# **Tunneling or Propping:** Evidence from Connected Transactions in China<sup>\*</sup>

# Winnie Peng

Department of Finance Hong Kong University of Science and Technology Clear Water Bay, Kowloon, Hong Kong Email: pengq@ust.hk Tel: (852)-2358-1096; Fax: (852)-2358-1749

# K.C. John Wei

Department of Finance Hong Kong University of Science and Technology Clear Water Bay, Kowloon, Hong Kong Email: johnwei@ust.hk Tel: (852)-2358-7676; Fax: (852)-2358-1749

Zhishu Yang Department of Economics Tsinghua University Beijing, PRC Email: yangzhsh@em.tsinghua.edu.cn Tel: (86-10)-6277-1769; Fax: (86-10)-6278-5562

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# Abstract

Friedman et al. (2003) develop a simple model in which, in equilibrium, controlling shareholders may choose either tunneling or propping depending on the magnitude of an adverse shock and the magnitude of the private benefit of control. In this paper, we provide direct empirical evidence to test the implications of the model by studying connected transactions in China. We argue that when a listed firm is in sound financial conditions, controlling shareholders are more likely to use connected transactions to expropriate the listed firm to benefit other member firms (i.e., tunneling); on the other hand, when a company is facing the risk of delisting or losing rights to issue new equities, controlling shareholders are more likely to use connected transactions to prop the listed firms so that they can continue to enjoy the private benefit of the listing status or to access to the financial market (i.e., propping). The results from the connected transaction data during the 1998 – 2004 period support our hypotheses. More specifically, we find that there is a negative market reaction to connected transactions announcements, when the listed firms are in sound financial conditions, which supports the tunneling argument. In contrast, we find that there is a positive market reaction to the announced connected transactions, when the listed firms face the risk of delisting, which supports the propping argument.

### JEL classification: G34, G32, G38

Keywords: Connected transactions; tunneling; propping; Chinese listed firms

# 1. Introduction

There has been strong empirical evidence showing that controlling shareholders can take advantage of their group structures through connected transactions, especially in emerging markets where legal protection of investors is weak. La Porta et al. (1997, 1998, 1999, 2000), Johnson et al. (2000) and Glaeser et al. (2001) find that controlling shareholders can extract private benefits through "tunneling." The expropriation of minority shareholders includes activities ranging from outright theft to selling assets or products at lower than market prices to a firm in which they have higher stake, or buying at high price from the firm. However, since Asian financial crisis of 1997-1998, more and more evidence suggests controlling shareholders can also use private resources to "prop up" the firm that is in trouble.<sup>1</sup> That is, they temporarily transfer resources to the firm to boost the performance so that default or delisting is avoided. Thus, tunneling and propping are the two major purposes for controlling shareholders to engage connected transactions within their business group.<sup>2</sup> They can both exist in the same company but during different time periods. The question is when and how much controlling shareholders are likely to choose tunneling or propping.

Friedman et al. (2003) develop a simple model in which it is optimal for controlling shareholders to prop when there is a moderate adverse shock so that the firm stays in business. If there is no shock or the shock is too small, controlling shareholders will choose to tunnel. Looting (i.e., the controlling shareholders take everything out of the firm and the firm collapses),

<sup>&</sup>lt;sup>1</sup> The Salim group sold privately held assets in the Netherlands in order to bail out publicly listed operations in both the Philippines and Indonesia (Anon, 1998). The group also injected funds from a publicly listed Hong Kong company into a publicly listed Indonesian company (Anon, 1999a). The chairman of Samsung Electronics who's also head of the family that controls Samsung Group, donated some of his personal wealth to pay off the debts of Samsung Motors Inc, which was a subsidiary on the verge of bankruptcy in summer 1999 (Anon, 1999b).

<sup>&</sup>lt;sup>2</sup> Besides tunneling and propping, there's also a "value-added" view towards the connected transactions in literature, which suggests that the connected transactions can reduce the transaction cost and facilitate efficient resource allocation within the group (Shin and Park, 1999; Khanna and Palepu, 1997, 2000; Kim 2002). "Propping" is different from "value-added" because propping is to boost the performance temporarily, it's usually not able to have real value added to the firm in the long run.

the extreme case of tunneling, would occur when the negative shock is too large.<sup>3</sup> To test the model empirically, the authors use the evidence from the stock price performance during the Asian financial crisis of 1997-1998. The evidence is broadly supportive of the idea that propping exists. The authors suggest that issuing debt can credibly commit propping and it is easier for Asian firms in pyramids to prop. They find that pyramid firms with more debt experienced smaller stock price declines during the crisis.

