinese RM firms have

poorer financial reporting quality than those that do not qualify.[34]

In sum, the results reported in Table 8 indicate that having better governance and hiring

Big 4 auditors lead to better financial reporting quality. Firms that obtain equity financing or are

qualified to be listed in China, however, exhibit inferior financial reporting quality.

6. Market's perception of Chinese RM firms' financial reporting quality

The results so far indicate that Chinese RM firms have lower financial reporting quality

due to the combination of the RM factor and China factor. It is natural to wonder whether the

markets recognize Chinese RM firms' low financial reporting quality and if not, whether the low

financial reporting quality of Chinese RM firms is linked to the firms' future stock returns. We

explore these issues in this section.

Earnings response coefficient (ERC) is commonly used to capture the capital markets'

perception of financial reporting quality (e.g., Wilson 2008; Chen et al. 2013). In this section, we

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[34] In a similar vein, we find that Chinese RM firms located in better-developed provinces/regions (e.g., Beijing, Shanghai, Guangdong, Jiangsu, Zhejiang) have lower financial reporting quality than other Chinese RM firms. One possible reason is that Chinese RM firms located in better-developed provinces/regions have more funding opportunities and thus lower bonding incentives in terms of obtaining funding from the U.S. capital markets, leading to lower financial reporting quality.

examine whether the ERC differs between Chinese RM firms and other firms. Table 9 reports the results. The results indicate that Chinese RM firms have similar ERC as matched U.S. IPO firms, Chinese ADR firms, and U.S. RM firms. The results remain the same if we control for additional control variables and their impact on the ERC. This result indicates that the market does not recognize low financial reporting quality of Chinese RM firms at the time when earnings are announced. This result is not surprising given the later downfall of many Chinese RM firms. Had the market correctly understood the financial reporting quality of Chinese RM firms, the price would have reflected the poor financial reporting quality of Chinese RM firms. (The logic is very similar to that found in the literature on accounting restatements, which observes that investors did not correctly evaluate the financial reporting quality during the restated period and punished the firms after restatement announcements.)

The next question is that if the market fails to recognize the lower financial reporting quality of Chinese RM firms when earnings are announced, then does the market gradually recognize the issue in the future and price the shares accordingly? That is, are future stock returns correlated with current financial reporting quality? We answer this question by regressing future stock returns on current financial reporting quality for Chinese RM firms and report the results in Table 10. Specifically, we separate Chinese RM firms into two groups based on the aggregate financial reporting quality measure (*FRQ*). *FRQ_LOW* is an indicator for the Chinese RM firms that have *FRQ* lower than the sample median. As reported in the table, we find that the coefficient on *FRQ_LOW* is significantly negative when the stock return is estimated over the next year, the next two years, and the next three years (t=-1.71, -2.16, -2.06, respectively). The economic magnitude is also significant: compared to firms with high financial reporting quality, those with low financial reporting quality experience a lower stock returns, 26.5, 55.0, and 61.2

percentage points in one year, two years, and three years, respectively.

Overall, the results in this section indicate that the market fails to recognize the low financial reporting quality of Chinese RM firms, and this failure is related to the observed overall market correction for Chinese RM firms. Within Chinese RM firms, we find that those with lower financial reporting quality experience a significantly lower stock return in the future.

7. Conclusion

In this study, we find that Chinese reverse merger (RM) firms have lower financial reporting quality, have lower extent of conditional conservatism, and are more likely to restate their earnings than matched U.S. IPO firms, U.S. RM firms, or Chinese ADR firms. On the other hand, we do not find any difference in financial reporting quality between U.S. RM firms and matched U.S. IPO firms. The results indicate that the lower financial reporting quality of Chinese RM firms results from the joint effect of the less scrutinized RM process and the weak legal enforcement over Chinese firms. Additional analyses indicate that Chinese firms with weak bonding incentives choose the RM approach. Compared with Chinese ADR firms, Chinese RM firms have lower CEO turnover-performance sensitivity (a measure of the strength of the bonding incentive) and exhibit poorer corporate governance, which partly explain their low financial reporting quality.

This study extends the literature by shedding light on why Chinese RM firms have lower financial reporting quality. We find that the RM process provides Chinese firms with low bonding incentives and poor governance the opportunity to access the U.S. capital market, resulting in poor financial reporting quality in Chinese RM firms. In addition, we find that having strong governance and hiring Big 4 auditors improve Chinese RM firms' financial

reporting quality. These results should be of interest to regulators who are contemplating the

rules related to RMs, and to investors who trade these firms' shares.

References

Adjei, F., K. B. Cyree, and M. M. Walker. 2008. The determinants and survival of reverse mergers versus IPOs. *Journal of Economics and Finance* 32 (2): 176-194.

Ang, J. S., Z. Jiang, and C. Wu. 2012. Good apples, bad apples: sorting among Chinese companies traded in the U.S. Working Paper, Florida State University.

Bailey, W., G. A. Karolyi, and C. Salva. 2006. The economic consequences of increased disclosure: Evidence from international cross-listings. *Journal of Financial Economics* 81 (1): 175-213.

Ball, R., A. Robin, and J. S. Wu. 2003. Incentives versus standards: Properties of accounting income in four East Asian countries. *Journal of Accounting and Economics* 36 (1-3): 235-270.

Ball, R., and L. Shivakumar. 2006. The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research* 44 (2): 207-242.

Basu, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24 (1): 3-37.

Becker, C. L., M. L. Defond, J. Jiambalvo, and K. R. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15 (1): 1-24.

Burgstahler, D. C., L. Hail, and C. Leuz. 2006. The importance of reporting incentives: Earnings management in European private and public Firms. *The Accounting Review* 81 (5): 983-1016.

Chen, A. S., L.Y. Cheng, K.F. Cheng, and S.W. Chih. 2010. Earnings management, market discounts and the performance of private equity placement. *Journal of Banking and Finance* 34, 1922-1932.

Chen, X., Q. Cheng, and A. K. Lo. 2013. Is the decline in the information content of earnings following restatements short-lived? *The Accounting Review,* forthcoming.

Cheng, B., S. Srinivasan, and G. Yu. 2012. Securities litigation risk for foreign companies listed in the U.S. Working paper, Harvard Business School.

Chi, W., D. Dhaliwal, O. Z. Li, and T. Lin. 2013. Voluntary reporting incentives and reporting quality: Evidence from a reporting regime change for private firms in Taiwan. *Contemporary Accounting Research*, forthcoming.

Coffee, J. C. Jr. 1999. The future as history: The prospects for global convergence in corporate governance and its implications. *Northwestern University Law Review* 93 (3): 641-708.

