

**GAAP Difference or Accounting Fraud?  
Evidence from Chinese Reverse Mergers Delisted from U.S. Markets**

Yimiao Chen  
Gang Hu  
Ling Lin  
Min Xiao\*

**ABSTRACT**

In 2012, one in four federal securities class-action lawsuits filed in the U.S. involved Chinese Reverse Merger companies (CRMs). However, these lawsuits sometimes have encountered difficulties in court due to insufficient direct evidence of accounting fraud. We propose a new method for fraud detection: use Chinese companies dual-listed in the U.S. and China to establish a benchmark for the normal GAAP difference between the two countries. Using this methodology, we find that only a small fraction of the discrepancies between delisted CRMs' financial statements filed in the U.S. and those filed in China can be attributed to GAAP difference. This fact suggests that the remaining discrepancies, which are large and unexplained, are indeed due to accounting fraud. Therefore, it is reasonable to conclude that delisted Chinese Reverse Merger companies enticed U.S. investors with favorable and fraudulent accounting and financial data.

**Keywords:** Accounting Fraud; GAAP Difference; Chinese Reverse Mergers; Dual-Listed.

---

\* The authors are, respectively, Audit Associate at KPMG, Associate Professor of Finance at The Hong Kong Polytechnic University, Assistant Professor of Accounting at the University of Massachusetts Dartmouth, Associate Professor of Finance at Xiamen University.

## **GAAP Difference or Accounting Fraud? Evidence from Chinese Reverse Mergers Delisted from U.S. Markets**

Yimiao Chen  
Gang Hu  
Ling Lin  
Min Xiao\*

### **I. INTRODUCTION**

In recent years, regulators and investors have become increasingly concerned over the accounting irregularities of U.S.-listed Chinese companies, in particular, Chinese Reverse Merger companies (CRMs), which went public in the U.S. through reverse mergers. In 2010 and 2011, nearly fifty Chinese companies were delisted from the three major stock exchanges in the U.S. and the Securities and Exchange Commission (SEC) has filed fraud cases against more than forty issuers and executives, among which about thirty CRMs have been the subject of investigation. In 2012, one in four federal securities class-action lawsuits filed in the U.S. involved CRMs, according to a study by the Securities Class Action Clearing house at Stanford Law School and Cornerstone Research. However, both the SEC and plaintiffs' lawyers are facing challenges in investigations and prosecutions. Despite the fact that CRMs' accounting and financial data filed with the SEC in the U.S. painted unreasonably rosy pictures, it is sometimes difficult to reach a court decision due to the lack of sufficient direct evidence of accounting fraud.

Evidence that may help identify accounting fraud includes large discrepancies between CRMs' reported financial numbers in filings to the SEC and those in filings to Chinese government agencies. However, CRMs argue that the large accounting filing discrepancies could be due to

---

\* The authors are, respectively, Audit Associate at KPMG, Associate Professor of Finance at The Hong Kong Polytechnic University, Assistant Professor of Accounting at the University of Massachusetts Dartmouth, Associate Professor of Finance at Xiamen University.

the difference in accounting standards adopted in the U.S. versus China, or Generally Accepted Accounting Principles (GAAP) difference. To address this issue, we analyze the extent to which China GAAP differs from US GAAP, and International Financial Reporting Standards (IFRS). We thus propose a new method for fraud detection.

We use Chinese companies dual-listed in both the U.S. and China to establish a benchmark for normal differences between China GAAP, US GAAP, and IFRS. Using this methodology, we find that only a small fraction of the discrepancies between delisted CRMs' accounting filings in the U.S. and those in China can be attributed to GAAP difference, suggesting that the remaining large unexplained discrepancies are indeed due to accounting fraud. Therefore, it is reasonable to conclude that delisted CRMs enticed U.S. investors with fraudulent and favorable accounting and financial data.

It is important to note that all CRMs are only publicly listed and traded in the U.S., and they remain private companies in China. As a result, CRMs' accounting filings with Chinese government agencies are not easily accessible to the general public. We obtain accounting filings by CRMs filed with government agencies in China from The Rosen Law Firm in New York City, who filed a majority of securities class-action lawsuits in the U.S. related to CRMs.

Our research contributes to the extant literature in several aspects, and has important implications for researchers, investors, auditors, legal professionals, and regulators in both US and China. First, we investigate China GAAP and its difference from US GAAP and IFRS, and analyze the comparability of accounting information under different accounting standards. Second, we propose a new method to disentangle the accounting standard effect versus accounting fraud

effect of discrepancies in accounting numbers, and provide evidence suggesting accounting fraud of the delisted CRMs. Third, our findings of financial misrepresentations by delisted CRMs suggest that the “bonding effect” of US cross-listing documented by prior literature may not work properly without strict underwriting and disclosure requirements, and effective cross-border securities regulation. Therefore, our findings have implications for regulators, as the US SEC has been negotiating with its Chinese counterpart, the China Securities Regulatory Commission (CSRC), in search of joint inspections and regulations.

The remainder of the paper is organized as follows. Section II reviews related literature. Section III discusses the institutional background of CRMs and the accounting fraud issue. Section IV describes the development of China GAAP, and compares China GAAP with US GAAP and IFRS. Section V presents empirical results. Section VI concludes.