Friedman et al., (2003)'s model provides us fundamental understanding of the nature of tunneling and propping. However, as also mentioned in their paper, direct empirical evidence of propping is lacking and there is no evidence of tunneling in their paper too. Continuing with their efforts, this paper tries to provide direct evidence for both tunneling and propping by studying connected transactions in China – a direct means for Chinese controlling shareholders to engage tunneling or propping. The uniqueness of the ownership structure of Chinese firms and the stock market regulations in China enable us to understand the timing and the size of tunneling and propping within the same firm, which is hard to observe and to be tested in other countries.

In China, a large number of listed firms are restructured from existing state-owned enterprises (SEOs) through "carve out," under which part of a business group is carved-out to set up the to-be-listed firm and the original business group remains as the parent firm. The government controls the majority of these SEO shares through different government agencies. Due to this unique ownership structure, connected transactions are almost as common as a daily routine for the majority of the listed firms. Statistics show that out of 719 listed firms in 1997, 609 firms were involved in different degrees of connected transactions, which is 84.6% of listed firms. In 2000, this number reached to 93.2% (www.forumcn.com, 2003-10-9). Among those connected transactions, above 70% were conducted between the controlling shareholders and

<sup>&</sup>lt;sup>3</sup> For details of the model, please find on page 742-745 of Friedman et al., (2003).

their listed firms. Evidence indicates that the current corporate governance system in China fails to constrain controlling shareholders from tunneling through connected transactions when the firm in sound financial conditions.

However, sometimes, controlling shareholders may want to prop up their listed firm, when it is in financial difficulty so that they can continue to enjoy the private benefit of the listing status or to access to the financial market in the long run. In China, firms face two types of risk after they get listed, which is quite unique only in the Chinese stock markets: delisting and the loss of rights to issue new equity. According to the guidelines introduced by the CSRC (China Securities Regulatory Commission) in 1999, a listed firm will be designated as a special treatment (ST) firm if it reports a net loss for two consecutive years and a particular transfer (PT) firm if it suffers a net loss for three consecutive years. PT itself entails virtual suspension of trading. Further, if a PT firm cannot become profitable in one year, it will be completely delisted.<sup>4</sup> In 2003, the CSRC introduced a new designation called "\*ST," which is designated to a firm if it reports a net loss for two consecutive years. It is similar to ST, but without the transition PT period. In order to obtain the right to issue new equity, listed firms are required to maintain a minimum ROE of 6% for three consecutive years. In addition, the average ROE over these three years must be no less than 10%. Since the competition for the listing quota is rather fierce, controlling shareholders would suffer a huge loss of private benefits from delisting. As a result, they have strong incentives to "prop up" their listed firms that are near those thresholds.

<sup>&</sup>lt;sup>4</sup> For as ST firm, its stock is traded with a 5% price change limit each day compared with a 10% for a normal stock. In addition, its midterm financial reports must be audited. Finally, if an ST company continues to suffer losses for one more year, it is designated a PT firm. A PT stock can only be traded on Friday, with a maximum 5% upside limit to last Friday's close, but no restriction on the downside. A PT firm will be delisted if it cannot become profitable within one year. Start from 2002, the PT designation was cancelled by the CSRC. Thus, if a company suffers losses for three consecutive years, it will be de-listed without a PT period.

With the help of the unique delisting and rights issuing regulations in China mentioned above, in this paper, we are able to differentiate firms in sound financial conditions when controlling shareholders have strong incentive to tunnel from firms in poor financial conditions when controlling shareholders are more likely to prop. Generally speaking, when a firm is designated as ST, PT or \*ST, it is in poor financial conditions and it is facing the risk of delisting. When a firm is in a time period during which it successfully obtain the right to issue new shares, it must be in healthy financial conditions since neither the risk of delisting or the risk of losing rights to issue new shares exists. It is important to note that, in other conditions when a firm does not face the risk of delisting or losing rights to issue new shares, the incentives of tunneling or propping is less clear to identify. If a firm does not need or intend to issue new shares, tunneling is likely to occur. If a firm needs to issue new shares in the near future, to meet the issuance requirements, it is more likely for the controlling shareholders to prop up the firm rather than to tunnel.