Coffee, J. C. Jr. 2002. Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance. *Columbia Law Review* 102 (7): 1757-1831.

Darrough, M. N., R. Huang, and S. Zhao. 2013. The spillover effect of Chinese reverse merger frauds: Chinese or reverse merger? Working paper, CUNY Baruch College.

Dechow, P. M., and I. D. Dichev. 2002. The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review* 77 (supplement): 35-59.

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70 (2): 193-225.

Dechow, P. M., W. Ge, and C. Schrand. 2010. Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics* 50 (2-3): 344-401.

DeFond, M., and J. Jiambalvo. 1991. Incidence and circumstances of accounting errors. *The Accounting Review* 66 (3): 643-655.

DeFond, M., M. Hung, and R. Trezevant. 2007. Investor protection and the information content of annual earnings announcements: International evidence. *Journal of Accounting & Economics* 43: 37-67.

Doidge, C., G. A. Karolyi, and R. M. Stulz. 2004. Why are foreign firms listed in the U.S. worth more? *Journal of Financial Economics* 71 (2): 205-238.

Doidge, C., G. A. Karolyi, K. V. Lins, D. P. Miller, and R. M. Stulz. 2009. Private benefits of control, ownership, and the cross-listing decision. *The Journal of Finance* 64 (1): 425-466.

Ettredge, M., Y. Huang, and W. Zhang. 2012. Earnings restatements and differential timeliness of accounting conservatism. *Journal of Accounting and Economics* 53 (3): 489-503.

Feldman, D. N. 2009. *China: Land of the panda, the Great Wall, and reverse mergers*. PLI's Course Handbook.

Floros, I. V, and K. Shastri. 2009b. An analysis of alternate paths used by non-U.S. firms to list in U.S. markets: Revisiting the bonding hypothesis. Working Paper, Iowa State University.

Floros, I. V., and K. Shastri. 2009a. A comparison of penny stock initial public offerings and reverse mergers as alternative mechanisms to going public. Working Paper, Iowa State University.

Francis, J., R. LaFond, P. Olsson, and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39 (2): 295-327.

Francis, J.R., E. L. Maydew, and H. C. Sparks. 1999. The role of Big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice and Theory* 18 (2): 17-34.

Gillis, P. 2011a. Understanding Chinese frauds. http://chinaaccountingblog.com/weblog/understanding-chinese-fraud.html.

Gillis, P. 2011b. Auditing cash in China. http://www.chinaaccountingblog.com/weblog/auditing-cash-in-china.html.

Givoly, D., C. Hayn, and B. Lourie. 2012. Importing accounting quality: the case of foreign reverse mergers. Working paper, Pennsylvania State University.

Givoly, D., C. Hayn, and R. Lehavy. 2009. The quality of analysts' cash flow forecasts. *The Accounting Review* 84 (6): 1877-1911.

Gong, G., B. Ke, and Y. Yu. 2013. Home country investor protection, ownership structure and cross-listed firms' compliance with SOX-mandated internal control deficiency disclosures. *Contemporary Accounting Research*, forthcoming.

He, X, T. J. Wong, and D. Young. 2013. US listing of Chinese firms: Bonding vs. adverse selection. Working paper, The Chinese University of Hong Kong.

Hennes, K. M., A. J. Leone, and B. P. Miller. 2008. The importance of distinguishing errors from irregularities in restatement research: The case of restatements and CEO/CFO turnover. *The Accounting Review* 83 (6): 1487-1519.

Hope, O-K., W. Thomas, and D. Vyas. 2013. Financial reporting quality in U.S. private firms. *The Accounting Review*, forthcoming.

Hung, M., T. J. Wong, and T. Zhang. 2012. Political considerations in the decision of Chinese SOEs to list in Hong Kong. *Journal of Accounting and Economics* 53: 435-449.

Hung. M. 2001. Accounting standards and value relevance of earnings: An international analysis. J*ournal of Accounting & Economics* 30: 401-420.

Jindra, J., T. Voetmann, and R. A.Walkling. 2012. Reverse mergers: The Chinese experience. Working paper, Ohio State University.

Lang, M., J. S. Raedy, and M. H. Yetman. 2003. How representative are firms that are cross-listed in the United States? An analysis of accounting quality. *Journal of Accounting Research* 41 (2): 363-386.

Lang, M., J. S. Raedy, and W. Wilson. 2006. Earnings management and cross listing: Are reconciled earnings comparable to U.S. earnings? *Journal of Accounting and Economics* 42 (1-2): 255-283.

Lawrence, D. 2011. Worthless stocks from China. *Bloomberg Business Week* (Jan 13).

Lee, C. M. C., K. K. Li, and R. Zhang. 2013. Shell games: Have U.S. capital markets been harmed by Chinese companies entering via reverse mergers? Working paper, Stanford University.

Lel, U., and D. P. Miller. 2008. International cross-listing, firm performance, and top management turnover: A test of the bonding hypothesis. *Journal of Finance* 63 (4): 1897-1937.

Leuz C., D. Nanda, and P. D. Wysocki. 2003. Earnings management and investor protection: An international comparison, *Journal of Financial Economics* 69 (3): 505-527.

Leuz, C. 2006. Cross listing, bonding and firms' reporting incentives: A discussion of Lang, Raedy, and Wilson (2006). *Journal of Accounting and Economics* 42 (1-2): 285-299.

Licht, A. 2003. Cross-listing and corporate governance: Bonding or avoiding? *Chicago Journal of International Law* 4 (1): 141-163.

Licht, A., C. Poliquin, J. I. Siegel, and X. Li. 2013. What makes the bonding stick? A natural experiment involving the US supreme court and cross-listed firms. Working paper, Interdisciplinary Center Herzliya.

Marosi, A., and N. Massoud. 2008. "You can enter but you cannot leave...": U.S. securities markets and foreign firms. *The Journal of Finance* 63 (5): 2477-2506.

McMahon, D. 2012. SEC charges China firm with falsifying earnings. *Wall Street Journal* (September 5).

McNichols, M. F. 2002. Discussion of the quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review* 77 (supplement): 61-69.

McNichols, M. F., and S. R. Stubben. 2008. Does earnings management affect firms' investment decisions? *The Accounting Review* 83 (6): 1571-1603.

Ndubizu, G. A. 2007. Do cross-border listing firms manage earnings or seize a window of opportunity? *The Accounting Review* 82 (4): 1009-1030.

Pagano, M., A. A. Röell, and J. Zechner. 2002. The geography of equity listing: Why do companies list abroad? *The Journal of Finance* 57 (6): 2651-2694.

Public Company Accounting Oversight Board (PCAOB). 2010. Auditor considerations regarding using the work of other auditors and engaging assistants from outside the firm. Staff Audit Practice Alert No. 6 (July 12, 2010).

