# Related Party Transactions, Expropriation and Post-IPO Performance – Chinese Evidence

(This draft: November 2006)

Peng Cheng*
University of Surrey (UK)

Jean Chen
University of Surrey (UK)

**Note:**

1. We wish our paper to be considered for publication in the *EFM*

2. The presenting author would be willing to serve as a discussant in the conference

* School of Management, University of Surrey, Guildford, Surrey, United Kingdom, GU2 7XH; Tel: 0044 (0)1483 683102; Fax: 0044 (0)1483 689511; Email: p.cheng@surrey.ac.uk

# Abstract

This study provides evidence that Chinese IPOs (Initial Public Offerings) report a sharp decline in the post-IPO operating performance relative to the pre-IPO level. We find that related party transactions (RPTs) with controlling shareholders have significant effects on IPO operating performance. We divide RPTs into two types: loan RPTs and operating RPTs (i.e. non-loan RPTs). Our findings show that the pre-IPO industry-adjusted operating performance is positively associated with the size of contemporaneous operating RPTs at the same year; moreover, controlling shareholders barely borrow funds from their IPO subsidiaries in the pre-IPO year. However, in the post-IPO period, the positive relation between IPO operating performance and contemporaneous operating RPTs (with controlling shareholders) fades away. Importantly, controlling shareholders begin to expropriate IPO subsidiaries by obtaining a large amount of cash loans with preferential terms, which is negatively associated with post-IPO industry-adjusted operating performance of listed subsidiaries.

We argue that controlling shareholders structure a large percentage of operating RPTs to artificially boost revenues and/or profits of their IPO subsidiaries in the pre-IPO period. However, controlling shareholders discontinue this RPT-based earnings manipulation practice. Furthermore, controlling shareholders begin to expropriate IPO subsidiaries, primarily in return for profits and/or resources transferred into the IPO subsidiaries in the pre-IPO period. Finally, we find that state-controlled IPO firms with a highly concentrated ownership structure and a board of directors less independent from controlling shareholders are more likely to be expropriated by controlling shareholders in the post-IPO period via related loans.



**Key words:** IPOs, operating performance, related party transactions (RPTs), expropriation

**JEL:** G14, G15, G34, K33

## 1 Introduction

Prior studies show that US IPO firms exhibit a decline in the post-issue operating performance relative to pre-IPO level, both before and after industry adjustments (Jain and Kini, 1994; Mikkelson et al., 1997). The international evidence, including Holland (Roosenboom, 2003), Japan (Kutsuna et al., 2002), Thailand (Kim et al., 2004), China's A-share Market (Wang et al., 2001; Chen and Shih, 2004; Wang, 2005) and China's B- and H-share market (Aharony et al., 2000; Huang and Song, 2003) also obtain the same findings.

One of possible explanations for the decline is that the pre-issue operating performance may have been exaggerated. Teoh et al. (1998) and Roosenboom (2003), by examining the US and Dutch IPO firms, find that discretionary current accruals, which are under the control of management and proxy for earnings management, are high before the IPO relative to those of non-issuers. Issuers with higher discretionary accruals have poorer performance in the subsequent three years. Further, Aharony et al. (2000) also find that Chinese B- and H-share IPO firms engage in accrual-based earnings management in the pre-IPO period.

In this research, we extend prior research by focusing on 'RPT-based earnings management' around the IPO year. We hypothesize that, besides accruals manipulation, IPO firms may be able to engage in earnings management through some other approaches, such as 'channel stuffing' (Butters, 2001; Harris and Lublin, 2002), and/or related parties (Thomas et al., 2004). In a case of RPT-based earnings management,

profits will be shifted between the two related parties, but the profitability of the economic entity as a whole remains generally unaffected (Thomas et al., 2004).

This study provides empirical evidence based on Chinese A-share IPO market, since Chinese firms engage a large amount of RPTs with their controlling shareholders before and/or after the IPO. In prior literature, Wang et al. (2001), Chen and Shih (2004) and Wang (2005) have studied Chinese A-share IPOs by using actual accounting measures without industry adjustments, such as EBITDA, Sales Growth, ROE (Return On Equity) and EPS (Earnings Per Share), and have found that public listing is associated with a sharp deterioration in operating performance for up to six years after the IPO year. Wang et al. (2001) and Wang (2005) argue that the deterioration of post-IPO operating performance is associated with corporate ownership structure and weak corporate governance. However, the question 'how concentrated ownership and weak governance structure affect the IPO long-term operating performance in China' has not been explored.

We argue that controlling shareholders may use their influential relationship over their affiliated companies to structure transactions in a way that allows resources to be transferred, or profits to be shifted between the two parties. In the pre-IPO period, controlling shareholders may structure transactions to artificially boost revenues and/or profits of pre-IPO subsidiaries. Firms with better historical earnings performance would normally be easier to float on the Chinese stock market, and may probably offer the stocks with a higher IPO price, if investors do not see through the earnings manipulative schemes. However, in the post-IPO period, controlling shareholders lose interest in

structuring transactions to benefit listed subsidiaries; furthermore, controlling shareholders are likely to expropriate their listed subsidiaries in return for economic resources transferred to the subsidiaries in the pre-IPO period (Jian and Wong, 2004).

The remainder of the paper is organized as follows: Section 2 presents the literature review and an introduction to Chinese law and regulations. Section 3 introduces the hypotheses and variables. Section 4 describes the data, and discusses the findings. Section 5 comes to the conclusion.

## 2 Literature Review

### *2.1 Related Party Transactions, Earnings Management and Expropriation*

A related party transaction is "*a transfer of resources, services, or obligations between related parties, regardless of whether a price is charged, and Parties are considered to be related if one party has the ability to control the other party or to exercise significant influence or joint control over the other party in making financial and operating decisions*" (International Accounting Standards, IAS 24.9). Related party transactions among group members can be cost-effective, because they help reduce transaction costs and enhance the enforcement of property rights and contracts (Coase, 1937). However, controlling shareholders and/or corporate executives may abuse these related dealings for opportunistic purposes. For example, if the transactions are structured at a price other than the market price, and then the profits would be shifted between group members, however the consolidated earnings remain generally unaffected (Thomas et al., 2004). Coca-Cola once uses the influential relationship with its bottlers, in which

Coca-Cola has large ownership and board seats, to charge a higher price for the concentrate sold to bottlers and eventually boost its profits (McKay, 2002).

Further, related party transactions may be associated with the expropriation of the listed subsidiaries by controlling shareholders. Recent US corporate scandals have highlighted the extensive misuse of related party transactions and the opportunities to expropriate resources out of related parties. In the example of Adelphia, the company engaged in extensive related party transactions so that the controlling family members' dealings with the listed company have " *looted Adelphia on a massive scale, using the company as the Rigas family's personal piggy bank, at the expense of public investors and creditors*" (Feeney[1], 2002).

### *2.2 Expropriation, Corporate Governance and Concentration Ownership*

Expropriation is "*the process of using one's control powers to maximize own welfare and redistribute wealth from others*" (Claessens et al., 1999). It is highly associated with legal protection of minority investors, because investor protection makes expropriation technology less efficient (La Porta et al., 1997, 1998, 2000, and 2002). Strong corporate governance is likely to restrain the magnitude of expropriation. However, the transition economies, due to weak regulations and enforcements, provide rich settings for considering the importance of investor protection. Indeed, the term "tunneling", as noted in Johnson et al. (2000), signifies the idea that majority shareholders can employ various means to transfer the assets and profits out of firms for

[1] US Postal Inspector

their personal benefit through related party transactions in many ways. For example, loans on preferential terms; or a transfer of assets from the listed company to other companies under their control (Cheung et al., 2004).

Recent literature also shows the relationship between ownership concentration and expropriation. With poor investor protection, ownership concentration becomes a substitute for legal protection (La Porta et al., 1998). Particularly in emerging markets, the emergence of concentrated blocks of shareholders does not appear to be synonymous with the provision of monitoring services (Berglof, 1995), mainly because large shareholders might need to own a high percentage of shareholdings to exercise their control rights and thus expropriate wealth from minority shareholders. Minority investors, when poorly protected, might request a very low demand for corporate shares, which would indirectly stimulate ownership concentration (La Porta, 1998).

### *2.3 Overview: China's IPO Process*

Since the early 1990s, public listing on the stock exchanges is the China's strategy to reform its State-Owned Enterprises (SOEs). At the end of 2003, 1246 companies issue A shares to the market publicly and raise a total of ¥ 761.7 billion, whilst 111 B shares IPOs are offered and raise ¥ 32.8 billion (CSRC, 2004)[2].

However, China's economic reform is often called as 'one-third privatized' policy (Green, 2003), since Chinese SOEs initially only sell around one third of their equities to public investors, and still retain control. Take the market as a whole, the government

[2] A shares market is the main market for domestic investors; however, B shares market is designed for overseas investors, and B shares stocks are traded in foreign currencies, either US Dollars or Hong Kong Dollars.

agencies ultimately keep 47.9% of total shares for the entire market (China Economy Daily, 2001). Institutional shareholdings, held by mutual funds and QFIIs[3], account for a small percentage of 4% of the overall ownership by 2003 (HKEx, 2004). Since the ownership structure is highly concentrated, minority shareholders may be on the verge of being expropriated.

The corporate governance is still to be well functional in China. Executive members of listed firms often hold a position in controlling shareholders' entity simultaneously, or hold a previous position. The board is also strongly dominated by the members representing controlling shareholders, and there is no independent director in the board before the promulgation of the *Code of Corporate Governance* in 2002 (CSRC[4], 2002), which requires one third of board members to be independent. However, independent directors are too small to fight against the state-owned controlling shareholders, which have extensive political connections with the government. Chen and Cheng (2006) argue that many independent directors are nominated by controlling shareholders and/or executive directors of the companies, so that the true nature of independent directors may be jeopardized, although independent directors have no obvious relationship with large shareholders. Moreover, Chen and Cheng (2006) do not find evidence that introducing independent directors into Chinese listed firms are likely to improve the quality of financial reporting.

## 3 RPT Practices in China and Hypothesis Development

[3] Qualified Foreign Institutional Investors
[4] China Securities Regulatory Commission, Chinese securities authority

### *3.1 RPT Disclosures in China*

From 1998 onwards, Chinese listed firms have been required to publish transactions between related parties on their annual reports, including the nature of the related party relationship as well as the amount of the transactions. Since then, corporate disclosures show a huge amount of transactions between listed companies and their controlling shareholders, mainly because of the 'special bond' between the two parties. Most Chinese listed firms originated from one profitable unit of their parent SOEs, and they do not even have an independent marketing and distribution network and supply chains, so that they have to sell (or purchase) products (or raw materials) to (or from) their controlling shareholders, and then controlling shareholders re-sell the products to a third party. In other cases, listed firms sell semi-finished goods and products to their controlling shareholders, and then controlling shareholders further develop these semi-finished goods into finished goods.