Based on the above classifications of financial conditions we examine the tunneling or propping behavior of the firm using the information from the announced connected transactions in Chinese listed firms. We classify the firms during the 1998-2004 period into three categories: sound financial conditions, poor financial conditions and the rest. We also classify the transactions into two types: connected transactions and non-connected ones. Finally, we further group these transactions into different: asset acquisitions, asset sales, asset displacements, cash payments, equity transfer, and others. We examine the market reactions to each of these transactions. We hypothesize that the market will react favorably when investors perceive that the controlling shareholders have incentives to prop, i.e., when their financial condition is poor and it is a connected transaction. In contrast, we expect that the market will react unfavorably when investors perceive that the controlling shareholders have incentives to tunnel, i.e., when their financial conditions are sound and the transaction is connected. Our results in general support our hypotheses. In particular, we find that there is a negative market reaction to connected transactions announcements, when the listed firms are in sound financial conditions and that there is a positive market reaction to the announced connected transactions when the listed firms face the risk of delisting or losing the rights to issue new shares.

The paper proceeds as follows. Section 2 discusses the background of our study and the main hypotheses. Section 3 describes the data and the methodology. Section 4 provides abnormal returns of different transactions and reports results from cross-sectional regressions. Section 5 summarizes and concludes the paper.

#### 2. Background and Hypothesis Development

#### 2.1 Overview of the Chinese stock market

The Chinese stock market was initially organized by the government to partially privatize its state-owned enterprises (SOEs) to raise capital and improve operating performance. Since its inception in 1991, the Chinese stock market has grown exponentially to become the eighth largest in the world with a market capitalization of around US\$600 billion by the end of October 2005. As at the end of October 2005, there are 878 companies listed in Shanghai Stock Exchange and 543 in Shenzhen Stock Exchange with a combined total of 1,421. The listed (tradable) shares are classified according to the residency of their owners as domestic (A shares) or foreign (B, H and N shares).<sup>5</sup> However, the majority of A-shares owned by the government or

<sup>&</sup>lt;sup>5</sup> A-shares are available exclusively to Chinese domestic investors, and are denominated in the Chinese currency, RMB. Originally, B-shares, which are denominated in U.S. dollars in Shanghai Stock Exchange and in Hong Kong dollars in Shenzhen Stock exchange, were only available for trading by non-residents. However, the B-share market was opened to individual domestic investors in 2001 if they had foreign currencies. Chinese firms have been

its agencies are not tradable. Recently, the government initiated a program, called share structure resolution, to resolve the issue of non-tradable shares. To exchange the rights for non-tradable A-shares to become tradable, the holders of non-tradable A-shares will give part of their shares free of charge to the holders of the corresponding tradable A-shares. A typical holder of non-tradable A-shares will receive 2-3 shares for every 10 shares.

Since the primary objective of developing equity markets in China is to facilitate external financing for the partially privatized SOEs, regulations have been asymmetrically in favor of the SOEs or firms with close ties to central or local government. Specifically, until recently, access to listing in the Chinese stock market was strictly administrated by the government. For example, the listing quota was allocated to provinces or ministries according to certain criteria. Firms in protected industries or with close ties to government had a great advantage over other firms in winning the right to go public. Because of policy constraints, competition for the rights to go IPO for a listing is fierce. As a result, the listing status of a public firm carries significant value.

Another consequence of such a policy practice is that the ownership of Chinese listed firms is highly concentrated in the hands of the government. On average, state-owned shares and legal person shares (indirectly owned by governments) account for 70% of the total number of shares in Chinese listed firms. Furthermore, the largest shareholder (in 80% of the cases) controls more than 40% of listed firms' shares, while the second largest shareholder owns less than 10% of these shares. State and legal person shares cannot be traded on the exchanges, but can be transferred to domestic corporations, typically another government agency, when approved by the CSRC.

permitted to list their stocks on the Stock Exchange of Hong Kong (SEHK) as H-shares since 1993. N-shares are traded in U.S. stock exchanges, normally the New York Stock Exchange, in the form of American Depository Receipts (ADRs).