## **II. RELATED LITERATURE**

This paper relates to several important issues in accounting and finance areas. First, much attention is given in the academic and professional accounting literature to accounting comparability. Comparability of accounting information is a function not only of accounting standards, but also of interpretation, auditing, and the regulatory, litigation, and enforcement environment (Barth *et al.*, 2012). In terms of accounting standards, prior studies examine the difference between IFRS, US GAAP and some other domestic accounting standards (Haverty, 2006; Gray *et al.*, 2009). In terms of the enforcement of accounting standards, several studies suggest that financial reporting practice under a given set of standards is sensitive to the reporting incentives, enforcement of standards, and attestation (Ball *et al.*, 2000; Ball *et al.*,

2003; Leuz *et al.*, 2003). China's accounting standards, both de jure and de facto, are examined in this study not only because of the growing worldwide economic significance of China, but also its vastly different social, legal and political system. Based on the institutional background of China, we review the evolution of Chinese accounting and reporting practice and analyze the comparability of accounting information under China GAAP, IFRS and US GAAP over time. Chinese companies dual-listed in both domestic and American stock markets typically report financial statements based on China GAAP in China and on IFRS in the US. Until 2006, they were required by the SEC to reconcile limited accounts from IFRS into US GAAP. These multiple reporting environments create an opportunity for us to compare the different financial numbers of the same companies under different accounting standards. Some commonly used indices of comparability are calculated in this study to measure the magnitude of the GAAP differences between China GAAP, IFRS and US GAAP, which enable our results to be easily compared with the findings of prior research.

Second, estimating the extent of financial misstatement has long been a focus in academic research and the presence of financial misstatement is an important concern of the accounting profession. The most widely used models, such as Jones model (Jones, 1991), modified Jones model (Dechow *et al.*, 1995) and other modified Jones models with more added financial characteristics (Larcker and Richardson, 2004; Kothari *et al.*, 2005), use discretionary or abnormal accruals as a proxy for earnings management. Accrual estimation errors models, which were developed by Dechow and Dichev (2002) and modified by McNichols (2002), use the standard deviation of the residuals from a regression model of working capital changes as a measure of accrual quality. Beneish (1997) estimates a profit model of earnings manipulation using a variety of financial statement data. Dechow *et al.* (2011) develops a prediction model to

assess the probability of fraud using financial statement variables, nonfinancial variables and market-related variables. While most of the models have predictive ability for financial misstatement and are useful to detect fraudulent activities (Dechow *et al.*, 1995; Beneish, 1997; Jones, 2008), the results of these models cannot prove accounting fraud in court. We offer a new avenue for fraud detection, using a benchmark to distinguish abnormal difference from financial number divergence due to GAAP difference. Compared to prior models, our approach offers a more straightforward tool for demonstrating accounting fraud.

Third, listing foreign shares on U.S. exchanges is regarded as an effective way for foreign firms to bond themselves to protect minority shareholders in spite of the home country's weak legal institutions (Coffee, 1999, 2002). Although this bonding hypothesis is supported by substantial evidence (Doidge *et al.*, 2004; Lel and Miller, 2008), several studies suggest that the U.S. legal and regulatory institutions generally fail to respond efficiently to illegal activities conducted by US-listed foreign firms (Siegel, 2005). Our evidence with regard to CRMs accounting fraud suggests that the bonding effect of cross listing could be ineffective due to institutional obstacles. The systematic difference of financial statement quality between delisted CRMs and dual-listed Chinese companies also suggest that the SEC should take action to improve the regulation on reverse mergers, which is utilized as an alternative to a traditional IPO. Both strict regulation and effective cross-border securities regulation collaboration are necessary to facilitate the bonding effect of cross listing in the U.S.

Fourth, our paper is related to several concurrent studies examining a variety of accounting issues involving CRMs. Jindra *et al.* (2012) find that CRMs are more likely to be subject to class-action litigation in the U.S and that the settlement amounts are smaller for CRM firms than

for Chinese IPO firms. Ang *et al.* (2013) find that CRMs with poor governance and without prestigious auditors exhibit the greatest probability to commit fraud. A logistic model is employed in the aforementioned studies to predict the likelihood of CRMs committing accounting irregularities (fraud). Our study differs from theirs in that we provide direct evidence of accounting irregularities among CRMs – the large unexplained discrepancies between delisted CRMs' filings in the U.S. and those in China, indicating that CRMs enticed U.S. investors with fraudulent and favorable accounting and financial data.

### **III. CHINESE REVERSE MERGERS AND ACCOUNTING FRAUD**

In a reverse merger, shareholders of a private company purchase control of a public shell company and merge it with the private company. The private company shareholders then receive a substantial majority of the shares of the public company and control of its board of directors. The private company's shareholders pay for the shell company by contributing their shares in the private company to the shell company that they now control. The share exchange and change of control complete the reverse merge, transforming the former privately held company into a publicly held company. Thus, reverse merger is an alternative method to an IPO for going public because the private company does not need to go through an expensive and time-consuming review with regulators. A reverse merger avoids the formal IPO process, including the use of underwriters and the registration with the SEC, and all the attendant regulations and costs. The merger is not the subject of a Form S-4 registration statement filed at the SEC under the Securities Act of 1933 and nothing has to be declared effective by the staff of the Division of Corporation Finance before the merger is consummated. Rather, the completed merger is reported on a Form 8-K under the Exchange Act (Huber and Hull, 2011).