Public Company Accounting Oversight Board (PCAOB). 2011. Activity summary and audit implications for reverse mergers involving companies from the China region: January 1, 2007 through March 31, 2010. Research Note # 2011-P1 (March 14, 2011).

Siegel, J. 2005. Can foreign firms bond themselves effectively by renting U.S. securities laws? *Journal of Financial Economics* 75 (2): 319-359.

Siegel, J., and Y. Wang. 2013. Cross-border reverse mergers: Causes and consequences. Working Paper, Harvard Business School.

Srinivasan, S, A. S. Wahid, and G. Yu. 2012. Admitting mistakes: An analysis of restatements by foreign firms listed in the US. Working Paper, Harvard Business School.

Stubben, S. R. 2010. Discretionary revenues as a measure of earnings management. *The Accounting Review* 85 (2): 695-717.

Stulz, R. M. 1999. Globalization, corporate finance, and the cost of capital. *Journal of Applied Corporate Finance* 12 (3): 8-25.

Templin, B. A. 2012. Chinese reverse mergers, accounting regimes, and the rule of law in China. *Thomas Jefferson Law Review* 34 (1): 101-151.

Teoh, S. H., I. Welch, and T. J. Wong. 1998. Earnings management and the underperformance of seasoned equity offerings. *Journal of Financial Economics* 50 (1): 63-99.

Wilson, W. 2008. An empirical analysis of the decline in the information content of earnings following restatements. *The Accounting Review* 83 (2): 519-548.

Appendix A
Measurement of individual accrual-based financial reporting quality variables

This appendix describes the detailed measurement of the five individual accrual-based financial reporting quality measures used in this study.

Our first measure is the absolute value of discretionary accruals. Discretionary accruals are estimated from the modified Jones model, as in Dechow et al. (1995). Specifically, we estimate the following regression model:

$$ACCR_{i,t} = \alpha_1 (\frac{1}{TA_{i,t}}) + \alpha_2 (\Delta REV_{i,t} - \Delta REC_{i,t}) + \alpha_3 PPE_{i,t} + \varepsilon_{i,t}$$
,

where $ACCR$ is total accruals calculated as the difference between income before extraordinary items and operating cash flows, TA is total assets at the beginning of the year, ΔREV is the change in sales, ΔREC is the change in accounts receivable, and PPE is gross property, plant, and equipment. In the above equation, all of the variables are scaled by TA. The above regression model is estimated by industry-year using all firm-year observations (industries being defined based on two-digit SIC codes). The regression residual is discretionary accruals (DA). We use the absolute value of DA ($|DA|$) as our first measure of financial reporting quality.

Our second measure is based on a modified version of the cross-sectional Dechow-Dichev (2002) model. The Dechow-Dichev model focuses on the strength of the relation between current accruals and past, present, and future cash flows. In particular, we use the Dechow-Dichev model as modified by McNichols (2002) and Francis et al. (2005), adjusting for negative cash flows (Ball and Shivakumar 2006; Givoly et al. 2009). Specifically, we estimate the following model for each industry-year that has at least 20 observations:

$$WCA_{i,t} = \alpha_0 + \beta_1 OCF_{i,t-1} + \beta_2 OCF_{i,t} + \beta_3 OCF_{i,t+1} + \beta_4 \Delta REV_{i,t}$$
$$+ \beta_5 PPE_{i,t} + \beta_6 DOCF_{i,t} + \beta_7 OCF_{i,t} \times DOCF_{i,t} + \varepsilon_{i,t}$$
,

where WCA is working capital accruals, measured as the change in non-cash current assets minus the change in current liabilities (other than short-term debt and taxes payable), scaled by lagged total assets; OCF is operating cash flows, measured as the sum of net income, depreciation, and amortization, minus WCA, scaled by lagged total assets; ΔREV and PPE are defined as above; and $DOCF$ is an indicator variable for negative operating cash flows. The residual from the above equation represents the component in the current accruals that are not associated with operating cash flows and that cannot be explained by the change in revenue or the level of PPE. We use the absolute value of this residual ($|DD|$) as a proxy for financial reporting quality.

Our third measure is the absolute value of discretionary revenues based on McNichols and Stubben (2008) and Stubben (2010). Specifically, we estimate the following regression for each industry-year that has at least 20 observations:

$$\Delta AR_{i,t} = \alpha_0 + \beta_1 \Delta REV_{i,t} + \varepsilon_{i,t}$$
,

where ΔAR represents the annual change in accounts receivable scaled by lagged total assets, and ΔREV is as defined above. Discretionary revenue (DR) is the residual from this regression and its absolute value, $|DR|$, is used as a proxy for financial reporting quality.

Our fourth measure is based on the ratio of the absolute value of accruals to cash flows (Burgstahler et al. 2006; Hope et al. 2013). Firms may overstate earnings to achieve certain targets or to report good performance in specific instances, such as equity issuance (Teoh et al. 1998). Similarly, in years with poor performance, firms may boost their earnings using reserves or engage in aggressive accounting practices. Earnings can be temporarily inflated due to accrual choices, but cash flows remain unaffected. In such cases, the higher the ratio, the lower the financial reporting quality. To avoid the effect of extreme values, we use the log transformation of this ratio as our fourth proxy, *ln|ACCR/OCF|*.

The fifth measure, *SMOOTH*, is the smoothing measure used in some international studies to capture the extent of earnings management (e.g., Leuz et al. 2003). It is measured as the standard deviation of net income over the standard deviation of operating cash flows. To be consistent with other measures, we multiply the ratio by -1 so that the higher the value, the lower the reporting quality.

Appendix B
Variable definitions

Variable	Definition
Dependent variables	
|DA|	Absolute value of discretionary accruals, as described in Appendix A;
|DD|	Absolute value of discretionary working capital accrual, as described in Appendix A;
|DR|	Absolute value of discretionary revenue, as described in Appendix A;
ln|ACCR/OCF|	The natural logarithm of the ratio of the absolute value of total accruals to operating cash flows, as described in Appendix A;
SMOOTH	The ratio of standard deviation of net income over the standard deviation of operating cash flows, multiplied by -1, as described in Appendix A;
FRQ	The financial reporting quality index, measured as the common factor from the principal component analysis of the five individual measures: *|DA|, |DD|, |DR|, ln|ACCR/OCF|*, and *SMOOTH*;
Independent variables	
CRM	Chinese RM firm dummy, equal to 1 if the firm is a Chinese RM firm, and 0 otherwise;
USRM	U.S. RM firm dummy, equal to 1 if the firm is a U.S. RM firm, and 0 otherwise;
M/B	The market-to-book ratio, calculated as market value of equity divided by book value of equity;
Growth	Sales growth, measured as the percentage change in sales;
LEV	The leverage ratio, measured as total debt divided by total assets;
ROE	Return-on-equity, measured as income before extra-ordinary items divided by shareholders' equity;
Size	Size of the firm, measured as the natural logarithm of total assets;
Capital_need	The percentage change in common stock, preferred stock, and long-term debt in the following year;
Loss	The cumulative percentage of sample years that the firm reported a loss during the sample period;
Op_Cycle	Operating cycle of the firm, measured as Inventory/Cost of Sales + Receivables/Sales;
Inventory	Inventory divided by total assets.