# 2.2 Related part transactions in China

A connected transaction is generally defined as any transaction between a firm (or any of its subsidiaries) and a connected person. Connected persons are the listed firm's (or the subsidiary's) substantial shareholders, the directors, the chief executive and their associates, including any firm where the above hold a substantial shareholding. The definition also applies to any person co-habiting with the above and close relatives (such as spouses, parents, step-parents, brothers/sisters, step-brothers/sisters, and in-laws). The listed firm's major connected parties include its shareholders (the parent firm usually is the largest shareholder and also the controlling shareholder), its shareholders' affiliates and its own affiliates. Another important connected party is the affiliated firms where the listed firms own 5% to 50% shares and thus can exert significant influence over them but do not consolidate them into their financial statements.

There are many different types of connected transactions in China, including asset acquisitions, asset sales, asset displacements, equity transfer, cash payments, cash receipts, asset leases, loan guarantees, trademark rights transfer, etc. The common transactions are tangible asset and equity transactions. However, intangible asset transactions, such as trademark rights transfer, have become popular recently.

Due to the fact that in China only around 30% of listed firms' shares are publicly tradable, and that the controlling shareholders normally hold more than 40% of total shares, controlling shareholders are rarely challenged by other shareholders on important issues. Minority shareholders cannot take listed firms to court, due to limitations in the civil law, and a lack of punishment spectrum in the current securities laws. Listed firms, therefore, are the nexus of a series of connected transactions carried out for the benefit of the controlling shareholder. Since 1997, the Ministry of Finance and the CSRC have issued several accounting rules and regulations regarding connected transactions. Connected transactions of a total value greater than RMB1 million (US\$ 121,000) or 0.5% of net assets, whichever is higher, must be reported to the exchange within two working days following the signing of the contract, and must be disclosed in the firm's annual report. However, enforcement of the rules is weak because the CSRC lacks the necessary investigative and prosecuting power and resources

#### 2.3 Main hypotheses

Tunneling is related to the agency problem between controlling shareholders and minority shareholders. If the lack of corporate governance mechanisms allows controlling shareholders to care less for their minority shareholders and to pay more attention to their own wealth, then the group has the potential to provide controlling shareholders with opportunities to waste corporate resources and benefit themselves. Jian and Wong (2003) document that a group-controlled firm within the material industry in China is more likely to use connected transactions to manipulate earnings and tunnel firm value. Liu and Lu (2004) find that earnings management in Chinese listed firms is mainly induced by controlling owner's tunneling activity. Cheung et al. (2005) further find that minority shareholders in firms conducting connected transactions with SOEs end up significantly worse off than those in firms conducting connected transactions with non-SOEs. All of them support tunneling exists in China. One example of such kind of transaction is Tuopu Software listed on Shanghai Stock Exchange (stock code 000583), which reported above 50% of net income decrease in year 2003, due to the unfair connected transactions with the controlling shareholder. The total market value of the transactions was worth up to RMB700 million during the year, most of which had been expropriated by the controlling shareholder.

Thus, when the firms are in sound financial condition and facing no risks, connected transactions can provide direct opportunities for connected parties to extract cash from listed firms (by selling assets, goods, or services to the firm through self-dealing transactions), to obtain loans on preferential terms, to transfer assets from the listed firm to other firms under their control, or to dilute the interests of minority shareholders by acquiring additional shares at a preferential price. Thus we expect a negative market reaction for the listed firm when the transaction is made between the firm and its connected parties.

*H1:* When the listed firms do not face the risk of delisting and the loss of rights to issue new shares, the market will react negatively to the announcements of connected transactions.

But the controlling shareholders do not always tunnel. When the firm is in financial distress, the controlling shareholders have incentive to prop up the firm in order to maintain control of the firm and protect their future benefits. That is the reason Bai, Liu and Song (2004) find that ST firms in China have generated 31.8 percentage points of abnormal stock market performance over the two years after being designated, which reflects the price paid by their controlling shareholder in resources commitment in order to gain control over and save the firms. One example of propping is ST ZhongQiao listed on Shanghai Stock exchange (stock code 000047), which sold one of its assets to the controlling shareholder at the price of RMB 95 million. However, the asset was only worth RMB 2.01 million. As a result, ST ZhongQiao successfully got rid of the risk of being delisted.