A number of Chinese companies have used reverse mergers to access U.S. capital markets, known as Chinese Reverse Mergers. The term CRMs describes a Chinese private company being acquired in a merger with a shell company which is publicly traded in the U.S. The reverse merger is typically over the counter on the Pink Sheets initially and many of CRMs succeeded in getting their stocks listed on an established exchange within a few years. CRMs have occurred since the early 2000's and the number of CRMs reached its peak during the period from 2007 to 2010 (Huber and Hull, 2011). The Public Company Accounting Oversight Board (PCAOB) reports that between January 2007 and March 2010, 159 Chinese companies gained access to U.S. capital markets via a reverse merger. This number was almost triple the number of IPOs conducted in the U.S. by Chinese companies during that time. The reason why so many Chinese companies chose a reverse merger in the U.S. as their method of going public is that it is much faster and significantly cheaper than a traditional IPO.

Reverse merger is not a new technique of going public, and it is not limited to Chinese companies. It has been a controversial topic for a long time due to diminished regulatory oversight. For foreign companies, the lax regulation has posed even more challenges. In terms of Chinese companies, different culture, different legal tradition, and little knowledge of the U.S. capital market have resulted in poor implementation and enforcement of accounting standards (Templin, 2012). More strict regulation and special skills and capabilities in conducting due diligence investigation are required, not only for CRMs, but also for all companies from countries with weak investor protection. In 2010 and 2011, about 30 CRMs have been the subject of class-action lawsuits for accounting fraud. To probe the fraud, both public information in the U.S., such as 10-K, and local documents in China, such as audit work paper, are needed. While the SEC, PCAOB and U.S. exchanges have taken action, it is difficult for them to gather



sufficient evidence to go through the investigation. One of the biggest obstacles is that U. S. regulators are hindered in policing accountants since the auditing occurs in China, where they have no jurisdiction. According to Chinese rule, domestic auditors are prohibited from sending audit materials on Chinese companies to anyone outside China, even though the companies are listed overseas. Despite the fact that the SEC and the CSRC have an ongoing dialog on this issue, it will take time for them to coordinate cross-border securities regulation by arranging memorandums of understanding between the two parties.

#### **IV. CHINA GAAP IN COMPARISON TO IFRS AND US GAAP**

As the Chinese economic system has been undergoing transformation, Chinese accounting system has been transformed to meet the increasing needs for financial information. By the early 1990s, accounting standards were mainly determined by the needs of state planning for most enterprises, except joint ventures involving foreign partners. In 1992, China published the basic financial reporting standards entitled “Accounting Standards for Business Enterprises”. From then on, Chinese government has been committed to developing a set of accounting standards that would meet international accounting standard. Since 1998, under the direction of a new body, the China Accounting Standards Committee (CASC), financial reporting standards were gradually developed with many references to IFRS. In 2005, this committee decided to eliminate most of the remaining differences and adopted the corresponding standards in 2006. Rather than importing IFRS completely, China has chosen to develop its accounting standards based largely on IFRS but take into account the characteristics of China’s transforming market economy (KPMG, 2011). In 2006, the Ministry of Finance (MOF) announced that it has adopted a new basic standard and 38 new specific standards that are substantially in line with IFRS, with a few

exceptions acknowledged. The basic standard is akin to a conceptual framework, and the specific standards address nearly all issues covered in IFRS. The MOF has also adopted 48 new Chinese Auditing Standards (CAS) that are similar to International Standards on Auditing (ISA) issued by the International Auditing and Assurance Standards Board (IAASB). The new accounting and auditing standards became effective for enterprises listed in China starting in 2007. Other enterprises are encouraged to adopt the new standards. The required use of the new standards expanded to all state-owned enterprises controlled by the Chinese central government starting in 2008, and to all large and medium-sized companies in 2009.

Compared to old China GAAP, new China GAAP tends to be more principle based, extends the use of fair value conservatively, and takes more emerging business events into consideration. The major changes include the followings: (1) Investment in a joint venture must be accounted for using the equity method instead of the proportionate method; (2) The last-in-first-out method for inventory is not allowed anymore; (3) Investment property is identified as a specific category of assets and fair value measurement is allowed; (4) Goodwill is measured at cost less accumulated impairment losses and is not amortized; (5) Capitalization of borrowing costs can be applied to more assets and borrowing costs have been extended to include capital leases; (6) Development costs meeting certain criteria are capitalized instead of expensed; (7) Financial assets and financial liabilities are classified into different categories based on the purpose instead of the nature of assets and liabilities; (8) Reversal of impairment of long-lived assets is not permitted anymore; (9) Revenue is recognized at the fair value of consideration instead of the amount stipulated in the contract or agreed by both parties; (10) Accounting method for government grant is based on whether the grants relate to income or assets instead of the nature of the grants.