TABLE 1

Descriptive statistics of Chinese reverse merger (RM) firms, U.S. RM firms, and Chinese ADR firms

Panel A: Sample distribution by the year of listing

The table reports the distribution of sample firms based on the year when their shares were first listed in the U.S stock markets.

First Listing Year	Chinese RM firms	U.S. RM firms	Chinese ADR firms
2000 and earlier	3	0	21
2001	1	3	5
2002	0	12	1
2003	7	17	0
2004	16	49	8
2005	24	48	7
2006	39	38	11
2007	31	36	20
2008	31	26	14
2009	15	15	13
2010	18	17	26
2011	8	12	16
Total	193	273	142

Panel B: Distribution of firms by exchanges at the time of data collection

Firm Type	NYSE	NASDAQ	AMEX	OTC	Total
Chinese RM firms	6	82	28	77	193
U.S. RM firms	4	39	22	208	273
Chinese ADR firms	67	74	1	0	142
Total	77	195	51	285	

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TABLE 1 (cont'd)

Panel C: Sample distribution by Fama-French industry classification

Industry	Chinese RM firms	Chinese non-RM firms	U.S. RM firms
Consumer Non-Durables	23	8	12
Consumer Durables	10	3	8
Manufacturing	38	9	23
Oil, Gas, and Coal Extraction and Products	5	5	27
Chemicals and Allied Products	13	4	9
Business Equipment	31	58	58
Telephone and Television Transmission	3	6	7
Wholesale, Retail, and Some Services	22	8	15
Healthcare, Medical Equipment, and Drugs	23	11	54
Others	25	30	60
Total	193	142	273

TABLE 1 (cont'd)

Panel D: Descriptive statistics on financial reporting quality and control variables

	Chinese RM firms		U.S. IPO firms matched with Chinese RM firms		U.S. RM firms		U.S. IPO firms matched with U.S. RM firms		Chinese ADR firms	
	mean	median	mean	median	mean	median	mean	median	mean	median
Dependent variables										
|DA|	0.17	0.12	0.12	0.07	0.22	0.13	0.17	0.09	0.10	0.06
|DD|	0.18	0.13	0.05	0.02	0.13	0.07	0.08	0.04	0.09	0.05
|DR|	0.12	0.07	0.05	0.02	0.10	0.04	0.07	0.03	0.06	0.03
$ln\|ACCR/OCF\|$	-0.44	-0.29	-0.49	-0.46	-0.54	-0.57	-0.53	-0.48	-0.45	-0.44
SMOOTH	-2.06	-0.87	-2.45	-1.00	-2.14	-0.97	-2.66	-1.13	-2.37	-0.87
FRQ	0.68	0.33	-0.10	-0.29	0.42	0.11	0.24	-0.02	-0.38	-0.58
Restatement	0.18	0.00	0.06	0.00	0.07	0.00	0.06	0.00	0.04	0.00
ΔNI_t	0.03	0.03	0.00	0.00	-0.03	-0.02	0.00	0.00	0.03	0.02
ΔNI_{t-1}	0.02	0.03	-0.02	0.00	-0.08	-0.28	-0.03	0.00	0.02	0.02
$D\,\Delta NI_t$	0.33	0.00	0.40	0.00	0.56	1.00	0.47	0.00	0.32	0.00
Control variables										
MB	2.99	1.40	3.56	1.50	5.90	3.79	4.52	2.33	2.56	1.58
Growth (%)	38.31	26.49	18.37	0.00	51.21	24.78	26.84	0.00	38.63	27.13
LEV (%)	14.03	8.11	16.99	9.72	13.94	3.67	12.98	5.15	13.55	5.59
ROE (%)	6.17	15.86	-5.49	0.50	-19.51	-36.21	-13.56	-18.28	8.34	10.27
Size	4.29	4.44	4.26	4.27	2.99	2.94	2.91	2.83	6.51	6.04
Capital_need (%)	19.21	0.00	4.66	0.00	9.46	0.00	6.83	0.00	9.59	0.02
Loss (%)	13.91	0.00	43.44	40.00	35.70	33.33	49.27	45.45	12.92	0.00
Op_cycle	0.66	0.46	0.56	0.32	0.81	0.25	0.71	0.28	0.43	0.29
Inventory	0.10	0.06	0.14	0.11	0.08	0.002	0.08	0.01	0.06	0.02

TABLE 2
Financial reporting quality of Chinese RM firms vs. matched U.S. IPO firms

This table reports the results from regressing the financial reporting quality measures on the Chinese RM firms and control variables:

$$FRQ_{i,t} = \alpha + \beta CRM_{i,t} + \gamma Controls_{i,t} + \delta Year\ Dummies + \theta Industry\ Dummies + \varepsilon_{i,t}$$

CRM is 1 for Chinese RM firms and 0 for matched U.S. IPO firms. The table reports the coefficient estimates, t-values based on standard errors adjusted for firm- and year-level clustering (in brackets), the number of observations, and the adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-test). Please see Appendix B for variable definitions.