Thus, when the firms are in bad financial condition, the controlling shareholders are likely to provide temporary support to the firm, such as to buy the asset from the listed firm with a higher price, to inject good asset to it with bad asset in return, and to provide loans with favorable interests. As a result, the listed firm will have a higher ROE in order to get rid of special designation. Thus, we expect a positive market reaction for the listed firm when the transaction is made between the firm and its connected parties. However, the "prop up" behavior should not be long-term. The controlling shareholders temporarily "help" the listed firms just because they are afraid of losing private control benefits or the ability of equity financing after their listed firms are de-listed or lose the right to issue new equity.

*H2:* When the listed firms face the risk of delisting, the market will react positively to announcements of connected transactions<sup>6</sup>.

#### 3. Data and Methodology

### *3.1 Descriptive summary*

Our sample consists of non-financial firms that are listed on the SHSE and SZSE during the 1998-2004 period. We initially obtain information on both connected and non-connected transactions from three major sources: Shenzhen GTA Information Technology Corporation, Beijing Sinofin Information Service, and Shenzhen Bloomberg Database Corporation. We the manually identify each transaction's characteristics. There are over 8,000 transactions available during this period. Due to the weak enforcement for disclosure, many firms in the early years only disclosed the connected transactions in the annual reports without any announcements at the time when the transactions took place. As a result, we simply drop those cases in earlier years, because it is not clear when the information is known to outside investors. We then eliminate those cases in which the transaction value is lower than 5 percent of the total asset. We also delete the transactions when a firm has more than one transaction within one month. This screening process results in a final sample of 1,980 transactions, in which 1,311 transactions are

<sup>&</sup>lt;sup>6</sup> Note that the hypothesis doesn't include the situation when firms face the risk of loss of rights to issue new shares, because it's not easy for outside investors to perceive the need of issuing new shares so that the stock prices may not be able to reflect the situation, while it's public information that the firm is designated as ST, PT or \*ST.

connected transactions, and 669 transactions are non-connected transactions. Many firms are involved in more than one transaction. As a result, the number of sample firms is 787, about 60% of total listed firms in China by the end of year 2004.

We identify the year during which the firm successfully obtains the right to issue new shares. This is the period that the firm does not face the risk of losing the rights to issue new shares, which is called as the "Rights" period. We choose this classification for the following two reasons: First, if the firm obtain the issuing right, the previous three years' performance should be good (on average above 10% ROE per year), according to the requirement of issuing new shares. Second, in general, a-half year before the firm receives the approval to issue new shares, it needs to make an announcement of intention to issue new shard to the public. Thus, the possibility and the news of issuing new shares is known by the public during that year, which could be more or less reflected in the stock price at that time. For a robustness check, the period without the risk of losing the rights to issue new shares is also expanded to include the following year after rights issuing, or shortened to within the year of the rights issuing. The rest of the period without the ST, PT or \*ST designation or without issuing new shares is called the "Others" for the firm.

Panel A of Table I summarizes the firms and the connected and non-connected transactions by industry. Panel B of Table I classifies the transactions in details.

#### [Insert Table I Here]

From Panel B, we can see that the sample size is larger in year 2001, 2002 and 2003 than in other years. For the earlier years, since many transactions were disclosed only in annual reports, we simply dropped them. The sample size is also small in year 2004 due to the data availability.

We first classify the transactions into five categories at the moment: asset acquisitions, asset sales, asset displacements, cash payments, and equity transfer. We will also include other categories later. For connected transactions, except for cash payment, the other three categories are evenly distributed. For non-connected transactions, asset sales has the highest frequency (305), followed by asset acquisitions (178) and equity transfer (141). When the transaction is classified by the firm's financial condition, 358 transactions are taken place when the firms are designated as ST, PT or \*ST, 119 transactions are carried out during the "Rights" periods, and 1,503 transactions are conducted during other periods. The majority of the transactions are conducted by firms that issue A-shares alone with a total of 1,844, and the remaining 136 transactions are carried out by firms that issue not only issue A-shares but also B-shares or H-shares. Finally, 1,694 transactions are conducted between the listed firms and their controlling SOE shareholders or other SOEs, while only 286 cases are with non-SOEs.