During the development of new China GAAP, the CASC requested the International Accounting Standards Board (IASB) to assess the extent to which new China GAAP converged with IFRS. This culminated in a joint statement in November 2005, in which both parties affirmed that New China GAAP had achieved convergence with IFRS. However, the convergence of accounting standards is neither a direct adoption nor a word-for-word translation of IFRS. New China GAAP is consistent with IFRS in accounting principles and substance, and incorporates most of the rules described in the IFRS but reflects the unique aspect of the Chinese environment. As a result, there are some difference between new China GAAP and IFRS: (1) certain options are permitted under IFRS but not under new China GAAP, such as revaluation models for long-lived assets; (2) new China GAAP contains specific requirements on certain issues commonly encountered in China where IFRS is silent, such as business combination involving enterprises under common control; (3) Certain specific requirements in IFRS, on matters not commonly encountered in China, are covered by general principles in new China GAAP rather than detailed requirements, such as defined benefit plans and share-based payment plans; and (4) Amendments to IFRS and new China GAAP may not be synchronous, such as standard revision for business combination which came to effective in July 2009 according to IFRS and in January 2010 according to new China GAAP (KPMG, 2011).

In this study, we need to isolate abnormal accounting discrepancies from GAAP discrepancies attributable to the difference between China GAAP and US GAAP, so both difference between China GAAP and IFRS and difference between IFRS and US GAAP should be taken into consideration. We do not elaborate the IFRS-US GAAP difference since it has been extensively examined. By comparing China GAAP, IFRS and US GAAP over time, we learn that the convergence of accounting standard is gradual but irresistible.

## V. GAAP DIFFERENCE VERSUS ACCOUNTING FRAUD

### A. Research Question

In this study we try to determine whether accounting discrepancies among CRMs were abnormal (and thus, possibly fraudulent), in the sense that they cannot be explained by differences among accounting standards. This is an important legal issue. Some delisted CRMs were sued by investors because they reported unbelievably strong performance relative to their competitors in the same industry. Plaintiffs' attorneys used the difference between financial data reported to the SEC and financial data reported to China's State Administration for Industry and Commerce (SAIC) as evidence indicating accounting fraud. The SAIC is in charge of market supervision and regulation and related law enforcement through administrative means. Despite the significant difference between financial statement data reported to the SEC and that reported to the SAIC, a dismissal was usually granted by the court. One of the defendant's strongest defenses is that the huge financial discrepancies are due to the difference in accounting standards between the U.S. and China. To address this issue, we use the financial statements of Chinese companies which are dual-listed in both U.S. and Chinese domestic stock markets to estimate the *normal gap* between China GAAP and US GAAP. After screening out the accounting standard gap, we determine whether there are still significant discrepancies remaining unexplained. We define the unexplained discrepancies as *abnormal difference*.

### B. Data

Our delisted CRMs sample involves Chinese companies that listed in the US stock market through reverse mergers and eventually delisted from US stock markets due to various reasons. Since the documents that CRMs filed with the SAIC are not publicly available, we obtain SAIC

accounting filings of eight CRMs from The Rosen Law Firm, who collected such data in China for related accounting fraud lawsuits. We then use publicly available 10-Ks to obtain financial data that CRMs filed with the US SEC. Thus, we have a set of financial data under China GAAP and a set of financial data under US GAAP for the same eight delisted CRMs.

We also construct a benchmark and control sample, which consists of Chinese companies that are dual-listed on both Chinese and U.S. exchanges. Dual-listed companies are required to report financial statements under China GAAP in China and they typically provide financial statements under IFRS in the U.S. According to the SEC's requirement, foreign firms cross-listed on US exchanges should reconcile their net income and net assets from IFRS to US GAAP until 2006. Among the dual-listed Chinese companies, Aluminum Corporation of China, China Life Insurance, China Unicom, and CNOOC are dropped due to the reasons including adopting non-IFRS standards, belonging to financial section or different reporting entity in domestic and U.S. market. For each of the eight dual-listed companies remaining in the sample, the financial data under IFRS and US GAAP is obtained from Form 20-Fs. Financial data under China GAAP is collected from RESSET Financial Research Database and cross checked by China Stock Market and Accounting Research (CSMAR) database. For both delisted CRMs and dual-listed Chinese companies, financial statements under different accounting standards for each of the years 2004-2009 are collected where possible.

We divide the total six years into two sub-periods, 2004-2006 and 2007-2009, because new China GAAP has been adopted in China since 2007 and the SEC has begun permitting non-US firms that apply IFRS to file financial statements without reconciliation to US GAAP since 2007. All the measures of Chinese financial data are converted from Chinese yuan to U.S. dollar using

foreign exchange rate at the end of the date of balance sheet. Exhibit 1 summarizes the delisted CRMs sample and the dual-listed sample. Exhibit 2 reports mean, median, standard deviation, maximum and minimum of some key financial statement items that delisted CRMs filed with both the SEC in the U.S. and the SAIC in China. It is evident that large difference exists between all the accounting numbers reported in the two countries.