	|DA|	|DD|	|DR|	ln|ACCR/OCF|	SMOOTH	FRQ
CRM	0.053***	0.086***	0.057***	0.749***	0.013**	0.575***
	(4.09)	(6.99)	(3.91)	(4.52)	(2.00)	(4.94)
M/B	0.000	0.000	-0.002**	-0.023*	0.003**	0.007
	(0.24)	(0.21)	(-2.13)	(-1.90)	(2.41)	(0.82)
Growth	0.063***	0.038***	0.038***	0.245***	0.005	0.373***
	(7.96)	(4.36)	(3.55)	(3.13)	(1.03)	(3.72)
LEV	-0.025	0.015	0.057**	-0.028	-0.026	0.406*
	(-1.41)	(0.52)	(2.20)	(-0.07)	(-1.43)	(1.69)
ROE	-0.068***	0.023***	0.026***	-0.416**	0.128***	0.029
	(-4.26)	(4.87)	(4.20)	(-2.16)	(6.26)	(0.42)
Size	-0.018***	-0.006*	-0.011*	-0.967***	-0.016*	-0.198***
	(-3.80)	(-1.74)	(-1.88)	(-18.16)	(-1.96)	(-5.13)
Capital_need	-0.000*	0.000	-0.000	0.000	0.000	-0.001*
	(-1.65)	(0.13)	(-1.37)	(0.24)	(0.56)	(-1.71)
Loss	-0.005***	-0.001	-0.004**	0.039	-0.007***	-0.004
	(-3.92)	(-0.90)	(-2.54)	(1.46)	(-2.83)	(-0.47)
Op_cycle	-0.000	0.000	0.000***	-0.000**	0.000**	0.000
	(-0.65)	(1.55)	(3.35)	(-1.97)	(1.97)	(0.32)
Inventory	-0.001	-0.011	-0.060	0.858*	0.058	-0.198
	(-0.02)	(-0.51)	(-1.20)	(1.88)	(1.21)	(-0.55)
Intercept	0.168***	0.033	0.018	-1.306	-0.981***	0.597*
	(4.49)	(0.74)	(0.60)	(-1.34)	(-25.34)	(1.80)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
N	636	616	652	658	450	412
Adjusted R^2	32.5%	29.5%	26.3%	39.2%	45.6%	34.4%

TABLE 3

TABLE 3
Comparison of financial reporting quality among different types of firms

This table reports the results from regressing the financial reporting quality measures on the firm type dummy variable and control variables:

$$FRQ_{i,t} = \alpha + \beta CRM_{i,t}(USRM_{i,t}) + \gamma Controls_{i,t} + \delta Year\ Dummies + \theta Industry\ Dummies + \varepsilon_{i,t}$$

The table reports the coefficient estimates, t-values based on standard errors adjusted for firm- and year-level clustering (in brackets), the number of observations, and the adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-test). Please see Appendix B for variable definitions.

Panel A: Financial reporting quality of U.S. RM firms vs. U.S. IPO firms matched on industry, exchange, year, and size

	|DA|	|DD|	|DR|	ln|ACCR/OCF|	SMOOTH	FRQ
USRM	0.012	0.010	0.016*	0.072	-0.003	0.132
	(0.88)	(0.96)	(1.81)	(0.98)	(-0.36)	(1.20)
M/B	0.000	0.001	0.001*	-0.029***	0.001	-0.003
	(0.70)	(1.19)	(1.82)	(-3.54)	(1.26)	(-0.31)
Growth	0.044***	0.013***	0.011	0.190***	-0.002	0.071***
	(5.34)	(3.11)	(1.54)	(6.42)	(-0.53)	(24.37)
LEV	-0.029	-0.047	-0.031	1.163	-0.073	-0.341
	(-0.35)	(-1.62)	(-1.58)	(1.60)	(-1.64)	(-0.71)
ROE	-0.064***	-0.012	0.002	-0.179**	0.052***	-0.383**
	(-3.20)	(-0.87)	(0.35)	(-2.04)	(5.40)	(-2.46)
Size	-0.004	-0.009*	-0.003	-0.926***	-0.023***	-0.132***
	(-0.63)	(-1.91)	(-1.33)	(-16.99)	(-4.44)	(-3.04)
Capital_need	0.000	0.000	0.000	0.002	-0.000	0.000
	(0.44)	(0.74)	(0.33)	(0.64)	(-0.32)	(0.18)
Loss	-0.007***	-0.005***	-0.001	0.001	-0.003	-0.032*
	(-4.86)	(-4.33)	(-0.66)	(0.04)	(-1.63)	(-1.68)
Op_cycle	0.000	-0.000	-0.000	-0.000***	-0.000	-0.000
	(0.35)	(-0.74)	(-0.67)	(-3.13)	(-0.24)	(-0.33)
Inventory	0.006	0.147**	0.120	-1.082	0.047	0.542
	(0.12)	(2.41)	(1.51)	(-1.29)	(1.43)	(0.81)
Intercept	0.116***	0.166*	0.074	0.267	-0.956***	0.646*
	(2.91)	(1.93)	(1.55)	(0.58)	(-60.10)	(1.78)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
N	412	372	430	430	372	320
Adjusted R^2	22.9%	15.1%	17.5%	44.2%	29.0%	18.9%

TABLE 3 (cont'd)

Panel B: Financial reporting quality of Chinese RM firms vs. Chinese ADR firms

	|DA|	|DD|	|DR|	ln|ACCR/OCF|	SMOOTH	FRQ
CRM	0.028***	0.023**	0.029***	0.243*	0.041	0.242***
	(3.11)	(2.25)	(2.69)	(1.87)	(0.89)	(3.09)
M/B	0.000	0.001*	-0.001	-0.022**	0.004	-0.005
	(0.18)	(1.68)	(-1.37)	(-2.34)	(0.46)	(-0.66)
Growth	0.078***	0.052***	0.048***	0.312***	0.047***	0.418***
	(10.99)	(9.89)	(5.52)	(4.49)	(3.35)	(5.86)
LEV	-0.006	0.032	0.040	0.832***	-0.573	0.468**
	(-0.24)	(1.32)	(1.54)	(4.34)	(-1.59)	(2.20)
ROE	-0.047***	-0.002	0.024	-0.585***	0.287***	0.005
	(-4.54)	(-0.41)	(1.28)	(-4.74)	(3.02)	(0.05)
Size	-0.009***	-0.010***	-0.011***	-1.037***	-0.010	-0.188***
	(-4.14)	(-3.08)	(-3.97)	(-33.83)	(-0.43)	(-8.47)
Capital_need	0.000	-0.000	-0.000*	-0.001*	0.000**	-0.000
	(0.66)	(-1.43)	(-1.81)	(-1.71)	(2.47)	(-0.57)
Loss	-0.009***	-0.004	-0.007**	0.030	0.008	-0.023
	(-3.15)	(-1.49)	(-2.58)	(1.07)	(0.39)	(-1.00)
Op_cycle	0.000***	0.000***	0.000*	0.000*	0.000	0.000**
	(7.79)	(7.30)	(1.68)	(1.92)	(1.48)	(2.43)
Inventory	0.168**	0.105***	-0.048	1.034**	-0.160	0.783**
	(2.42)	(3.12)	(-0.89)	(1.98)	(-0.74)	(2.32)
Intercept	0.030	0.091***	0.094***	-1.026***	-1.199***	0.259
	(1.29)	(3.69)	(3.08)	(-3.33)	(-8.05)	(1.41)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1008	983	1016	1018	902	866
Adjusted R^2	43.5%	38.3%	25.7%	76.1%	7.6%	47.2%