Based on our observations, we categorize all types of transactions between controlling shareholders and Chinese listed firms reported on corporate annual reports into two different groups: operating RPTs (or say, non-loan RPTs) and loan RPTs. Table one defines the two different types of RPTs.

[Insert table one here]

(1) Operating items: This category consists of trade relationship and some other sources of transactions, such as the sales of non-monetary assets, leases, franchises, and administrative overheads (water & electricity supply etc.) and so on. Trade relationship

is the main source of RPTs between controlling shareholders and listed firms, consisting of the sales and/or purchases of goods, products and services.

(2) Non-operating items: The second category represents loan transactions, such as cash loans and loans guarantees. According to the *Standards of Loans* in China, a non-financial company is not allowed to act as a financial service lender and engage in the business of making customers loans. However, loans offered to related parties are legal. It is reported that more than 54% of Chinese firms make cash loans to their controlling shareholders and the aggregate amount of cash loans reaches ¥57.7 billion by the end of 2003 (Xinhua Net, 2005). These related loans are often made with preferential terms, and usually interest free, or at an interest rate lower than the market level. So, in this sense, related loans by listed firms to controlling shareholders are often associated with the expropriation of listed firms.

Loan guarantee is not a real transfer of economic resources from one party to the other, so that it would not have a significant effect on corporate operating performance, unless the debtor is not able to return the funds to the lending institution. In this case, the guarantor will have to repay it to the creditor, and the operating performance of the guarantor's entity may suffer from it.

### *3.2 Hypothesis Development*

In this study, we extend prior literature and investigate the effects of RPTs between IPO firms and their controlling shareholders on the long-term IPO operating performance. Since ownership structure for Chinese listed companies is highly concentrated, the

interest of controlling shareholders and their listed subsidiaries is aligned. Controlling shareholders may be interested in structuring transactions with their listed subsidiaries and help them to achieve income-reporting objectives.

### *3.1 Pre-IPO Earnings Management Hypothesis*

In the pre-IPO period, controlling shareholders have incentives to boost the revenues and/or profits of their subsidiaries, primarily because IPO firms with good historical earnings performance are more likely to qualify for equity offerings. Earnings manipulation may sometimes lead to a higher IPO price, if investors are deceived by the 'manipulative schemes' and are willing to pay a higher price (Teoh et al., 1998).

We hypothesize that besides accrual-based earnings management, transactions with their controlling shareholders might be the second source to boost the earnings figures of IPO firms. For example, IPO subsidiaries may sell goods, products and services to their controlling shareholders, at a higher selling price other than the fair price, and/or purchase raw materials from controlling shareholders at a lower price, so that profits can be shifted from controlling shareholders to IPO firms. Most importantly, IPO subsidiaries may also engage in 'channel stuffing' to inflate the sales, by aggressively overselling goods to controlling shareholders. Controlling shareholders, as a result, hold excess inventories above the normal level, and do not return products to the subsidiaries before the IPO. In this sense, the pre-IPO operating performance may be inflated through transactions with controlling shareholders.

So, we test the following hypothesis:

***H1:*** *in the pre-IPO period, reported operating performance of IPOs is associated with the aggregate operating RPTs between controlling shareholders and IPO subsidiaries.*

### *3.2 Post-IPO Payback Hypothesis*

However, once IPO subsidiaries get listed, controlling shareholders lose interest in continuingly propping up their listed subsidiaries. Furthermore, controlling shareholders may expect future payback for what they have contributed in the pre-IPO period. One common way for controlling shareholders to benefit from pre-IPO contributions is probably to sell the shares in the market after the IPO event is completed. However, in Chinese A-share market, the shares held by controlling shareholders are categorized as non-tradable shares, which can not be traded publicly on the stock exchanges. Controlling shareholders are only allowed to sell these non-tradable shares in a large sum (Block Trade) off stock exchanges by seeking a prospective buyer on their own, when a three-year lock-up period ends up. So, a more likely way for controlling shareholders to gain payback is to expropriate listed subsidiaries in the post-IPO period by siphoning cash and/or other economic resources back from the listed firms, in return for the assets and/or profits surrendered by controlling shareholders in the pre-IPO period.

For example, controlling shareholders may obtain cash loans from their listed subsidiaries with the terms preferential to controlling shareholders. Since IPO firms normally keep a large amount of unused IPO proceeds in their bank accounts, they are able to make loans to their controlling shareholders without running short of working

capitals, unless those loans are extraordinarily larger than IPO firms can comfortably afford. Of course, controlling shareholders may also expropriate their listed subsidiaries through some other ways, like charging a higher price for selling goods and non-monetary assets to their subsidiaries, and paying a lower price for buying goods and non-monetary assets from their subsidiaries. However, it is important to recognize that expropriations through cash loans are more likely than expropriations through other RPTs. For example, expropriations through trade relationship and/or non-monetary assets are less likely to be adopted, because a loss will be immediately recognized into profit and loss accounts of listed subsidiaries to write off the difference between the trading price and the fair price. As a result, controlling shareholders and listed subsidiaries may both suffer from the decline in reported earnings of listed subsidiaries. So, we expect that expropriation through cash loans is the main way for controlling shareholders to expropriate listed firms after the IPO event, and, in this research, the extent of loans by listed subsidiaries to controlling shareholders is the proxy for the magnitude of expropriation.

One may argue that prospect of expropriation may discourage participation of public investors in the IPOs. However, it is important to recognize that Chinese IPOs are offered at a great discount to attract investors. Chan et al. (2004) find that Chinese IPOs are highly underpriced and the average underpricing[5] for Chinese A-share IPOs (1993-1998) is 178%. As a result, the demand for Chinese IPOs is extremely high, and all the Chinese IPOs have been enthusiastically oversubscribed usually by 100 times or

[5] Underpricing rate is calculated as the return on the first day of trading (relative to the offering price)

more. Even if investors expect controlling shareholders to expropriate IPO firms in the post-IPO period, investors may not turn away from participation in the IPOs.

We, then, will test the following hypothesis below:

***H2:*** *in the post-IPO period, controlling shareholders are likely to expropriate IPO subsidiaries via related loans; and the post-IPO reported operating performance is negatively associated with the aggregate amount of such loans.*

As soon as controlling shareholders expropriate their listed subsidiaries in the post-IPO period via related loans, stock prices are also expected to drop, because public investors, when poorly protected, might be willing to buy corporate shares only at a lower price (La Porta, 1998). Such loans may significantly damage corporate operating performance and stock performance, when they are considerably large. So, our third hypothesis is:

***H3:*** *in the post-issue period, the size of loans by IPO firms to controlling shareholders is negatively associated with the post-IPO stock performance.*

One may argue that when a controlling shareholder expropriate its listed subsidiary by obtaining cash loans, the stock price may go down and the controlling shareholder would lose money in the stock market. Although the controlling shareholder extracts assets from its subsidiary through cash loans, but it loses money in the stock market so as to end up with nothing in the end. However, the shares held by controlling shareholders are categorized as non-tradable shares, which can only be traded off stock exchanges on a negotiation basis. So, controlling shareholders do not necessarily care

much about the ups and downs of their stock prices on the exchanges, if they have no plan for a second equity offering.

## 4 Empirical Results

### *4.1 Data Collection and Sample Distribution*

This research uses the IPOs offered in Chinese A-share (or B-share) market, whose first trading day over stock exchange is between 1st January 1999 and 31st December 2000. The sample IPOs should have accounting figures and RPT disclosures available from one year before till four years after, and data for stock returns available up to 4 years after the IPO. As a result, 239 IPO cases are included into our final research sample.

Firstly, we choose IPOs offered in the period (1999-2000), because China made a major GAAP change towards IAS/IFRS in 1998. Since then, disclosures of the related party relationships and transactions are required in full details as a separate section on the footnotes of financial statements. So, data on RPTs between controlling shareholders and IPO firms can be manually collected from firms' IPO prospectuses and/or their annual reports, which may be downloaded from China Finance online (NASDAQ NM: JRJC, http://www.jrj.com.cn).

Secondly, we only investigate the six-year operating performance of these IPOs, including one year before the IPO year (Y (-1) year) and four year after the IPO year (Y (+i) year, i = 1,2,3,4), because accounting data, particularly RPT data, in Y (-2) year or before are never available. IPO firms are only required to publish RPT transactions in the latest fiscal year on IPO prospectuses. Operating performance and stock

performance figures are generously provided by Shenzhen Securities Info Co., Ltd and GreatWise Info Co. Ltd respectively.

Panel A of table 2 describes sample distribution by industry sectors. The sample firms are segregated into 13 industry groups (1-digit), by using the CSRC's Standard Industry Classification (SIC, 2001), which is currently the only official system to classify Chinese listed firms. We further break the group C into 9 sub-groups (2-digit), because most of sample firms (62%) are categorized into manufacturing Group (Group C). So, in this research, sample firms are divided into these 21 industry (sub-)sectors, and matched publicly traded firms are those which come from the same industry (sub-)sectors and went public prior to 1998.

Panel B presents descriptive statistics of sample firms in comparison to the contemporaneous figures of the whole market, in terms of Sales, Total Assets, EBITDA, Return on Assets and Cash Flow from Operation. Sample firms are of a magnitude similar to the whole market by means of operation scales and profitability. Sales figures of the sample firms are Chinese ¥ 1.44 billion (mean value) and 0.70 billion (median value) respectively, and the figures for the market are ¥ 1.90 billion and 0.62 billion respectively. The mean test and median test both show that the differences between sample firms and the market are not statistically significant (t statistic = 0.22 and z statistic = 0.86 respectively). The mean and median values of EBITDA for sample companies are Chinese ¥ 0.21 billion and ¥ 0.09 billion respectively, and ¥ 0.27 billion and ¥ 0.08 billion for the entire market. Both mean test and median test show that the

differences of the two groups are not statistically significant at any effective level (t statistic = 0.34 and z statistic = 0.09 respectively).

[Insert table 2 here]

### *4.2 Long-term IPO Operating Performance*

In this research, ROA (EBITDA divided by lagged (-1) total assets) and CFO (Net cashflow from operation divided by lagged (-1) total assets) are employed as the operating performance indicators, since they are widely used in prior literature to evaluate the efficiency in making profits. Furthermore, the IPO firms' operating performance is examined after industry adjustment, in order to control for the industry shock. The industry-adjusted performance figures are obtained by deducting the median contemporaneous ROA (or CFO) figures of the same 2-digit publicly traded firms (Mikkelson et al., 1997).