**INSERT EXHIBITS 1 AND 2 ABOUT HERE**

**C. Methodology**

To determine if the huge discrepancies presented in Exhibit 2 are due to the difference between US GAAP and China GAAP, we use the dual-listed sample to calculate normal US-China GAAP difference and then determine *abnormal difference* by subtracting the GAAP difference from total difference of CRMs' numbers. Follow prior literature, we calculate *Gray's index* and *DIFF* as two proxies for accounting difference:

$$Gray's\ Index_{GAAP2\ vs\ GAAP1} = 1 - \frac{(Accounting\ Number_{GAAP1} - Account\ Number_{GAAP2})}{|Accounting\ Number_{GAAP1}|} \quad (1)$$

$$DIFF_{GAAP2\ vs\ GAAP1} = \frac{(Accounting\ Number_{GAAP2} - Account\ Number_{GAAP1})}{|Accounting\ Number_{China\ GAAP}|} \quad (2)$$

*Gray's Index* in Equation (1) was introduced by Gray (1980) and later utilized in studies by Adams *et al.* (1999), Street *et al.* (2000) and Gray *et al.* (2009). The degree of Gray's Index deviates from 1 indicates the extent to which the accounting number under GAAP 2 differs from that under GAAP 1. If Accounting NumberGAAP2 is the same as Accounting NumberGAAP1, then the value of Gray's Index will be 1. The closer does Gray's Index approach 1, the higher is

the comparability of accounting numbers under the two standards. An index of 0.95 means that reported accounting item under GAAP 2 is 5% less than that under GAAP 1. Conversely, an index of 1.05 means that reported accounting item under GAAP 2 is 5% greater than that under GAAP 1.

*DIFF* in Equation (2) is constructed as the difference of accounting numbers reported under different accounting standards, deflating by the absolute value of some accounting number in order to correct for the effect of firm size. The higher the value of *DIFF*, the larger is the difference between accounting numbers under the two standards. In this study, we modify the equation introduced by Haverty (2006) in the following way. We use the actual value of the difference as the numerator and use the absolute value of the corresponding accounting number under China GAAP as the denominator.

For dual-listed companies, the reconciliation of net income and net assets from IFRS to US GAAP has been eliminated since 2007. We are not able to compute the difference between US GAAP and China GAAP directly without numbers under US GAAP. Therefore, during the period 2007-2009, we determine the US-China GAAP difference using the actual Chinese-IFRS GAAP difference and the estimated US-IFRS difference which is the median of actual US -IFRS GAAP difference in years 2004-2006. The computation of US-China GAAP difference in 2007-2009 is illustrated by Equation (3).

$$DIFF_{US\ vs\ China} = DIFF_{US\ vs\ IFRS} + DIFF_{IFRS\ vs\ China} \quad (3)$$

#### **D. Results**

Exhibit 3 presents Gray's Index of net income and net assets for both delisted CRMs and dual-listed companies during each period. Consistent with prior findings, Gray's Index for dual-listed companies is around 1, which indicates that it is an appropriate representative of US-China GAAP difference. Even though the GAAP difference is small, the Gray's Index calculated from delisted CRMs, which we call *total difference*, is far away from 1. *Abnormal difference*, determined by the difference between total difference and GAAP difference, is too large to be ignored. For net income and net assets, *abnormal difference* measured by Gray's index is 13 and 7 times as large as GAAP difference, respectively.

**INSERT EXHIBIT 3 ABOUT HERE**

Exhibit 4 presents *DIFF* of net income and net assets for both delisted CRMs and dual-listed companies during each period. During the period of 2004-2009, US-China GAAP difference estimated from the dual-listed sample is 0.021 for net income and -0.061 for net assets. For net income, 28.7% of US-China GAAP difference comes from US-IFRS GAAP difference and 71.3% comes from IFRS-China GAAP difference. For net assets, 65.9% of US-China GAAP difference comes from US-IFRS GAAP difference and 34.1% comes from IFRS-China GAAP difference. Relative to US-China GAAP difference, the abnormal difference of delisted CRMs is much larger. For net income and net assets, *abnormal difference* measured by *DIFF* is 620 and 111 times as large as GAAP difference, respectively.

**INSERT EXHIBIT 4 ABOUT HERE**

Exhibit 5 presents *DIFF* of some key accounting numbers. For cash, net assets, and total assets in balance sheet and net income and sales in income statement, the abnormal difference of



delisted CRMs is extremely large compared to normal US-China GAAP difference estimated by the dual-listed sample. We are surprised to find that the largest abnormal difference exists in cash, which indicates that the accounting manipulation may be very straightforward.

### **INSERT EXHIBIT 5 ABOUT HERE**

Looking at Exhibits 3, 4, and 5 together, it is obvious that the *abnormal difference* of delisted CRMs is too large to be ignored, that is, delisted CRMs reported much higher assets and incomes in the U.S. than in China, appealing to U.S. investors with fraudulent and favorable accounting and financial data.

## **VI. SUMMARY AND CONCLUSION**

To address the accounting fraud issue of delisted CRMs, this study analyzes the comparability of accounting information under China GAAP, US GAAP, and IFRS. Using Chinese companies dual-listed in the U.S. and China to establish a norm for GAAP difference, we disentangle GAAP difference and abnormal difference of the financial reporting discrepancies existing between financial data CRMs reported in the U.S. and those reported in China. Our results suggest that the abnormal difference which can't be explained by GAAP difference is very significant. Therefore, our findings provide direct evidence that delisted CRMs reported improperly better financial performance to the U.S. regulators and investors than to their domestic authority. The limitation of this study is the lack of evidence of whether accounting misstatements exist in the U.S. or in China. Given the fact that none of the delisted CRMs were prosecuted by the SAIC, a powerful local supervising authority of Chinese companies, we infer

that the large unexplained discrepancies are due to accounting fraud – CRMs enticing U.S. investors with fraudulent and favorable financial data.