TABLE 3 (cont'd)

Panel C: Financial reporting quality of Chinese RM firms vs. U.S. RM firms

	|DA|	|DD|	|DR|	ln|ACCR/OCF|	SMOOTH	FRQ
CRM	0.027**	0.047***	0.035***	0.283**	0.038***	0.329***
	(2.34)	(3.08)	(3.31)	(2.02)	(3.24)	(2.79)
M/B	-0.001**	0.001	0.001	-0.032***	0.001*	0.003
	(-2.35)	(0.90)	(1.56)	(-3.95)	(1.84)	(0.41)
Growth	0.055***	0.027***	0.020***	0.264***	-0.000	0.214***
	(12.74)	(4.80)	(2.70)	(6.56)	(-0.24)	(4.53)
LEV	-0.084***	-0.015	0.004	0.024	-0.031*	-0.059
	(-3.80)	(-0.38)	(0.15)	(0.12)	(-1.66)	(-0.21)
ROE	-0.057***	0.005	0.034***	-0.228**	0.050***	-0.050
	(-6.22)	(0.61)	(3.08)	(-1.97)	(4.13)	(-0.55)
Size	-0.012***	-0.015***	-0.013***	-1.018***	-0.016***	-0.198***
	(-3.40)	(-3.30)	(-4.39)	(-15.75)	(-2.69)	(-3.78)
Capital_need	-0.000	-0.000	-0.000	-0.002**	0.000	-0.001
	(-0.68)	(-0.46)	(-1.39)	(-1.97)	(0.12)	(-1.34)
Loss	-0.011***	-0.011***	-0.004***	0.004	-0.008***	-0.077***
	(-3.12)	(-3.83)	(-2.84)	(0.18)	(-4.92)	(-4.53)
Op_cycle	-0.000	0.000	0.000	-0.000**	0.000	-0.000
	(-1.61)	(0.50)	(1.49)	(-1.97)	(1.07)	(-0.16)
Inventory	0.083***	0.116*	0.044	1.097***	0.036**	-0.017
	(3.58)	(1.81)	(0.94)	(3.40)	(2.26)	(-0.04)
Intercept	0.104***	0.099**	0.008	-0.042	-1.064***	0.385
	(3.28)	(2.21)	(0.33)	(-0.06)	(-46.18)	(0.91)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
N	695	667	713	715	596	548
Adjusted R^2	37.1%	16.0%	18.2%	53.3%	32.6%	19.3%

TABLE 4
Comparison of conditional conservatism among different types of firms

This table reports the results from the model outlined in Ball and Shivakumar (2006):

$$\Delta NI_{i,t} = \alpha_0 + \alpha_1 \Delta NI_{i,t-1} + \alpha_2 D\Delta NI_{i,t-1} + \alpha_3 \Delta NI_{i,t-1} \times D\Delta NI_{i,t-1} + \alpha_4 CRM_i(USRM_i) +$$
$$\alpha_5 \Delta NI_{i,t-1} \times CRM_i(USRM_i) + \alpha_6 D\Delta NI_{i,t-1} \times CRM_i(USRM_i) + \alpha_7 \Delta NI_{i,t-1} \times D\Delta NI_{i,t-1} \times$$
$$CRM_i(USRM_i) + \varepsilon_{i,t} ,$$

where, ΔNI is the change in net income scaled by lagged total assets and $D\Delta NI$ is a dummy variable for negative ΔNI. The table reports the coefficient estimates, t-values based on standard errors adjusted for firm- and year-level clustering (in brackets), the number of observations, and the adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-test). Please see Appendix B for variable definitions.

	U.S. RM vs. matched U.S. IPO firms (1)	Chinese RM vs. Chinese ADR firms (2)	Chinese RM vs. U.S. RM firms (3)
ΔNI_{t-1}	-0.253*	0.078**	0.025
	(-1.82)	(2.01)	(0.97)
$D\Delta NI_{t-1}$	-0.014	0.046***	0.036
	(-0.27)	(6.04)	(1.28)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.358***	-0.220***	-0.307***
	(-2.66)	(-3.84)	(-8.15)
$USRM$	-0.040		
	(-1.56)		
$\Delta NI_{t-1} \times USRM$	0.009		
	(0.35)		
$D\Delta NI_{t-1} \times USRM$	0.254*		
	(1.73)		
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times USRM$	0.008		
	(0.04)		
CRM		-0.007	-0.029
		(-0.93)	(-1.46)
$\Delta NI_{t-1} \times CRM$		0.020**	0.046**
		(2.32)	(2.02)
$D\Delta NI_{t-1} \times CRM$		-0.018	0.125***
		(-0.45)	(4.18)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times CRM$		0.105**	0.108**
		(2.10)	(2.03)
Intercept	0.124	-0.005	1.053***
	(1.17)	(-0.20)	(15.55)
Control variables	Yes	Yes	Yes
Year effects	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes
N	422	1,021	718
Adjusted R^2	34.8%	71.9%	71.5%

TABLE 5
Comparison of restatement probability among different types of firms

This table reports the Logit regression of the probability of restatement based on firm types:

$$\text{Pr}(\text{Restatement}_{it}) = \alpha + \beta_1 CRM_{it}(or\,USRM_{it}) + \gamma \text{Controls}_{it-1}$$

$$+ \phi\,Year\ Dummies + \lambda\,\text{Industry Dummies} + \varepsilon_{it}$$

The dependent variable, *Restatement*, is a dummy variable that equals 1 if the financial statement of the firm in that year is restated later, and 0 otherwise. The table reports the coefficient estimates, the corresponding Z statistics based on Wald chi-square adjusted for firm- and year-level clustering (in brackets), the number of observations, and the pseudo R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Please see Appendix B for variable definitions.