Panel A of the table 3 shows the industry-adjusted ROA figures from Y (-1) year to Y (+4) year. It is clear that IPO firms report significantly better earnings performance than industry peers in the pre-IPO year by 12.71% (t-statistic = 10.39) in mean value and 10.18% (z-statistic = 8.43) in median value respectively. IPO firms continue to outperform their industry peers in terms of ROA figures in the IPO year, but this abnormally high earnings performance is reduced to 7.06% (mean value, t-statistic = 4.76) and 3.40% (median value, z-statistic = 6.20) respectively. This abnormally high earnings performance fades away in Y (+1) year and Y (+2) year, since earnings performance of IPO firms further report lower the market slightly, but it is not

statistically significant at any effective level. Panel B reports industry-adjusted cashflow performance from Y (-1) year to Y (+4) year. It shows that IPO firms report significantly higher CFO figures than industry peers by 6.74% (mean value, t statistic 2.79) or 2.54% (median value, z statistic = 3.81) respectively in Y (-1) year. However, from the IPO year onwards, the industry-adjusted CFO figures report no significant outperformance, and fluctuate around the zero point. Table 3 shows that, in terms of both ROA and CFO figures, IPO firms report extraordinarily better operating performance in the pre-IPO period, however, the abnormally outperformance fades away in the pre-IPO period.

[Insert table 3 here]

Table 3 is consistent with prior research that Chinese IPOs experience a sharp deterioration in operating performance from pre-IPO level to post-IPO level (Wang et al., 2001; Chen and Shih, 2004; Wang, 2005). However, our results indicate that the deteriorating performance is formed, primarily because IPO firms abnormally outperform the industry peers in terms of operating performance in the pre-IPO period, and this abnormally outperformance disappears after the IPOs are successfully listed. We conjecture that the pre-IPO performance figures may have been significantly inflated. It is important to recognize that cashflow figures are also abnormally high in Y (-1) year, showing that IPO firms may engage in some manipulative schemes other than accruals-based approach to manage reported operating performance, because accruals-based earnings management has no effect on cashflow components of reported earnings.

### *4.3 RPT practices*

Table 4 reports the six sources of line-item RPTs between controlling shareholders and their IPO subsidiaries in terms of actual amount scaled by lagged (-1) total assets. The first line item describes the loan transactions between the two parties, which is measured as the loans by controlling shareholders to IPO subsidiaries net of the loans offered by listed companies to their controlling shareholders. The remaining line items demonstrate non-loan operating transactions, which cover trade relationships, non monetary transactions, royalties and leases etc. A detailed definition of variables is made in the table 4.

[Insert table 4 here]

As a whole, the total amount of related party transactions scaled by lagged (-1) total assets starts at 24.18% in the Y (-1) year, and reaches a peak of 30.17% in the IPO year. However, it declines to 20.12% in the Y (+1) year, and then remains stable from that year on. The first 2 line items in table 4, which include Net loans and trade relationship, show the most active transactions between controlling shareholders and IPO subsidiaries. Trade relationship is the largest type of RPTs in value. The percentage in Y (-1) year is 19.49%, and rises to 21.48% in the IPO year. It significantly declines to 13.86% in Y (+1) year and fluctuates in a range from 12.77% to 15.27% later on. Net loans begin at 0.45% in Y (-1) year, and soon turn to be a negative figure (-3.73%) in the IPO year. It shows that IPO firms start to make loans to controlling shareholders as soon as getting listed. From Y (+1) year onwards, the percentage remains to be negative,

and the absolute value seems to narrow down steadily from 3.24% in Y (+1) year to 1.85% in Y (+4) year.

Table 4 provides evidence that trade relationship between controlling shareholders and IPO subsidiaries significantly decrease from pre-IPO period to post-IPO period. Moreover, IPO subsidiaries begin to make cash loans to controlling shareholders as soon as the IPO event is completed. An IPO is expected to make ownership structure more diversified and improve the quality of corporate governance from before to after the IPOs, since listed firms have to abide by the CSRC's regulations, particularly those requirements for Corporate Governance. However, table 4 shows that the improvement in ownership structure and corporate governance resulting from the IPO does not seem to make expropriation difficult, and cash loans by IPO firms to controlling shareholders become more in the post-IPO period. One of the possible reasons is that controlling shareholders retain a large percentage of ownership and fully dominate the board rooms, so that the quality in corporate governance is not substantially improved in the post-IPO period.

In table 5, we try to investigate the relation between RPTs in the pre-IPO period and those in the post-IPO period. Our sample IPOs are segregated into 4 quartile portfolios by the aggregate amount of operating RPTs in the Y (-1) year. Table 5a and 5b present operating RPTs and loan RPTs (net loans) between controlling shareholders and IPO subsidiaries over the 6 years from Y (-1) year to Y (+4) year.

[Insert table 5 here]

Table 5a presents operating RPTs over the 6 years around the IPO in 4 quartile portfolios. It shows that the first three quartile portfolios (Q1, Q2 and Q3), which report relatively small operating RPTs in the pre-IPO period, remain to report a small amount of operating RPTs in the post-IPO period, and these operating RPTs do not seem to decline from before to after the IPO. However, the fourth quartile portfolio (Q4) reports a tremendously large operating RPTs in the pre-IPO period, and the figures in the post-IPO period are moderately high as well. There is a clear decline in operating RPTs of the portfolio (Q4) from before to after the IPO.

Table 5b presents loan RPTs over the 6 years around the IPO in 4 quartile portfolios. The first three quartile portfolios (Q1, Q2 and Q3), which report smaller pre-IPO operating RPTs, seem to make cash loans to controlling shareholders in the post-IPO period, but the magnitude of such loans is relatively small (-0.89%, -2.82% and -2.99% respectively). However, the fourth quartile portfolio (Q4), which report larger pre-IPO operating RPTs make a larger magnitude of cash loans to controlling shareholders in the post-IPO period (-4.38%).

Table 5 shows that there is a positive relation between pre-IPO RPTs and post-IPO RPTs. Controlling shareholders structure a large percentage of operating RPTs to benefit their IPO subsidiaries in the pre-IPO period are likely to reduce those beneficial RPTs in the post-IPO period. More importantly, the more controlling shareholders structure operating non-loan transactions with their subsidiaries in the pre-IPO period, the more controlling shareholders receive cash loans from their listed subsidiaries in the post-IPO period. It implies that controlling shareholders receive cash loans from their listed subsidiaries in the post-IPO period, probably in return for profits and/or resources transferred into the subsidiaries in the pre-IPO period.

In table 6, we further investigate the relationship between pre-IPO operating RPTs and long-term post-IPO operating performance of Chinese firms. If pre-IPO reported operating performance is artificially manipulated through operating RPTs between IPO subsidiaries and controlling shareholders prior to the IPO, it is expected that IPO firms with larger non-loan RPTs (operating RPTs) in the pre-IPO period are likely to report better operating performance in the pre-IPO period; and those IPO firms are likely to suffer a quicker decline in operating performance from before to after the IPOs. The finding in table 6 is supportive of this expectation.

[Insert table 6 here]

In panel A and B, sample firms are sorted by the magnitude of pre-IPO operating RPTs, which is measured as the aggregate amount of non-loan RPTs in the Y (-1) year scaled by the lagged (-1) total assets, and we then segregate same firms into four different quartile portfolios. Portfolio Q1 represents the IPO firms reporting smallest pre-IPO operating RPTs, while portfolio Q4 represents the IPO firms reporting largest pre-IPO operating RPTs.

Panel A presents the mean values of industry-adjusted ROA figures of IPO firms in the four pre-IPO non-loan RPTs quartile portfolios. In Y (-1) year and Y (0) year, the mean values of industry-adjusted ROA for portfolio Q1 are the lowest among the four portfolios (7.16%, t statistic = 5.76; 2.08%, t statistic = 2.59 respectively), however, portfolio Q4 reports the largest (20.31%, t statistic = 5.86; 14.25%, t statistic = 3.02). It indicates that IPO firms with larger pre-IPO operating RPTs are likely to report better earnings performance in the pre-IPO period. Furthermore, there is a significant decline in earnings performance from before to after the IPOs for all of the four quartile portfolios, but it is clear that IPO firms with larger pre-IPO operating RPTs are likely to

report a larger decline in earnings performance from before to after the IPO. However, Portfolio Q1 reports a decline from 7.16% to -0.03%; whilst portfolio reports a larger decline from 20.13% to 0.96%.

Panel B presents the mean values of industry-adjusted CFO for the four quartile portfolios before and after the IPOs. Portfolio Q4 with the largest pre-IPO operating RPTs reports the abnormally highest cashflow performance in Y (-1) year (16.47%, t statistic = 1.95) among the four different quartile portfolios; while the remaining three portfolios (Q1, Q2, Q3) report relatively lower cashflow performance (2.62%, 3.45% and 3.67% respectively). Furthermore, it seems that IPO firms with largest pre-IPO non-loan RPTs report an evidently large decline in cashflow performance from 16.47% in the pre-IPO period to 2.35% in the post-IPO period; however all the other three portfolios do not seem to report a strong decline in cashflow performance from before to after the IPO.

Table 6 confirms the expectation that pre-IPO operating performance may have been artificially exaggerated through non-loan RPTs. We find that IPO firms with larger non-loan RPTs in the pre-IPO period are likely to report better operating performance in the pre-IPO period; and consequently those IPO firms are likely to suffer a quicker decline in operating performance from before to after the IPO.

### *4.4 OLS Cross-sectional Regression Analysis*

We then use an OLS cross-sectional regression analysis to investigate the relationship between IPO operating performance and the size of RPTs. We use two RPT variables: 'Net_loan' and 'Operating_items'. 'Operating_item' is measured as the aggregate amount of all types of RPTs but loan transactions. The industry-adjusted $ROA_i$ and

$CFO_i$ figures are regressed on the 2 line-item RPT variables (the magnitude of operating RPTs and loan RPTs respectively) for Y (i) year (i=-1,0,1,2,3,4). We also include a set of control variables, including Firm Size (Total assets at the beginning of the year), Management Ownership (Aggregate amount of shares held by corporate directors & executives), Age (Difference between the establishment year and the IPO year), Capital Expenditure (Asset-scaled capital investment adjusted for depreciation charges), and Government Subsidy (Asset-scaled governmental subsidy received, including tax refunds, and project-specific government grants).

[Insert table 7 here]

Table 7a presents the regression results, when ROA is regressed on RPT variables. The first two models explain 21.5% and 18.3% ($R^2$) of the variation of the dependent variable respectively. The estimated coefficients of variable 'Operating_items' in the first two models are found to be strongly positive (0.071 and 0.105 respectively) and highly significant (at 5% and 1% level respectively), indicating that operating RPTs significantly contribute to the IPO earnings performance between Y (-1) year and the IPO year. The coefficients of variable 'Net_loan' are positive (0.146 and 0.163 respectively) as to the first two years, but none is found statistically significant. Further, for the remaining 4 models, the $R^2$ values increase a little, ranging from 20.1% to 31.8%. The estimated coefficient of 'operating items' decreases to 0.076 (at 5% level) for Y (+1) year. It continues to decrease (0.036, 0.033 and 0.030 respectively) in the subsequent years, but the relationship is not significant. It shows that non-loan RPTs become a less significant contributing factor to the earnings performance from Y (+1)

year onwards. However, in Y (+1) year, the coefficient of 'Net_loan' is strongly positive (0.311) at 1% level. Between Y (+2) year and Y (+3) year, it slightly declines to 0.305 (at 1% level) and 0.194 (at 5% level) respectively, indicating that 'Net_loan' is positively associated with the post-IPO earnings performance. As shown in table 4, 'Net_loan' turns to be negative figures in the post-IPO period, so that we believe loan transactions by IPO firms to controlling shareholders have a negative effect on post-IPO earnings performance.