## REFERENCES

- Adams, C. A., Weetman, P., Jones, E. A., & Gary, S. J. (1999). Reducing the burden of US GAAP reconciliations by foreign companies listed in the United States: the key question of materiality. *European Accounting Review*, 8, 1-22.
- Ang, J. S., Jiang, Z., & Wu, C. (2013). Good apples, bad apples: Sorting among Chinese companies traded in the US. Working paper, available at SSRN:<http://ssrn.com/abstract=2024826>.
- Ball, R., Kothari, S., & Robin, A. (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, 29, 1-52.
- Ball, R., Robin, A., & Wu, J. (2003). Incentives versus standards: Properties of accounting income in four east asian countries. *Journal of Accounting and Economics*, 36, 235-270.
- Barth, M. E., Landsman, W. R., Lang, M., & Williams, C. (2012). Are IFRS-based and US GAAP-based accounting amounts comparable? *Journal of Accounting and Economics*, 54, 68-93.
- Beneish, M. D. (1997). Detecting GAAP violation: Implications for assessing earnings management among firms with extreme financial performance. *Journal of Accounting and Public Policy*, 16, 271-309.
- Coffee, J. C. (1999). The future as history: The prospects for global convergence in corporate governance and its implications. *Northwestern University Law Review*, 93, 641-708.
- Coffee, J. C. (2002). Racing toward the top? The impact of cross-listings and stock market competition on international corporate governance. *Columbia Law Review*, 102, 1757-1831.
- Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77, 35-59.
- Dechow, P. M., & Sloan, R. G. (1995). Detecting earnings management. *The Accounting Review*, 70, 193-225.
- Dechow, P. M., Ge, W., & Larson, C. R. (2011). Predicting material accounting misstatements. *Contemporary Accounting Research*, 28, 1-16.
- Doidge, C. G., Karolyi, A., & Stulz, R. M. (2004). Why are foreign firms listed in the U.S. worth more? *Journal of Financial Economics*, 71, 205-238.
- Gray, S. J. (1980). The impact of international accounting differences from a security-analysis perspective: Some European evidence. *Journal of Accounting Research*, 18, 64-76.
- Gray, S. J., Linthicum, C. L., & Street, D. L. (2009). Have European and US GAAP measures of income and equity converged under IFRS? Evidence from European companies listed in the US. *Accounting and Business Research*, 39, 431-447.
- Haverty, J. L. (2006). Are IFRS and U.S. GAAP converging? Some evidence from People's Republic of China companies listed on the New York Stock Exchange. *Journal of International Accounting, Auditing and Taxation*, 15, 48-71.
- Huber, J. J., & Hull, J. A. (2011). Scaling the Great Wall of accounting issues in Chinese Reverse Mergers. FTI Consulting, Inc.
- Jindra, J., Voetmann, T., & Walking, R. A. (2012). Reverse Mergers: The Chinese experience. Working Paper, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2105814](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2105814).
- Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29, 193-228.

- Jones, K. L., Krishnan, G. V., & Melendrez, K. D. (2008). Do models of discretionary accruals detect actual cases of fraudulent and restated earnings? An empirical analysis. *Contemporary Accounting Research*, 25, 499-531.
- Knowledge@Wharton. (2013). Reverse mergers: A looming U.S.-China showdown over securities regulation? Available at:  
<http://knowledge.wharton.upenn.edu/arabic/article.cfm?articleid=2929>.
- Kothari, S., Leone, A. J., & Wasley, C. E. (2005). Performance matedhed discretionary aacrual measures. *Journal of Accounting and Economics*, 39, 163-197.
- KPMG. (2011). An overview of new PRC GAAP: Difference between old and new PRC GAAP and its convergence with IFRS. [www.kpmg.com/cn](http://www.kpmg.com/cn).
- Larcker, D. F., & Richardson, S. A. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research*, 42, 625-656.
- Lel, U., & Miller, D. P. (2008). International cross-listing, firm performance, and top management turnover: A test of the bonding hypothesis. *Journal of Finance*, 63, 1897-1937.
- Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: An international comparison. *Journal of Financial Economics*, 69, 505-527.
- McNichols, M. F. (2002). Discussion of "The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77, 61-59.
- Public Company Accounting Oversight Board. (2011). PCAOB issues first research note on Chinese Reverse Mergers. Available at:  
[http://pcaobus.org/News/Releases/Pages/03152011\\_ResearchNote.aspx](http://pcaobus.org/News/Releases/Pages/03152011_ResearchNote.aspx).
- Siegel, J. (2005). Can foreign firms bond themselves effectively by renting U.S. securities laws? *Journal of Financial Economics*, 75, 319-359.
- Street, D. L., Nichols, N. B., & Gray, S. J. (2000). Assessing the acceptability of international accounting standards in the U.S.: An empirical study of the materiality of US GAAP reconciliations by Non-US companies complying with IASC standards. *International Journal of Accounting*, 35, 27-63.
- Templin, B. A. (2012). Chinese Reverse Mergers, accounting regimes, and the rule of law in China. Working paper, available at:  
[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2024135](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2024135).