	U.S. RM vs. U.S. IPO firms (Model 1)	Chinese RM vs. Chinese ADR firms (Model 2)	Chinese RM vs. U.S. RM firms (Model 3)
USRM	-0.068		
	(-0.17)		
CRM		4.214***	2.570***
		(5.79)	(7.75)
M/B	0.008	-0.065	0.032**
	(0.60)	(-0.90)	(2.00)
Growth	0.250	0.107	0.274*
	(1.20)	(0.72)	(1.89)
LEV	-0.072	-0.261	-0.971
	(-0.03)	(-0.19)	(-0.87)
ROE	-0.076	0.588	0.312
	(-0.16)	(1.42)	(1.43)
Size	-0.045	-0.060	0.104
	(-0.33)	(-0.38)	(0.84)
Capital_need	-2.008*	0.391***	0.338*
	(-1.77)	(2.81)	(1.94)
Loss	-0.449	1.256	0.349
	(-0.54)	(1.36)	(0.44)
Op_cycle	-0.411	0.136	-0.504
	(-0.70)	(1.20)	(-1.27)
Inventory	2.681*	-1.049	1.384
	(1.68)	(-0.83)	(1.37)
Intercept	-1.858	-4.870***	-4.463***
	(-1.30)	(-3.93)	(-4.56)
Year effects	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes
N	412	1021	718
Pseudo R^2	12.4%	33.5%	19.6%

TABLE 6
Sensitivity of CEO turnover to firm performance among U.S.-listed Chinese firms

This table reports the following Logit regression on the probability of CEO turnover, based on Lel and Miller (2008):

$$\Pr(CEO\_Turnover_{it}) = \alpha + \beta_1 PER_{i,t-1} + \beta_2 CRM_i + \beta_3 PER_{i,t-1} \times CRM_i$$
$$+ \gamma Controls_{i,t} + \varphi Year\ Dummies + \lambda Industry\ Dummies + \varepsilon_{it}$$

CEO_Turnover is an indicator for CEO turnover, equal to 1 if there is a change in CEO in that year and 0 otherwise; *PER* is measured in two alternative ways: (1) the natural logarithm of one plus the ratio of earnings before interest and tax over total assets and (2) the natural logarithm of one plus industry-adjusted stock return. Please see Appendix B for the definitions of other variables. The table reports the coefficient estimates, the corresponding Z statistics adjusted for firm- and year-level clustering (in brackets), the number of observations, and the pseudo R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Performance measure: ROA	(2) Performance measure: Industry adjusted stock returns
PER	-4.804***	-0.389***
	(-3.05)	(-22.66)
CRM	-0.919***	-2.692***
	(-4.26)	(-5.32)
PER×CRM	4.106***	0.368**
	(2.99)	(2.05)
M/B	-0.009	-0.038
	(-0.23)	(-1.31)
Growth	-1.532***	-1.886***
	(-3.44)	(-3.11)
LEV	-1.131	-0.663
	(-1.37)	(-0.50)
Size	0.175***	0.115
	(2.73)	(1.46)
Capital_need	0.084	0.099
	(0.31)	(0.35)
Loss	0.055	0.237**
	(0.65)	(2.30)
Op_cycle	-0.287***	-1.165*
	(-4.29)	(-1.70)
Inventory	-2.418	-5.069
	(-0.90)	(-1.62)
Intercept	4.206*	10.665***
	(1.91)	(7.77)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
N	940	619
Pseudo R^2	28.91%	32.93%

TABLE 7
Corporate governance and financial reporting quality of U.S.-listed Chinese firms

Panel A: Descriptive statistics on corporate governance characteristics of Chinese RM firms and Chinese ADR firms

This table reports descriptive statistics on corporate governance characteristics of Chinese RM firms and Chinese ADR firms, and the p-value for the difference between the two samples. There are 604 observations from Chinese RM firms and 745 from Chinese ADR firms. (The sample for Panel B is smaller due to additional data requirement.) *Inside_own* is the percentage of the officer and director ownership. *Foreign_Own* is a dummy variable that equals 1 if the firm has at least one large foreign owner (ownership greater than 10%). *BD_Size* is the size of the board. *BD_Independence* is the percentage of outside directors on the board. *CEO_Chair* is a dummy variable that equals 1 when the CEO is also the chairman of the firm. *Founder_CEO* is a dummy variable that equals 1 when the CEO is the founder. *CEO_Option* is a dummy variable that equals 1 if the firm has exercisable options outstanding for the CEO in that year.

| | Chinese RM firms | | | Chinese ADR firms | | | P-value for T-test and Wilcoxon Z test for differences in | |
	Mean	Median	Std	Mean	Median	Std	Mean	Median
Inside_own	0.37	0.37	0.24	0.21	0.17	0.22	0.001	0.001
Foreign_Own	0.05	0.00	0.10	0.10	0.00	0.15	0.001	0.001
BD_Size	5.51	5.00	1.75	7.76	7.00	2.51	0.001	0.001
BD_Independence	0.57	0.60	0.22	0.59	0.60	0.16	0.007	0.001
CEO_Chair	0.83	1.00	0.51	0.60	1.00	0.49	0.001	0.001
Founder_CEO	0.46	0.00	0.61	0.51	1.00	0.50	0.071	0.015
CEO_Option	0.47	0.00	0.50	0.79	1.00	0.41	0.001	0.001

TABLE 7 (Cont'd)

Panel B: Regression of financial reporting quality among U.S.-listed Chinese firms
Column (1) replicates the analysis reported in Panel B of Table 3 based on the sample of U.S. listed Chinese firms with required data on corporate governance, financial reporting quality, and control variables. Column (2) reports results from regressing the financial reporting quality measures on the fitted value (*CRM_P*) estimated from the Chinese RM and Chinese ADR selection model and the corresponding residual value (*CRM_R*). For the selection model, the dependent variable is *CRM* and the independent variables include insider ownership, an indicator for large foreign investor with ownership 10% or higher, board size, board independence, whether CEO is the chairman of the board, and whether CEO is the founder, and an indicator variable for firms with exercisable options outstanding for their CEOs.

$$FRQ_{it} = \alpha + \beta_1 CRM\_P_{it} + \beta_2 CRM\_R_{it} + \beta_3 Contorls_{it} + \varepsilon_{it}$$

The table reports the coefficient estimates, t-values adjusted for firm- and year-level clustering (in brackets), the number of observations, and the adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-tests). Please see Appendix B for the definitions of other variables.

	Column (1)	Column (2)
CRM	0.316***	
	(3.01)	
CRM_P		0.412***
		(3.09)
CRM_R		0.114***
		(3.57)
M/B	0.001	-0.000
	(0.05)	(-0.02)
Growth	0.444***	0.378***
	(6.97)	(8.68)
LEV	-0.058	-0.136
	(-0.24)	(-0.67)
ROE	-0.455***	-0.453***
	(-3.23)	(-3.83)
Size	-0.162***	-0.127***
	(-6.46)	(-5.37)
Capital_Need	0.021	0.005
	(0.38)	(0.11)
Loss	-0.004	-0.003
	(-0.17)	(-0.17)
Op_cycle	0.119**	0.173***
	(2.33)	(2.63)
Inventory	1.146**	1.116**
	(2.46)	(2.43)
Intercept	-0.591*	-0.608**
	(-1.92)	(-2.47)
Year effects	Yes	Yes
Industry effects	Yes	Yes
N	824	824
Adjusted R^2	48.7%	51.4%

TABLE 8
The variation of financial reporting quality within Chinese RM firms

This table reports the regression results within Chinese RM firms based on the following regression model:

$$FRQ_{it} = \beta_0 + \beta_1 CRM\_Character_{it} + \beta_2 Controls_{it} + \varepsilon_{it}$$

CRM_Character is one of the following variables: *Governance, Big4, EquityIssue*, and *IPO_Qualify*. *Governance* is the common factor based on the governance variables used in Panel A of Table 7; *Big4* is an indicator for Big4 auditor, equal to 1 if the auditor is one of the Big 4 auditing firms and 0 otherwise; *EquityIssue* is an indicator for equity issuance, equal to 1 if the firm undertakes a seasoned equity offering, PIPE, or other private placement; and *Qualify* is an indicator for IPO qualification and it equals 1 if the firm is qualified to be listed on a Chinese stock exchange at the time of entering the U.S. equity market, and 0 otherwise. The table reports the coefficient estimates, t-values based on standard error adjusted for firm- and year-level clustering (in brackets), the number of observations, and the adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-test). Please see Appendix B for the definitions of other variables.