Table 7b further provides regression results, when the dependent variable 'ROA' is replaced with 'CFO'. Table 5b further confirms the findings presented in table 5a. The estimated coefficients of variable 'Operating_items' in the first two models are found to be positive (0.106 and 0.109 respectively) at 10% significance level, indicating that non-loan RPTs significantly contribute to the IPO cashflow performance in the Y (-1) year and the IPO year. However, the positive relationship between non-loan RPTs and cashflow performance grows weaker in Y (+3) year, and fades away thereafter. In Y (-1) year, the estimated coefficient of variable 'Net_loan' is positive and statistically insignificant (0.908). However, from the IPO year to Y (+2) year, the coefficients of 'Net_loan' are 0.664, 0.348 and 0.185 respectively (at 5%, 5% and 10% significance level), indicating that 'Net_loan' is positively associated with the post-IPO cashflow performance.

Table 7a and 7b provide evidence that operating performance of IPO firms, in terms of earnings performance and cashflow performance, is highly related to RPTs between controlling shareholders and IPO firms. We find that non-loan RPTs, particularly trade

relationship, show an abnormally large figure in the Y (-1) year and IPO year, and the size of non-loan RPTs is positively associated with pre-IPO operating performance. This positive relationship fades away, when the firms are listed for more than 3 years. Simultaneously, we further find that IPO firms significantly make cash loans to their controlling shareholders from the IPO year onwards, and the size of such loans has a negative effect on post-IPO operating performance.

In short, based on table 6 and 7, we argue that RPTs with controlling shareholders could be one of the explanations for the operating outperformance of IPO firms in the pre-IPO period. The reasons for the decline in the post-IPO operating performance relative to pre-IPO level are twofold: (1) controlling shareholders used to structure a large amount of non-loan transactions beneficial to their IPO subsidiaries in the pre-IPO period; however, in the post-IPO period, controlling shareholders structure less and less non-loan RPTs beneficial to IPO firms. (2) controlling shareholders begin to expropriate IPO subsidiaries in the post-IPO period, for example obtaining a large amount of cash loans.

### *4.5 RPTs and Stock Returns*

Then, we further investigate the effects of the post-IPO operating RPTs and loan RPTs on aftermarket stock performance of Chinese IPOs. The two stock performance measures, BAHRs (buy and hold returns) and CARs (cumulative abnormal returns), are used to evaluate the aftermarket abnormal performance of Chinese IPOs, since both of them are widely used in prior literature to identify long-term abnormal performance

(Teoh et al., 1998; Roosenboom et al., 2003), but neither of them is always preferred (Gompers and Lerner, 2001). The yearly benchmark-adjusted returns are calculated as the yearly raw return on a stock minus the yearly benchmark return for the corresponding trading period. So, the BAHRs and the CARs for an IPO firm i in event time t (t = 1,2,3,4) are calculated as follow:

$$BAHR_{i,t} = \prod_{s=1}^{t}(1+R_{i,s}) - \prod_{s=1}^{t}(1+R_{m,s})$$

$$CAR_{i,t} = \sum_{s=1}^{t}(R_{i,s} - R_{m,s})$$

Where $R_{i,s}$ represents the raw stock return of stock i in event year Y (s) (s=1, 2, 3, 4), and $R_{m,s}$ is the contemporaneous benchmark return in event year Y (s) (s=1, 2, 3, 4). The aftermarket period includes the following 4 years where years are defined as successive 252-trading-day periods relative to the IPO date. Thus, the event year 1 consists of event days 1-252, and the event year 2 consists of event days 253-504. For IPOs that are de-listed before their 5-year anniversary, the aftermarket period is truncated, and the 5-year return ends with its last listing. In addition, the buy-and-hold returns and Cumulative abnormal returns are both inclusive of dividends and other distributions.

In this study, we follow Ritter (1991) by using matching firms for a benchmark, which denote those already-listed firms matched by industry, primarily because IPO long-run operating performance is industry-adjusted by matching firms, and accordingly IPO long-run stock performance should also be adjusted by a same industry-matched firms

benchmark. So, the benchmark return used in this study is the median contemporaneous stock return of a group of matched publicly traded firms.

Then, we perform an OLS cross-sectional regression analysis to investigate the relationship between aftermarket stock performance of Chinese IPOs and the size of post-IPO RPTs. We use two RPT variables: 'Net_loan' and 'Operating_items', which are measured as the aggregate amount of loan RPTs and operating RPTs respectively from the IPO year through to the Y (+3) year. The two stock performance measures are regressed on the 2 line-item RPT variables (the magnitude of operating RPTs and loan RPTs respectively). We also include a set of control variables, including Firm Size, Age, Capital Expenditure and Government Subsidy, into the regression analysis.

[Insert table 8 here]

Table 8 presents the two regression results. The two models explain 33.6% and 21.0% ($R^2$) of the variation of the dependent variable respectively. The estimated coefficients of variable 'Operating_items' in the two regressions are found to be strongly positive (0.219 and 0.188 respectively) and highly significant (at 1% level), indicating that there is a positive relation between operating RPTs in the post-IPO period and aftermarket stock performance of IPO subsidiaries. The coefficients of variable 'Net_loan' are also positive (0.458 and 0.371 respectively), and statistically significant at 5% and 10% levels respectively.

Table 8 presents some evidence that there is a relation between post-IPO RPTs (either operating or loan RPTs) and aftermarket stock performance in the long run. IPO firms

involved with cash loans to controlling shareholders in the post-IPO period are likely to perform poorly in the market over a four-year event period, in comparison to their industry peers. This finding is supportive of prior conjecture that public investors, when poorly protected, might be willing to buy corporate shares only at a lower price (La Porta, 1998). Interestingly, we also find that IPOs reporting long-lasting non-loan operating RPTs in the post-IPO period are also likely to perform well in the stock market. It shows that post-IPO operating RPTs, if present, would positively drive up stock performance of IPOs. However, as indicated earlier, IPOs involved with RPT-based earnings manipulation in the pre-IPO period are likely to report a lower percentage of operating RPTs in the post-IPO period.

### *4.6 RPTs Segregated by Ownership and Governance Characteristics*

Finally, we further examine the ownership characteristics and governance characteristics of IPO firms involved with RPT practices, aiming to find out the effects of stock characteristics on the likelihood of pre-IPO earnings manipulation and post-IPO expropriation practices. We hypothesize that a subsidiary with a concentrated ownership structure is more likely to make transactions with its controlling shareholder, when corporate governance is weak. As discussed in section 2, with poor investor protection, ownership concentration becomes a substitute for legal protection (La Porta et al., 1998). In this circumstance, the controlling shareholder is more likely to engage in RPT-based earnings management in the pre-IPO period, and expropriate the IPO subsidiary in the post-IPO period in return for profits and/or resources transferred into the subsidiaries around the IPO event. Sound corporate governance practices may be able to protect the

subsidiary from being expropriated. However, with weak corporate governance, this is not the case.

In this section, we investigate three aspects of ownership structure and corporate governance characteristics: (1) Type of ultimate ownership; (2) Degree of ownership concentration; and (3) Independence of the board.

(1) Type of ultimate ownership

The majority of Chinese IPO firms are ultimately controlled by the state, and the others are controlled by wealthy individuals or privately-held companies. We expect that controlling shareholders, if ultimately owned by the state, are more likely to engage in RPT-based earnings management and post-IPO expropriation practices, because Chinese regulatory agencies do not have adequate independence from government, and state-owned controlling shareholders generally have obvious political connections with market regulators. Securities authority, the CSRC, cannot work as a third-party overseer to regulate state controlled firms, who can hardly be punished for illegal activities.

Panel A of table 9 provides evidence to support the predicted effect. In Panel A, IPO firms are segregated into two portfolios by the type of ultimate ownership at the end of the IPO year. In the pre-IPO period, the 39 non state-controlled sample IPO firms report a smaller magnitude of pre-IPO non-loan RPTs (8.87%, t statistic = 3.13 in Y (-1) year; 13.03%, t statistic = 2.09 in Y (0) year respectively) than the 200 state-controlled sample firms do (23.21%, t statistic = 5.00 in Y (-1) year; 26.46%, t statistic = 5.49 in Y (0) year respectively). However, in the post-IPO period, the 200 state-controlled IPO

firms report a much larger magnitude of negative loans (ranging from -2.13% to -3.57%) than the 39 non state-controlled IPO firms do (ranging from -0.43% to -1.88%). Panel A shows that state-controlled IPO firms are more likely to engage in RPT-based earnings management in the pre-IPO period, and get expropriated by controlling shareholders through cash loans in the post-IPO period.

[Insert table 9 here]

(2) Degree of ownership concentration

We expect that a diversified ownership structure of IPO firms is likely to constrain RPT-based earnings management and post-IPO expropriation practices, since minority shareholders may be on the verge of being expropriated, if controlling shareholders retain strong voting power. It is believed that the ownership structure is less concentrated, if the controlling shareholder holds a percentage of 30% ownership or less. However, once the percentage by the controlling shareholder reaches 50% or above, the ownership structure of the IPO firm is considered to be highly concentrated and, as a result, the controlling shareholder has gained the absolute power to control shareholders' meetings.

Then, in Panel B, IPO firms are segregated into three portfolios by the percentage of ownership held by controlling shareholders at the end of the IPO year (cutting points: 30% and 50%). Panel B shows that only 9 IPO firms have a less concentrated ownership structure (≤30%), and they, on average, report the smallest magnitude of pre-IPO non-loan RPTs (2.15%, t statistic = 1.53 in Y (-1) year) and the smallest

magnitude of post-IPO loans in the post-IPO period (with a range between -0.17% and -1.52%). However, most sample IPO firms (199) report a highly concentrated ownership structure (≥50%) and show the significantly largest pre-IPO non-loan RPTs (22.67%, t statistic = 4.97 in Y (-1) year) and the largest loan RPTs to controlling shareholders in the post-IPO period (with a range between -2.20% and -4.37%). Panel B shows that IPO firms with a highly concentrated ownership structure are more likely to engage in RPT-based earnings management in the pre-IPO period, and get expropriated by controlling shareholders through cash loans in the post-IPO period.