**Exhibit 1: Sample Companies**

<b>Panel A: De-listed CRMs</b>			
Company	Symbol	Market	Industry
SkyPeople Fruit Juice	SPU	NASDAQ	Bottled and Canned Soft Drinks
Gulf Resources Inc.	GURE	NASDAQ	Industrial Inorganic Chemicals
Deer Consumer Products, Inc.	DEER	NASDAQ	Electric Housewares and Fans
China Intelligent Lighting and Electronics Inc.	CILE	OTCPK	Electric Lighting and Wiring Equipment
China Expert Technology Inc.	CXTI	OTCPK	Radio and Television Communications Equipment
China Agritech Inc.	CAGC	OTCPK	Agricultural Chemicals
China Education Alliance Inc.	CEAI	OTCPK	Educational Services
China Electric Motor Inc.	CELM	OTCPK	Motors and Generators

<b>Panel B: Dual-listed Chinese Companies</b>					
Company	In the U.S.		In China		Industry
	Symbol	Market	Symbol	Market	
Sinopec Shanghai Petrochemical Co. Ltd.	SHI	NYSE	600688	SSE	Bottled and Canned Soft Drinks
Huaneng Power International, Inc.	HNP	NYSE	600011	SSE	Industrial Inorganic Chemicals
Guangshen Railway Co. Ltd.	GSH	NYSE	601333	SSE	Electric Housewares and Fans
China Eastern Airlines Corp. Ltd.	CEA	NYSE	600115	SSE	Electric Lighting and Wiring Equipment
China Southern Airlines Co. Ltd.	ZNH	NYSE	600029	SSE	Radio and Television Communications Equipment
Yanzhou Coal Mining Co. Ltd.	YZC	NYSE	600188	SSE	Agricultural Chemicals
PetroChina Co. Ltd.	PTR	NYSE	601857	SSE	Educational Services
China Petroleum & Chemical Corp.	SNP	NYSE	600028	SSE	Motors and Generators

**Exhibit 2: Delisted CRMs – Accounting Numbers in China versus U.S.**

<b>Panel A: Delisted CRMs' Accounting Numbers reported in China</b>								
	<i>NI</i>	<i>NA</i>	<i>TA</i>	<i>TL</i>	<i>Sales</i>	<i>Cash</i>	<i>AR</i>	<i>Inventory</i>
Mean	0.03	6.10	13.74	7.94	7.07	1.50	0.40	1.57
Median	-0.07	3.95	7.04	4.71	2.93	0.56	0.29	0.51
Standard Deviation	1.30	5.87	13.22	7.72	11.53	3.20	0.32	2.58
Max	3.99	16.53	34.49	19.88	42.02	11.92	0.83	7.51
Min	-2.15	0.71	2.17	0.01	0.02	0.01	0.00	0.01
Observation	19	11	12	12	17	13	10	8

<b>Panel B: Delisted CRMs' Accounting Numbers Reported in the U.S.</b>								
	<i>NI</i>	<i>NA</i>	<i>TA</i>	<i>TL</i>	<i>Sales</i>	<i>Cash</i>	<i>AR</i>	<i>Inventory</i>
Mean	5.80	33.29	57.64	25.58	51.92	20.53	7.00	4.31
Median	7.84	33.71	42.03	19.66	45.24	14.40	8.56	1.25
Standard Deviation	14.92	60.41	46.53	26.30	25.51	21.55	4.91	6.16
Max	30.59	134.38	146.42	97.50	110.28	79.33	11.67	18.06
Min	-32.95	-76.80	3.66	1.67	17.32	2.66	0.47	0.41
Observation	19	11	12	12	17	13	10	8

*NI* and *sales* are net income and sales reported. *NA*, *TA*, *TL*, *Cash*, *AR*, *Inventory* are net assets, total assets, total liabilities, accounts receivable, and inventory, respectively.

**Exhibit 3: GAAP Difference and Abnormal Difference of Delisted CRMs:  
 Gray's Index**

Gray's Index	NI			NA		
	2004-2006	2007-2009	2004-2009	2004-2006	2007-2009	2004-2009
<i>Total Difference</i> (Delisted CRMs)	56.502	10.462	14.229	9.371	6.890	7.752
<i>GAAP Difference</i> (Dual listings)	1.029	1.017	1.020	0.940	0.939	0.939
<i>Abnormal Difference</i>	55.473	9.445	13.209	8.430	5.951	6.813
Abnormal Difference as a multiple of the magnitude of GAAP difference	54	9	13	9	6	7

*NI* is net income. *NA* is net assets. Gray's Index equals one minus the difference of the accounting numbers reported in China and in the U.S. divided by absolute value of numbers reported in China. The degree of how Gray's Index deviates from one indicates to what extent the number reported in the U.S. deviates from that reported in China. *Total Difference* is the difference measured by the median of Gray's Index of the accounting numbers of CRMs between their financial statements reported in two countries. *GAAP Difference* is the normal difference between US GAAP and China GAAP, which is estimated from the sample of dual listed companies. *Abnormal Difference* equals to *Total Difference* minus *GAAP Difference*. Abnormal Difference as a multiple of the magnitude of GAAP difference equals to *Total Difference* divided by *GAAP Difference*.