	Model 1	Model 2	Model 3	Model 4
Governance	-0.316**			
	(-2.12)			
BIG4		-0.671**		
		(-2.15)		
EquityIssue			3.389***	
			(5.42)	
IPO_Qualify				0.194*
				(1.71)
M/B	-0.001	0.021	-0.002	-0.011
	(-0.04)	(0.84)	(-0.09)	(-0.94)
Growth	0.784***	0.342***	-0.002	0.688***
	(5.88)	(3.99)	(-0.09)	(8.08)
LEV	1.041	1.014*	0.649***	0.718**
	(1.41)	(1.87)	(5.39)	(2.31)
ROE	-0.243	0.600***	0.571	-0.066
	(-0.84)	(2.77)	(0.81)	(-0.44)
Size	-0.545***	-0.390***	0.150	-0.368***
	(-5.81)	(-5.06)	(0.51)	(-8.03)
Capital_Need	0.276	0.079	-0.489***	0.083
	(1.51)	(0.69)	(-4.73)	(0.88)
Loss	-0.183***	-0.080	0.051	-0.117***
	(-3.27)	(-0.36)	(0.29)	(-3.75)
Op_cycle	0.747***	0.132	-0.140***	0.701***
	(4.25)	(1.19)	(-2.73)	(7.14)
Inventory	0.697	1.591**	0.494***	-0.990*
	(0.59)	(2.01)	(2.78)	(-1.75)
Intercept	1.253*	1.860**	2.123***	0.575
	(1.72)	(2.53)	(2.89)	(1.29)
Year effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
N	290	290	290	290
Adjusted R^2	49.4%	37.8%	39.5%	47.1%

TABLE 9
Analysis of earnings response coefficient

This table reports regression results from the following model:

$$UR_{it} = \alpha_1 + \beta_1 UE_{it} + \beta_2 CRM_i + \beta_3 UE_{it} \times CRM_i + \sum_{k=4}^{6} \beta_k CONTROLS_{it} + \sum_{k=7}^{9} \beta_k [UE_{it} \times CONTROLS_{it}] + \varepsilon_{it}$$

UR_{it} is the cumulative abnormal returns in the three-day window around the earnings announcement date for firm i in year t, where the abnormal return is defined as the firm's return less the CRSP value-weighted market return. UE_{it} is firm i's unexpected annual earnings in year t; it is measured as the change in earnings scaled by stock price at the end of the fiscal year t. Please see Appendix B for the definition of control variables. The table reports the coefficient estimates, the corresponding t-statistics based on standard errors adjusted for firm- and year-level clustering, the number of observations, and adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-test).

	Chinese RM vs. U.S. IPO firms (Model 1)	Chinese RM vs. U.S. RM firms (Model 2)	Chinese RM vs. Chinese ADR firms (Model 3)
UE	0.092**	0.070*	0.060**
	(2.24)	(1.83)	(2.27)
CRM	-0.009	-0.009	0.003
	(-1.16)	(-0.69)	(0.65)
UE×CRM	0.011	0.002	0.001
	(0.99)	(0.07)	(0.12)
M/B	0.002*	-0.000	0.002***
	(1.76)	(-0.29)	(2.88)
Size	0.012***	0.011**	0.003**
	(3.14)	(2.16)	(2.43)
Loss	0.002	0.002	0.001
	(0.24)	(0.20)	(0.31)
UE×M/B	0.014**	0.000	0.006
	(2.20)	(0.09)	(0.59)
UE×Size	-0.016**	-0.017	-0.006
	(-2.34)	(-1.55)	(-1.49)
UE×Loss	0.016	0.073*	0.020**
	(1.05)	(1.89)	(2.31)
Intercept	-0.180***	-0.037	0.023
	(-8.86)	(-0.80)	(0.98)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	364	465	745
Adjusted R^2	0.254	0.073	0.188

TABLE 10
Chinese RM firms' financial reporting quality and future stock return

This table reports regression results from the following model:

$$Return_{i,t+j} = \alpha_1 + \beta_1 FRQ_{LOW_{i,t}} + \gamma Controls_{i,t} + \delta Year\ Dummies + \theta Industry\ dummies + \varepsilon_{it}$$

$Return_{i+j}$ is cumulated annual stock return calculated based on stock prices at four months after the fiscal year end, where j is t+1, t+2, or t+3. Stock prices are adjusted for delisting. Returns for forced delisting are set as -100%. *FRQ_LOW* is a dummy variable that equals one if the common factor based on accrual measures, *FRQ*, is lower than the sample median value and 0 otherwise. Please see Appendix B for the definition of control variables. The table reports the coefficient estimates, the corresponding t-statistics based on standard errors adjusted for firm- and year-level clustering, the number of observations, and adjusted R^2. All of the variables are winsorized at the 1% and 99% levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed t-test).

	$Return_{t+1}$	$Return_{t+2}$	$Return_{t+3}$
FRQ_LOW	-0.265*	-0.550**	-0.612**
	(-1.71)	(-2.16)	(-2.06)
ROE	-0.607**	-0.201	-0.223
	(-2.10)	(-0.33)	(-0.25)
M/B	-0.027	-0.005	-0.206**
	(-1.17)	(-0.08)	(-2.25)
Growth	0.127	0.192	0.376*
	(1.11)	(1.08)	(1.74)
LEV	0.649*	0.976**	2.592***
	(1.84)	(2.59)	(3.12)
Size	0.482***	0.482***	0.589**
	(4.47)	(3.08)	(2.26)
Intercept	-2.173***	-2.215***	-0.918
	(-13.78)	(-4.37)	(-0.50)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	138	114	114
Adjusted R^2	0.452	0.458	0.612