(3) Independence of the board

We expect that a board independent from the controlling shareholders is likely to constrain RPT-based earnings management and post-IPO expropriation practices conducted by controlling shareholders, primarily because a balanced and independent board of directors is likely to effectively monitor the operating activities and financial reporting practices of the firm. The independence of the board is essential to the effectiveness of corporate governance of the company, and each company should be headed by an effective board, which is collectively responsible for the success of the company (UK Combined Code, 2003). However, once the independence of the board is jeopardized, the effectiveness of the monitoring is questionable. China did not officially bring independent directors into the board, until the promulgation of the Code of Corporate Governance in 2002, and, traditionally, the board is fully occupied by the representatives from major shareholders. I hypothesize that IPO firms with a

non-independent board of directors are more likely to engage in the pre-IPO RPT-based earnings management and post-IPO expropriation practices.

The sample IPO firms are then segregated into three portfolios by the percentage of directors in the board who represent the controlling shareholder at the end of the IPO year (cutting points: 30% and 50%). Panel C shows that the 88 sample IPO firms with a more independent board (30% or less) report a smallest magnitude of pre-IPO non-loan RPTs (10.99%, t statistic = 2.71 in Y (-1) year) and a smallest post-IPO loan RPTs to controlling shareholders (ranging from -0.94% to -1.74%). The 65 sample IPO firms with a moderately independent board (more than 30% but less than 50%) show a larger amount of pre-IPO non-loan RPTs (24.08%, t statistic = 2.55 in Y (-1) year) and a larger amount of loan RPTs to controlling shareholders (ranging from -1.47% to -2.57%) than IPO firms with a more independent board do, but lower than the 86 sample IPO firms with a less independent board (50% or above) do (ranging from -2.24% to -6.07%). Panel C shows that IPO firms with a board less independent from the controlling shareholder are more likely to engage in RPT-based earnings management in the pre-IPO period, and be expropriated via related loans by the controlling shareholder in the post-IPO period.

## 5 Conclusion, Implication and Limitation

### *5.1 Concluding Remarks*

This study examines the operating performance of Chinese IPOs, and the effects of related party transactions (RPTs) between IPO firms and their controlling shareholders

on the pre- and/or post-IPO performance. We find that Chinese IPOs significantly outperform the industry peers in terms of operating performance (ROA and CFO) during the pre-IPO period, but do not report a significant underperformance relative to the industry in the post-IPO period. This finding is consistent with previous research by Wang et al. (2001), Chen and Shih (2004) and Wang (2005) showing that Chinese IPOs are associated with a sharp deterioration in operating performance after the year of listing.

However, we argue that the deterioration in performance is partly because operating performance of IPO firms may be inflated through related party transactions in the pre-IPO period. Controlling shareholders structure a large percentage of non-loan RPTs with IPO firms in the pre-IPO year and the IPO year, which are positively associated with the operating performance of IPO firms. In the post-IPO period, controlling shareholders lose interest in consistently propping up their listed subsidiaries through RPTs. The positive relationship between operating performance of IPO firms and the size of non-loan RPTs fades away, when the firms are listed for more than 3 years. Furthermore, controlling shareholders begin to expropriate listed subsidiaries via cash loans from the IPO year onwards, in return for profits and/or resources transferred into the subsidiaries around the IPO. The size of such loans is often negatively associated with the operating performance of IPO firms in the post-IPO period.

Finally, we have explored stock characteristics of IPO firms involved with RPTs. We find that state-controlled IPO firms with a high level of ownership concentration and a

board of directors less independent from the controlling shareholder are more likely to be expropriated by controlling shareholders in the post-IPO period via related loans.

### *5.2 Implication*

My findings have important implication for investors willing to participate in Chinese A-share IPO market. I have found that Chinese IPO firms are likely to manipulate operating performance through accruals and/or through related party transactions in the pre-IPO period. So, investors may need to check those IPO prospectuses and corporate financial statements with great caution, before making the investment decision. There are some signs, which may be helpful to detect pre-IPO earnings management: (1) IPO firms report an abnormally higher amount of total accruals relative to industry peers. For example, the rate of allowances for doubtful debts and/or provisions for impairment losses is obviously lower than normal. (2) IPO firms report a large percentage of operating RPTs in the pre-IPO period, since firms may abuse the use of RPTs to boost sales and/or profits before going public. (3) The ownership structure of IPO firms is highly concentrated and the board of directors is less independent from controlling shareholders. I find that those IPO firms are more likely to engage in the pre-IPO earnings management.

On the other hand, my research may be of use to market regulators in the financial sector. Market regulators may need to do more to constrain the pre-IPO earnings management, in order to protect investors. The most important thing is to improve rules and regulations, particularly in the two aspects: (1) corporate governance rules, and (2)

regulations for information transparency and disclosure quality. Of course, enforcing these rules and regulations is as equally important as developing these rules and regulations.

### *5.3 Limitation*

Due to data unavailability, I can only investigate one full fiscal year prior to the IPOs, but four years after. According to disclosure regulations, Chinese IPO firms are only required to disclose historical operating performance and RPT details of the most recent fiscal year on their IPO prospectuses. Practically, a very small number of IPO firms provide two years' historical information prior to the IPOs on a voluntary basis. So, in this sense, the evidences may be limited, if I could not look at the fiscal years further backwards prior to the Y (-1) year.

Another problem of data collection goes to the quality of information disclosures. I can only observe and collect the data of RPT practices disclosed on public sources, such as IPO prospectuses and corporate financial statements. I assume that companies produce their annual reports in accordance with the CSRC's regulations and disclose their RPT practices whenever required. However, if firms fail to perform their responsibilities of public disclosures and/or report their RPT practices improperly, RPT variables, as a result, may be inappropriately determined.

**References:**


Aharony, J., Lee, C.W.J., and Wong, T.J., 2000, Financial Packaging of IPO Firms in China, *Journal of Accounting Research* 38, 103–126.

Berglof, E., 1995, Corporate Governance In Transitional Economies: The Theory and Its Policy Implications. In *Corporate Governance in Transitional Economies: insider control and the role of banks*. (M. Aoki and H. Kim) Washington, D.C.: World Bank.

Cai, J., and Wei. K., 1997, The investment and operating performance of Japanese IPO, *Pacific-Basin Finance Journal* 5, 389-417.

Chan, K., Wang J.B., and Wei, K.C., 2004, Underpricing and Long-term Performance of IPOs in China, *Journal of Corporate Finance* 10, 409-430.

Chen, C., and Shih, H., 2004, Initial Public Offering and Corporate Governance in China's Transitional Economy, *NBER-EAST Asia Seminar on Economics* 12, University of Chicago Press, ISBN: 0-226-38679-1.

Chen, J.J., and Cheng, P., 2006, Corporate Governance and Accounting Harmonisation with IFRS– Evidence from China, *Corporate Governance: an International Review* Forthcoming.

Cheung, Y., Rau, P.R., and Stouraitis, A., 2004, Tunneling, Propping and Expropriation Evidence from Connected Party Transactions in Hong Kong, *Journal of Financial Economic*s Forthcoming.

Claessens, S., Djankov, S., Fan, J., and Lang, L., 1999, Expropriation of Minority Shareholders in East Asia, *Work Bank*, working paper.

CMOF, 1998, Accounting System for Joint Stock Limited Companies: Accounting and Financial Statements, *File: CK [1998] No.7.*

Coase, R. H., 1937, The Firm, The Market and The Law, University of Chicago Press. ISBN: 0226111016.

CSRC, 2001, The Standard Industrial Classification for Listed Companies, 4th April 2001.

CSRC & SETC (2002), Code of Corporate Governance for Listed Companies in China, *File: Zhengjianfa [2002] No.1,* (*http://www.csrc.gov.cn/en/homepage/index_en.jsp* ).

CSRC, 2004, China's Securities and Futures Markets, Yearly report, *http://www.csrc.gov.cn/en/homepage/index_en.jsp*

Dechow, P., R. Sloan, and Sweeney, A., 1995, Detecting Earnings Management, *Accounting Review* 70, 193–225.

Feeney, T., 2002, Bail Set For Adelphia Execs, July 24 2002, may be available on CBS

News online: http://www.cbsnews.com/stories/2002/09/23/national/main522992.shtml

Green, S., 2003, 'Two-Thirds Privatisation': How China's Listed Companies are Finally Privatisation. *China Project Paper*, The Royal Institute of International Affairs, London.

Gompers, P., and Lerner, J., 2003, The really long-run performance of initial public offerings: the pre-Nasdaq evidence, *Journal of Finance*, forthcoming.

HKEx, 2004, Institutional Investors in Mainland China, Research and Planning of HKEx *( http://www.hkex.com.hk/research/r-papers/IIMC.pdf* ).

Huang, S., and Song, F., 2003, The Financial and Operating Performance of China's Newly Listed H-firms, *working paper*.

Jain, B. A., and Kini, O., 1994, The Post-issue Operating Performance of IPO Firms, *Journal of Finance* 49, 1699–1726.

Jensen, M. C., and Meckling, W. H., 1976, Theory of The Firm: Managerial Behaviour, agency costs and ownership structure, *Journal of Financial Economics* 3, 305–360.

Jian, M., and Wong, T.J., 2004, Earnings Management and Tunneling through Related Party Transactions: Evidence from Chinese Corporate Groups, *Working paper*.

Johnson, S., La Porta, R., Lopez-De-Silanes, F., and Shleifer, A., 2000, Tunneling, *The American Economic Review* 90, 22-27.

Jones, J.J., 1991, Earnings Management During Important Relief Investigation, *Journal of Accounting Research* 29, 193–228.

Kooli, M., and Suret J.M., 2003, The aftermarket performance of Canadian IPOs, Journal of Multinational Financial Management, forthcoming.

Kim, K. A., Kitsabunnarat, P., and Nofsinger, J. R., 2004, Ownership and Operating Performance In an Emerging Market: Evidence From Thai IPO Firms, *Journal of Corporate Finance* 10, 355-381.

Kutsuna, K., Okamura, H., and Cowling, M., 2002, Ownership Structure Pre- and Post-IPOs and The Operating Performance of JASDAQ Companies, *Pacific-Basin Finance Journal* 10, 163– 181.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R., 1997, Legal determinants of external finance, *Journal of Finance* 52, 1131-1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R., 1998, Law and finance, *Journal of Political Economy* 106, 1113-1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R., 2000, Investor protection and corporate governance, *Journal of Financial Economics* 58, 3-28.

La Porta, R., Lopez-deSilanes, F., Shleifer, A., Vishny, R., 2002, Investor Protection and Corporate Valuation, *Journal of Finance* 57, 1147-1170.

Levis, M., 1993, The long-run performance of initial public offerings: The UK experience 1980-1988, *Financial Management* 22, 28-41.

Ljungqvist, A., 1997, Pricing Initial Public Offerings: Further evidence from Germany, *European Economic Review* 41, 1309-1320.

Loughran, T., and Ritter, J. R., 1995, The New Issues Puzzles, *Journal of Finance* 50, 23–51.

McKay, B., 2002, Coca-Cola: Real Thing Can be hard to measure, *Wall Street Journal*, 23rd Jan. 2002.