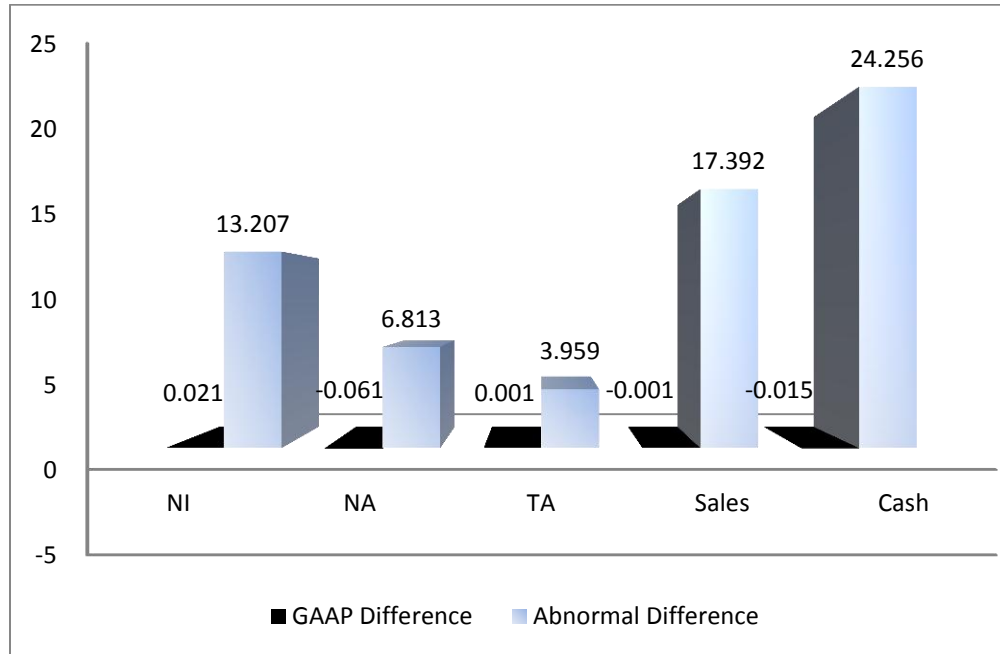
**Exhibit 4: Decomposition of GAAP Difference and Abnormal Difference: Delisted CRMs**

<i>DIFF</i>	<i>NI</i>			<i>NA</i>		
	2004-2006	2007-2009	2004-2009	2004-2006	2007-2009	2004-2009
<i>Total Difference</i> (Delisted CRMs)	55.502	9.462	13.229	8.371	5.890	6.752
<i>GAAP Difference</i> (Dual listings)						
<i>US-IFRS GAAP Difference</i>	0.018	0.018	0.018	-0.056	-0.056	-0.056
<i>US-IFRS GAAP Difference (%)</i>	61.0%	27.6%	28.7%	32.0%	68.4%	65.9%
<i>IFRS-China GAAP Difference</i>	0.022	0.001	0.004	-0.006	-0.006	-0.006
<i>IFRS-China GAAP Difference (%)</i>	39.0%	72.4%	71.3%	68.4%	31.6%	34.1%
<i>US-China GAAP Difference</i>	0.029	0.020	0.021	-0.060	-0.061	-0.061
<i>US-China GAAP Difference (%)</i>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<i>Abnormal Difference</i>	55.473	9.442	13.207	8.430	5.952	6.813
Abnormal Difference as a multiple of the magnitude of GAAP difference	1910	476	620	141	97	111

*NI* is net income. *NA* is net assets. *DIFF* equals to the difference of accounting numbers reported under different accounting standards divided by the absolute value of numbers reported in China. *Total Difference* is the difference measured by the median of *DIFF* of accounting numbers of CRMs between their financial statements reported in the U.S. and in China. *US-China GAAP Difference* is normal difference between US GAAP and China GAAP, which is estimated from dual-listed samples and decomposed into *US-IFRS GAAP Difference* and *IFRS-China GAAP Difference*. *US-IFRS GAAP Difference (%)* denotes *US-IFRS GAAP Difference* as a percentage of *US-China GAAP Difference*. *IFRS-China GAAP Difference (%)* denotes *IFRS-China GAAP Difference* as a percentage of *US-China GAAP Difference*. *Abnormal Difference* equals to *Total Difference* minus *US-China GAAP Difference*. Abnormal Difference as a multiple of the magnitude of GAAP difference equals to *Total Difference* divided by *US-China GAAP Difference*.



**Exhibit 5: GAAP Difference versus Abnormal Difference of Delisted CRMs**



*NI* and *Sales* are net income and sales. *NA*, *TA* and *Cash* are net assets, total assets and cash. *GAAP Difference* is normal difference measured by the median of *DIFF* between US GAAP and China GAAP, which is estimated from the sample of dual-listed companies. *Abnormal Difference* equals to *Total Difference* of CRMs minus *GAAP Difference*.