Mikkelson, W. H., Partch, M. M., and Shah, K., 1997, Ownership and Operating Performance of Companies That Go Public, *Journal of Financial Economics* 44, 281–307.

Ritter, J. R., 1991, The Long-run Performance of Initial Public Offerings, *Journal of Finance* 46, 3–27.

Roosenboom, P., Goot, T., and Gerard, M., 2003, Earnings Management and Initial Public Offerings: Evidence From the Netherlands, *International Journal of Accounting* 38, 243–266.

Teoh, S. H., Welch, I., and Wong, T. J., 1998, Earnings Management and The Long-run Market Performance of Initial Public Offerings, *Journal of Finance* 53, 1935–1974.

Thomas, W., Herrmann, D., and Inoue, T., 2004, Earnings Management Through Affiliated Transactions, *Journal of International Accounting Research* 3 (2), 1–25.

Wang C., 2005, Ownership and operating performance of Chinese IPOs, *Journal of Banking & Finance* 29, 1835–1856.

Wang, X., Xu, L. C., and Zhu, T., 2001, Is Public Listing a Way Out for State-Owned Enterprises? The Case of China, *Working paper*.

Xinhua Net, 2005, Cash Loans to Controlling Shareholders, News Release (5th April 2005), may be available online at: http://news.xinhuanet.com/fortune/2005-04/05/content_2786775.htm

**Table 1: seven types of related party transactions widely used in China**

| Types | | Description |
|---|---|---|
| Operating items | 1. Goods and Services (trade relationship) | Sales/Purchases of goods, products, and services between controlling shareholder and its listed subsidiary |
| | 2. Sales/Acquisitions of non-monetary assets | Sales/Acquisitions of non-monetary assets between controlling shareholder and its listed subsidiary, such as tangible and intangible assets |
| | 3. Overhead assigned (administrative services) | Overhead costs paid from controlling shareholder (or its listed subsidiary) to its listed subsidiary (or the controlling shareholder) for obtaining administrative services and the use of facilities |
| | 4. Royalties and Franchises | Patents, permits and Franchises between controlling shareholder and its listed subsidiary; normally controlling shareholder acts as the franchisor |
| | 5. Leases | The operating and financial leases between controlling shareholder and its listed subsidiary |
| Non-operating items | 6. Cash Loans | The loans of cash between controlling shareholder and its listed subsidiary |
| | 7. Loan Guarantees | The loan guarantees provided for listed company using controlling shareholder's assets as collateral, or provided for controlling shareholder using listed firm's assets as collateral |

Note: Based on the RPT observations disclosed on corporate annual reports of Chinese companies

## Table 2: Data Description

Panel A: Sample companies distributed by industry

| SIC (2001) | Sample | Whole Market[6] |
|---|---|---|
| **A Agriculture, forestry, & fishing** | **10** | **30** |
| **B Mining** | **5** | **20** |
| **C Manufacturing** | **153** | **742** |
| *- C0 Foods and beverages* | *(14)* | *(58)* |
| *- C1 Textiles, suits and leathers* | *(16)* | *(56)* |
| *- C2 Wood products and furniture* | *(1)* | *(2)* |
| *- C3 Papers, stationery, sporting, musical instruments* | *(4)* | *(24)* |
| *- C4 Petroleum refining, chemicals, and allied products* | *(27)* | *(136)* |
| *- C5 Electronic, electric components and home appliances* | *(5)* | *(39)* |
| *- C6 Mineral products and metal products* | *(27)* | *(117)* |
| *- C7 Equipments and machineries* | *(35)* | *(194)* |
| *- C8 Drugs and Biologic products* | *(24)* | *(82)* |
| **D Water, electricity, and gas** | **9** | **52** |
| **E Construction** | **4** | **25** |
| **F Transport & public utilities** | **13** | **55** |
| **G Information technology** | **12** | **79** |
| **H Wholesale and retail trade** | **10** | **96** |
| **I Finance and insurance** | **2** | **10** |
| **J Real estate** | **1** | **45** |
| **K Service** | **12** | **41** |
| **L Publishing, media, and allied services** | **1** | **11** |
| **M Miscellaneous products and services** | **7** | **81** |
| **TOTAL** | **239** | **1287** |

Source: Standard Industry Classification of China (2001) promulgated by the CSRC

Panel B: Sample statistics (unit: billion Chinese RMB Yuan)

| | | Mean | Median | Min | Max |
|---|---|---|---|---|---|
| Sales | Sample | 1.44 | 0.70 | 0.03 | 15.63 |
| | Market | 1.90 | 0.62 | 0.00 | 417.19 |
| Total assets | Sample | 5.19 | 1.50 | 0.43 | 279.30 |
| | Market | 4.94 | 1.34 | 0.02 | 503.89 |
| EBITDA | Sample | 0.21 | 0.09 | -0.22 | 1.95 |
| | Market | 0.27 | 0.08 | -1.07 | 63.01 |
| Return on Assets (%) | Sample | 7.27% | 6.84% | -13% | 30% |
| | Market | 8.52% | 7.12% | -68% | 205% |
| Cashflow from operation (%) | Sample | 6.89% | 5.47% | -15% | 88% |
| | Market | 5.37% | 4.84% | -90% | 268% |

Note: Return on assets: EBITDA scaled by lagged (-1) total assets

Cashflow from operation: net cash inflow from operations scaled by lagged (-1) total assets

[6] Ending at year 2003

## Table 3: Industry-adjusted Operating Performance around the IPO

Panel A: ROA

| | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year |
|---|---|---|---|---|---|---|
| Median (Z-statistic) | 10.18%*** (8.43) | 3.40%*** (6.20) | -0.79% (0.87) | -0.07% (0.45) | -0.82% (1.07) | -1.08% (1.43) |
| Mean (t-statistic) | 12.71%*** (10.39) | 7.06%*** (4.76) | 0.09% (0.11) | 0.10% (0.13) | -0.44% (-0.72) | -0.65% (-0.91) |
| Maximum | 80.40% | 119.00% | 43.02% | 20.74% | 17.26% | 21.91% |
| Minimum | -8.30% | -9.10% | -18.01% | -24.95% | -18.73% | -20.82% |
| Standard Deviation | 0.121 | 0.146 | 0.076 | 0.071 | 0.060 | 0.070 |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

Note: ROA (Return of Assets): EBITDA divided by the lagged (-1) total assets less the median contemporaneous ROA figures of the same 2-digit publicly traded firms

Panel B: CFO

| | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year |
|---|---|---|---|---|---|---|
| Median (Z-statistic) | 2.54%*** (3.81) | -2.26% (1.37) | 1.09%* (1.70) | 1.12%* (1.70) | 0.13% (0.03) | -0.91% (0.53) |
| Mean (t-statistic) | 6.74%*** (2.79) | -0.41% (-0.17) | 1.72% (1.45) | 2.55%** (2.08) | -0.28% (-0.35) | -0.70% (-0.78) |
| Maximum | 179.36% | 176.52% | 59.23% | 83.99% | 24.13% | 22.10% |
| Minimum | -29.26% | -42.59% | -45.60% | -19.33% | -24.73% | -28.25% |
| Standard Deviation | 0.23 | 0.23 | 0.12 | 0.14 | 0.07 | 0.08 |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

Note: CFO (Cash flow from operations): net cash flows from operations divided by the lagged (-1) total assets less the median contemporaneous CFO figures of the same 2-digit publicly traded firms

## Table 4: Related party transactions before and after the IPO

| | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year |
|---|---|---|---|---|---|---|
| Net_loan<br>(t-statistic) | 0.45%<br>(0.81) | -3.73%***<br>(-4.32) | -3.24%***<br>(-4.21) | -2.23%***<br>(-3.50) | -2.83%***<br>(-3.95) | -1.84%**<br>(-3.15) |
| Trade_relationship<br>(t-statistic) | 19.49%***<br>(5.21) | 21.48%***<br>(5.54) | 13.86%***<br>(5.58) | 15.27%***<br>(5.58) | 12.78%***<br>(5.35) | 14.94%***<br>(4.46) |
| Non_monetary_asset<br>(t-statistic) | 0.70%<br>(1.50) | 2.01%**<br>(2.25) | 1.54%***<br>(3.73) | 1.76%***<br>(2.84) | 0.82%***<br>(3.33) | 2.10%***<br>(3.21) |
| Administrative_service<br>(t-statistic) | 0.65%***<br>(4.39) | 0.46%***<br>(5.00) | 0.27%***<br>(5.46) | 0.50%***<br>(3.51) | 0.33%***<br>(2.82) | 0.38%***<br>(3.00) |
| Royalty<br>(t-statistic) | 0.02%<br>(1.00) | 0.02%<br>(1.00) | 0.00%<br>(1.00) | 0.00%<br>(1.00) | 0.06%<br>(1.00) | 0.02%<br>(1.00) |
| Lease<br>(t-statistic) | 0.00%<br>(1.00) | 0.00%<br>(1.00) | 0.01%<br>(1.48) | 0.01%**<br>(2.38) | 0.00%**<br>(2.30) | 0.00%**<br>(1.92) |
| Total Amount | 24.18%***<br>(5.92) | 30.17%***<br>(6.74) | 20.12%***<br>(7.29) | 22.14%***<br>(7.42) | 17.88%***<br>(7.16) | 21.71%***<br>(5.68) |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

Variables definition

| | |
|---|---|
| 1. Net_loan | The difference between loans provided by controlling shareholders to their listed subsidiaries and loans provided by listed subsidiaries to their controlling shareholders; loans guarantees should not be included, if not executed |
| 2. Trade_relationship | The sales and/or purchases of goods, products, and services between controlling shareholders and their listed subsidiaries |
| 3. Non_monetary_asset | The sales and/or acquisitions of non-monetary assets between controlling shareholders and their listed subsidiaries, such as tangible and intangible assets |
| 4. Administrative_service | Expenses paid from controlling shareholders (or listed subsidiaries) to listed subsidiaries (or controlling shareholders) for obtaining administrative services and the use of private resources |
| 5. Royalty | The annual expenses paid for the use of patents, permits and Franchises between controlling shareholders and listed subsidiaries |
| 6. Lease | The annual expenses paid for operating and financial leases between controlling shareholders and listed subsidiaries |
| 7. Total Amount | The aggregate amount of related party transactions, which includes all the six types of transactions above |

Note: Related party transactions: the real amounts scaled by the lagged (-1) total assets

**Table 5a: Operating RPTs segregated by pre-IPO operating RPTs quartiles**

| Quartiles | Tests | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year |
|---|---|---|---|---|---|---|---|
| Q1 (smaller) | Mean (t-statistic) | 0.08%*** (2.95) | 5.04%** (2.17) | 6.00%* (1.97) | 3.01%*** (3.67) | 3.89%** (2.05) | 2.61%*** (3.25) |
| Q2 | Mean (t-statistic) | 1.64%*** (8.38) | 7.77%** (2.37) | 5.49%*** (3.09) | 10.20%** (2.24) | 10.18%** (2.42) | 17.17%* (1.93) |
| Q3 | Mean (t-statistic) | 9.40%*** (8.54) | 10.99%*** (6.98) | 12.70%*** (5.93) | 17.91%*** (4.41) | 10.80%*** (4.62) | 15.68%*** (4.07) |
| Q4 (larger) | Mean (t-statistic) | 76.84%*** (7.60) | 77.53%*** (6.64) | 40.16%*** (5.26) | 40.78%*** (4.84) | 32.55%*** (4.22) | 35.85%*** (3.87) |
| One-way ANOVA | F statistic (sig.) | 56.99*** (0.00) | 33.57*** (0.00) | 14.97*** (0.00) | 10.21*** (0.00) | 7.54*** (0.00) | 4.19*** (0.00) |

**Table 5b: Loan RPTs segregated by pre-IPO operating RPTs quartiles**

| Quartiles | Tests | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year | Post-IPO Average |
|---|---|---|---|---|---|---|---|---|
| Q1 (smaller) | Mean (t-statistic) | 0.00% (0.21) | -1.66%* (-2.00) | -0.60% (-1.33) | -0.13% (-0.41) | -0.41% (-1.16) | -1.33%* (-2.00) | -0.89%** (-2.21) |
| Q2 | Mean (t-statistic) | 0.84% (0.65) | -2.26% (-1.63) | -3.94%*** (-2.81) | -3.58%*** (-3.24) | -3.14%*** (-3.30) | -1.79%* (-1.99) | -2.82%*** (-3.86) |
| Q3 | Mean (t-statistic) | 1.19% (0.75) | -4.49%** (-2.24) | -2.85%** (-2.32) | -2.38%* (-1.69) | -3.36%** (-2.44) | -1.88% (-1.29) | -2.99%** (-2.61) |
| Q4 (larger) | Mean (t-statistic) | -0.23% (-0.28) | -6.61%*** (-2.95) | -4.36%** (-2.12) | -3.68%* (-1.73) | -4.52%* (-1.89) | -2.56% (-1.57) | -4.38%** (-2.48) |
| One-way ANOVA | F statistic (sig.) | 0.383 (0.76) | 4.60*** (0.00) | 1.16 (0.32) | 1.54 (0.20) | 2.15* (0.09) | 0.77 (0.51) | 2.65* (0.05) |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

**Definition:**

| | |
|---|---|
| Grouping variable (non-loan RPTs) | The aggregate amount of related party transactions other than loans and loans guarantees (which cover the sales and/or purchases of goods, products, services non-monetary assets and royalties and leases etc) in the Y (-1) year scaled by the lagged (-1) total assets |
| Post-IPO average | The mean amount of asset-scaled net loans between the IPO year and the Y (+4) year |

## Table 6: Operating performance segregated by pre-IPO non-loan RPTs quartiles

Panel A: ROA figures

| Quartiles | Tests | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year | Post-IPO Average |
|---|---|---|---|---|---|---|---|---|
| Q1 (smaller) | Mean | 7.16%*** | 2.08%** | -0.85% | 1.15% | -0.01% | -0.44% | -0.03% |
| | (t-statistic) | (5.76) | (2.59) | (-1.11) | (1.57) | (-0.08) | (-0.53) | (-1.08) |
| Q2 | Mean | 10.23%*** | 3.64%** | -1.36% | -0.59% | -0.54% | -1.91% | -0.76% |
| | (t-statistic) | (8.45) | (2.76) | (-1.10) | (-0.36) | (-0.53) | (-1.60) | (-1.63) |
| Q3 | Mean | 12.51%*** | 7.59%*** | -0.10% | -0.83% | -1.05% | -1.83% | -0.95% |
| | (t-statistic) | (6.06) | (3.49) | (-0.07) | (-0.53) | (-0.72) | (-1.29) | (-1.44) |
| Q4 (larger) | Mean | 20.31%*** | 14.25%*** | 2.84% | 0.65% | -0.18% | 1.87% | 0.96% |
| | (t-statistic) | (5.86) | (3.02) | (1.13) | (0.39) | (-0.08) | (0.90) | (0.79) |
| One-way ANOVA | F statistic | 6.50*** | 3.98** | 1.52 | 0.51 | 0.21 | 1.35 | 1.68 |
| | (sig.) | (0.00) | (0.01) | (0.23) | (0.67) | (0.88) | (0.27) | (0.17) |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

Panel B: CFO figures

| Quartiles | Tests | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year | Post-IPO Average |
|---|---|---|---|---|---|---|---|---|
| Q1 (smaller) | Mean | 2.62%** | -5.64%* | 1.57% | 3.56%** | -2.40% | -1.08% | 1.65% |
| | (t-statistic) | (2.38) | (-1.85) | (0.85) | (2.22) | (-1.48) | (-0.52) | (0.28) |
| Q2 | Mean | 3.45% | 0.54% | 2.23% | -1.63% | 0.74% | 1.89% | 0.80% |
| | (t-statistic) | (1.61) | (0.23) | (1.25) | (-1.02) | (0.55) | (1.45) | (1.16) |
| Q3 | Mean | 3.67% | -2.64% | -0.59% | 3.97%* | -1.07% | -3.37%* | -1.06% |
| | (t-statistic) | (1.52) | (-1.01) | (-0.39) | (1.80) | (-1.18) | (-1.72) | (-0.71) |
| Q4 (larger) | Mean | 16.47%* | 5.89% | 3.48% | 4.06% | 2.15% | -0.29% | 2.35% |
| | (t-statistic) | (1.95) | (0.77) | (0.96) | (1.13) | (1.29) | (-0.14) | (1.19) |
| One-way ANOVA | F statistic | 2.24* | 1.28 | 0.51 | 1.21 | 1.86 | 1.36 | 1.00 |
| | (sig.) | (0.08) | (0.28) | (0.67) | (0.30) | (0.14) | (0.25) | (0.39) |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

**Definition:**

| | |
|---|---|
| Grouping variable (non-loan RPTs) | The aggregate amount of related party transactions other than loans and loans guarantees (which cover the sales and/or purchases of goods, products, services non-monetary assets and royalties and leases etc) in the Y (-1) year scaled by the lagged (-1) total assets |
| Post-IPO Average | The mean amount of operating performance between the IPO (+1) year and the Y (+4) year |

**Table 7a: OLS Regression models on related party transactions**

$$ROA_i = \beta_0 + \beta_1 * Net\_Loan_i + \beta_2 * Operating\_items_i + \beta_3 * Size_i + \beta_4 * Age_i + \beta_5 * Capital\_expenditure_i + \beta_6 * Government\_subsidy_i + \varepsilon_i$$

| | | Coefficients | | | | | |
|---|---|---|---|---|---|---|---|
| | | ***Y(-1)*** | ***Y(0)*** | ***Y(+1)*** | ***Y(+2)*** | ***Y(+3)*** | ***Y(+4)*** |
| | Intercept<br>(t-statistic) | 0.148***<br>(6.74) | 0.045<br>(1.43) | 0.012<br>(0.88) | -0.012<br>(-0.76) | -0.012<br>(-1.09) | -0.028**<br>(-2.10) |
| RPT variables | Net_loan<br>(t-statistic) | 0.146<br>(0.60) | 0.163<br>(0.95) | 0.311***<br>(3.25) | 0.305***<br>(2.74) | 0.194**<br>(2.57) | 0.082<br>(0.77) |
| | Operating_items<br>(t-statistic) | 0.071**<br>(2.32) | 0.105***<br>(2.94) | 0.076**<br>(2.53) | 0.036<br>(1.41) | 0.033<br>(1.45) | 0.030<br>(1.60) |
| Control variables | Size<br>(t-statistic) | -0.002*<br>(-1.70) | -0.001<br>(-0.90) | -0.001<br>(-0.99) | -0.000<br>(-0.43) | -0.000<br>(-0.05) | -0.000<br>(-0.24) |
| | Age<br>(t-statistic) | -0.010**<br>(-2.00) | -0.006<br>(-1.03) | -0.003<br>(-1.00) | -0.003<br>(-0.89) | -0.005**<br>(-2.05) | -0.004<br>(-1.50) |
| | Capital_expenditure<br>(t-statistic) | 0.044<br>(0.57) | 0.127**<br>(2.07) | 0.375<br>(0.94) | 0.201**<br>(2.61) | 0.317***<br>(4.09) | 0.367***<br>(5.50) |
| | Government_subsidy<br>(t-statistic) | -0.468<br>(-0.54) | 0.601<br>(0.74) | -1.354<br>(-1.05) | 1.122<br>(0.67) | -0.757<br>(-0.92) | 0.406<br>(0.31) |
| $R^2$ | | 21.5% | 18.3% | 20.1% | 20.6% | 30.5% | 31.8% |
| Adjusted $R^2$ | | 13.5% | 12.9% | 14.8% | 15.3% | 25.9% | 27.3% |
| F Statistic | | 2.62 | 3.40 | 3.81 | 3.93 | 6.65 | 7.07 |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

**Definition:**

| | |
|---|---|
| Net_loan | The difference between loans by controlling shareholders to listed subsidiaries and loans by listed subsidiaries to controlling shareholders scaled by lagged (-1) total assets; loans guarantees should not be included, if not executed |
| Operating_items | The RPTs other than loans, including the sales and/or purchases of goods, products, and services; non-monetary assets; royalties; administrative overheads and leases |
| Size | The beginning-year total assets (billion Chinese ¥) |
| Age | The difference between the establishment year and the IPO year |
| Capital_expenditure | The capital investment (adjusting for depreciation charges) scaled by lagged (-1) total assets |
| Governmental_subsidy | The governmental subsidy received, including tax refunds, and project- specific government grants scaled by lagged (-1) total assets |

## Table 7b: Regression models on related party transactions

$$CFO_i = \beta_0 + \beta_1 * Net\_Loan_i + \beta_2 * Operating\_items_i + \beta_3 * Size_i + \beta_4 * Age_i + \beta_5 * Capital\_expenditure_i + \beta_6 * Government\_subsidy_i + \varepsilon_i$$

| | | Coefficients | | | | | |
|---|---|---|---|---|---|---|---|
| | | ***Y(-1)*** | ***Y(0)*** | ***Y(+1)*** | ***Y(+2)*** | ***Y(+3)*** | ***Y(+4)*** |
| | Intercept<br>(t-statistic) | 0.035<br>(0.79) | -0.016<br>(-0.31) | 0.012<br>(0.52) | 0.004<br>(0.16) | -0.028*<br>(-1.86) | 0.010<br>(0.50) |
| RPT variables | Net_loan<br>(t-statistic) | 0.908<br>(0.87) | 0.664**<br>(2.43) | 0.348**<br>(2.28) | 0.185*<br>(1.91) | 0.044<br>(0.42) | 0.077<br>(0.51) |
| | Operating_items<br>(t-statistic) | 0.106*<br>(1.73) | 0.109*<br>(1.91) | 0.110**<br>(2.28) | 0.095*<br>(1.97) | 0.104<br>(1.36) | 0.002<br>(0.82) |
| Control variables | Size<br>(t-statistic) | -0.000<br>(-0.14) | -0.000<br>(-0.02) | -0.000<br>(-0.19) | -0.000<br>(-0.27) | -0.000<br>(-0.28) | 0.000<br>(0.49) |
| | Age<br>(t-statistic) | -0.004<br>(-0.37) | -0.006<br>(-0.63) | -0.002<br>(-0.40) | -0.000<br>(-0.51) | -0.004**<br>(-1.26) | -0.010***<br>(-2.82) |
| | Capital_expenditure<br>(t-statistic) | 0.389**<br>(2.50) | 0.061<br>(0.62) | 0.778<br>(0.22) | 0.123<br>(0.88) | 0.293***<br>(3.12) | 0.182*<br>(1.90) |
| | Government_subsidy<br>(t-statistic) | -0.045<br>(-0.02) | 1.898<br>(1.46) | 0.818<br>(0.31) | -1.443<br>(-0.47) | 0.066<br>(0.05) | 0.243<br>(0.13) |
| $R^2$ | | 10.8% | 12.6% | 14.8% | 11.0% | 16.7% | 13.0% |
| Adjusted $R^2$ | | 4.9% | 6.8% | 9.2% | 6.9% | 10.2% | 7.2% |
| F Statistic | | 1.83 | 2.18 | 2.62 | 2.31 | 2.67 | 2.26 |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

**Definition:**

| | |
|---|---|
| Net_loan | The difference between loans by controlling shareholders to listed subsidiaries and loans by listed subsidiaries to controlling shareholders scaled by lagged (-1) total assets; loans guarantees should not be included, if not executed |
| Operating_items | The RPTs other than loans, including the sales and/or purchases of goods, products, and services; non-monetary assets; royalties; administrative overheads and leases |
| Size | The beginning-year total assets (billion Chinese ¥) |
| Age | The difference between the establishment year and the IPO year |
| Capital_expenditure | The capital investment (adjusting for depreciation charges) scaled by lagged (-1) total assets |
| Governmental_subsidy | The governmental subsidy received, including tax refunds, and project- specific government grants scaled by lagged (-1) total assets |

## Table 8: Long-term Stock performance (BAHRs) regressed on Post-IPO RPTs

$$BAHR_i = \beta_0 + \beta_1 * Net\_Loan_i + \beta_2 * Operating\_items_i + \beta_3 * Size_i + \beta_4 * Age_i + \beta_5 * Capital\_expenditure_i + \beta_6 * Government\_subsidy_i + \varepsilon_i$$

$$CAR_i = \beta_0 + \beta_1 * Net\_Loan_i + \beta_2 * Operating\_items_i + \beta_3 * Size_i + \beta_4 * Age_i + \beta_5 * Capital\_expenditure_i + \beta_6 * Government\_subsidy_i + \varepsilon_i$$

| | | Coefficients | | |
|---|---|---|---|---|
| | | ***Predicted Sign*** | ***Model one*** | ***Model two*** |
| | Intercept<br>(t-statistic) | +/- | -0.078<br>(-0.78) | -0.113<br>(-0.92) |
| RPT variables | Net_loan<br>(t-statistic) | + | 0.458**<br>(2.52) | 0.371*<br>(1.76) |
| | Operating_items<br>(t-statistic) | + | 0.219***<br>(5.48) | 0.188***<br>(4.06) |
| Control variables | Size<br>(t-statistic) | - | 0.000<br>(0.09) | 0.000<br>(0.00) |
| | Age<br>(t-statistic) | - | -0.010<br>(-0.61) | -0.006<br>(-0.33) |
| | Capital_expenditure<br>(t-statistic) | + | -0.123<br>(-0.85) | 0.006<br>(0.03) |
| | Government_subsidy<br>(t-statistic) | + | -0.297<br>(-0.18) | -0.500<br>(-0.27) |
| $R^2$ | | | 33.6% | 21.0% |
| Adjusted $R^2$ | | | 28.7% | 15.5% |
| F Statistic | | | 7.17 | 3.83 |

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

**Definition:**

| | |
|---|---|
| BAHR | The benchmark-adjusted post-IPO Buy-and-hold return calculated starting from the second trading year up to four years in event time |
| CAR | The benchmark-adjusted post-IPO Cumulative Abnormal return calculated starting from the second trading year up to four years in event time |
| Net loan | The aggregate amount of loans by controlling shareholders to listed subsidiaries net of loans by listed subsidiaries to controlling shareholders between Y (0) year and Y (+3) year scaled by lagged (-1) total assets |
| Operating items | The aggregate amount of operating RPTs between Y (0) year and Y (+3) year scaled by lagged (-1) total assets |
| Size | The total assets (billion Chinese ¥) at the end of the IPO year |
| Age | The difference between the establishment year and the IPO year |
| Capital expenditure | The aggregate amount of capital investment (adjusting for depreciation charges) between Y (0) year and Y (+3) year scaled by lagged (-1) total assets |
| Governmental subsidy | The aggregate amount of governmental subsidy received between Y (0) year and Y (+3) year scaled by lagged (-1) total assets |

## Table 9: Related party transactions segregated by the characteristics of the IPOs

Panel A: State-controlled v.s. Non state-controlled

| Portfolios | Stock counts | Types of RPTs | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year | Post-IPO Average |
|---|---|---|---|---|---|---|---|---|---|
| Non state-controlled IPOs | 39 | Net loans | 1.71% (0.71) | -0.69% (-0.77) | -1.39% (-1.35) | -0.85% (-1.10) | -1.88%** (-2.24) | -0.43% (-1.46) | -1.14%** (-2.95) |
| | | Non-loan RPTs | 8.87%*** (3.13) | 13.03%** (2.09) | 8.56%*** (3.47) | 13.25%** (2.31) | 7.47%** (2.61) | 5.04%*** (3.69) | 8.58%*** (3.58) |
| State-controlled IPOs | 200 | Net loans | 0.22% (0.47) | -4.35%*** (-4.30) | -3.57%*** (-4.03) | -2.47%*** (-3.36) | -3.06%*** (-3.55) | -2.13%*** (-3.02) | -2.81%*** (-4.14) |
| | | Non-loan RPTs | 23.21%*** (5.00) | 26.46%*** (5.49) | 16.96%*** (5.83) | 18.33%*** (5.67) | 15.25%*** (5.34) | 19.88%*** (4.89) | 17.61%*** (5.92) |

Note: State-controlled represents the IPO firms that are ultimately controlled by the state at the end of the IPO year

Panel B: Ownership concentration

| Portfolios | Stock Counts | Types of RPTs | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year | Post-IPO Average |
|---|---|---|---|---|---|---|---|---|---|
| Ownership ≤30% (least concentrated) | 9 | Net loans | -0.55% (-1.45) | -1.52% (-1.37) | -1.15%* (-2.02) | -0.67%* (-2.01) | -0.17% (-0.73) | -0.17% (-0.71) | -0.55%* (-2.16) |
| | | Non-loan RPTs | 2.15% (1.53) | 1.90% (1.31) | 1.25% (1.11) | 0.70% (1.89) | 11.77% (1.03) | 2.53% (1.28) | 4.06% (1.27) |
| 30%<Ownership<50% | 31 | Net loans | 3.36% (1.15) | -0.22% (-0.16) | -4.63% (-1.40) | -2.21% (-1.46) | -2.36%* (-1.84) | -0.07% (-0.13) | -2.56%* (1.80) |
| | | Non-loan RPTs | 14.81%* (1.95) | 7.57%** (2.41) | 6.01%** (2.32) | 5.28%** (2.25) | 4.16%** (2.22) | 8.93%* (2.11) | 6.61%*** (3.10) |
| Ownership≥50% (most concentrated) | 199 | Net loans | 0.09% (0.17) | -4.37%*** (-4.35) | -3.10%*** (-3.98) | -2.27%*** (-3.16) | -3.07%*** (-3.59) | -2.20%*** (-3.13) | -2.63%*** (-4.04) |
| | | Non-loan RPTs | 22.67%*** (4.97) | 27.80%*** (5.70) | 17.69%*** (6.12) | 20.11%*** (6.05) | 15.55%*** (5.46) | 19.43%*** (4.80) | 17.99%*** (6.12) |

Note: Ownership denotes the percentage of shares held by the controlling shareholder in the listed firm at the end of the IPO year

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

## Table 9: Related party transactions segregated by the characteristics of the stocks (continued)

Panel C: Independence of the board of directors

| Portfolios | Stock counts | Types of RPTs | Y (-1) Year | IPO Year | Y (+1) Year | Y (+2) Year | Y (+3) Year | Y (+4) Year | Post-IPO Average |
|---|---|---|---|---|---|---|---|---|---|
| Percentage ≤30% (more independent) | 88 | Net loans | 0.52% (0.65) | -0.71% (-0.96) | -1.74%* (-1.72) | -1.05% (1.56) | -1.30%* (1.98) | -0.94%* (1.86) | -1.33%** (-2.71) |
| | | Non-loan RPTs | 10.99%** (2.71) | 12.75%*** (3.17) | 7.86%*** (3.97) | 13.23%*** (3.71) | 7.41%*** (3.58) | 6.05%*** (4.16) | 8.76%*** (4.22) |
| 30%<Percentage<50% | 65 | Net loans | 1.41% (1.04) | -2.15% (-1.58) | -1.47%** (-2.19) | -2.15%* (-1.94) | -2.54%** (-2.12) | -2.57%* (-1.99) | -1.85%** (2.09) |
| | | Non-loan RPTs | 21.08%** (2.55) | 21.86%*** (3.34) | 15.64%*** (3.63) | 16.26%*** (3.16) | 15.77%*** (3.03) | 25.06%** (2.75) | 16.85%*** (3.59) |
| Percentage≥50% (less independent) | 86 | Net Loans | -0.32% (-1.00) | -8.11%*** (-4.37) | -6.07%*** (-3.55) | -3.43%** (-2.50) | -4.74%*** (-2.82) | -2.24%* (-1.87) | -4.53%*** (-3.24) |
| | | Non-loan RPTs | 29.55%*** (4.05) | 37.98%*** (4.06) | 23.51%*** (4.28) | 22.86%*** (3.88) | 19.35%*** (3.84) | 23.32%*** (3.78) | 23.51%*** (4.14) |

Note: Percentage denotes the proportion of board members (at the end of the IPO year) who represent the controlling shareholder, and hold a senior position in the controlling shareholder's entity simultaneously.

* ** *** Denote significance (2-tailed) at 0.10, 0.05 and 0.01 level, respectively

**Definition:**

| | |
|---|---|
| Post-IPO Average | The mean amount of operating performance between the IPO (+1) year and the Y (+4) year |