#### 3.2 Cumulative Abnormal Returns

We obtain the stock price data of the listed firms from the daily return file and the market index return file of the CSMAR Database -- Database of financial data and marketing data of China capital market -- which includes all firms listed on the two exchanges in China. We select the initial board meeting announcement dates of the transactions as the public announcement dates. If the announcement is made after trading closes, we choose the next trading day as the announcement date.

We use standard event study methodology to measure the market reaction to the transactions. We implement the test procedure by computing ex post abnormal returns ( $AR_{it}$ ) as

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}), \qquad (1)$$

where  $R_{it}$  and  $R_{mt}$  are the daily return of the firm associated with transaction *i* at time *t* and the daily market index return at time *t*, respectively. We use the Chinese Composite Stock Price Index return as the market index return. The coefficients  $\hat{\alpha}_i$  and  $\hat{\beta}_i$  are ordinary least squares estimates of the intercept and slope, respectively, of the market model regression. To compute the abnormal returns, we estimate the transaction specific parameters  $\hat{\alpha}_i$  and  $\hat{\beta}_i$  with an ordinary least squares regression, using 200 daily returns beginning with day t = -220 and ending with t = -21 relative to the announcement date.

We construct the cumulative abnormal return ( $CAR_i$ ) between any two dates  $T_1$  and  $T_2$  as

$$CAR_i(T_1, T_2) = \sum_{t=T_1}^{T_2} AR_{it}$$
, (2)

and we compute the sample cross-sectional average cumulative abnormal returns  $(ACAR(T_1,T_2))$  as

$$ACAR(T_1, T_2) = \frac{1}{N} \sum_{i=1}^{N} CAR_i(T_1, T_2).$$
(3)

We use the *t*-statistic to test the hypothesis that the average *CARs* over any given interval are equal to zero.

### 3.3 Variables used in regressions

Our empirical test evaluates whether connected transactions are associated with certain firm characteristics that can be proxies for "propping" or "tunneling." More specifically, we examine whether the announcement effect of a transactions is associated with variables that are used to proxy for the probability of propping or tunneling as represented by the following regression model<sup>7</sup>:

 $CAR = \alpha + \beta_{1}STPT + \beta_{2}Rights + \beta_{3}Transaction value$  $+ \beta_{4}Transaction value * STPT + \beta_{5}Transaction value * STPT * Connected$  $+ \beta_{6}Transaction value * Rights + \beta_{7}Transaction value * Rights * Connected$  $+ \beta_{8}Leverage + \beta_{9}Tobin's q + \beta_{10}ABH + \beta_{11}State - owned + \varepsilon$  (4)

where the explanatory variables are discussed in detail as follows:

*STPT*: A dummy variable that equals to 1 when the listed firm is designated as ST, PT or \*ST firm, 0 otherwise. It indicates the bad financial condition of the firm and is also put in interaction terms with other variables.

*Rights*: A dummy variable that equals to 1 during the year when the listed firm gets the right to issue new shares, 0 otherwise. It indicates the sound financial condition of the firm and is also put in interaction terms with other variables.

*Connected* is a dummy variable that equals to 1 when the transaction is connected and is 0 when it is non-connected. It usually appears in interaction terms with other variables.

*Transaction value* is the transaction value divided by total assets of the firm at the beginning of the year. We expect a stronger market reaction to a larger transaction value. The direction of the reaction would depend on which period the firm is in when the transaction takes place. According to our hypothesis, when the firm is in the ST, PT, or \*ST period, the reaction of connected transaction would be positive; when the firm is in the period of issuing new shares, the reaction of connected transaction would be negative. That is, we expect a positive coefficient  $\beta_5$  of it's interaction term *Transaction value* \* *STPT* \* *Connected* , and a negative coefficient  $\beta_7$  of it's interaction term *Transaction value* \* *Rights* \* *Connected* .

<sup>&</sup>lt;sup>7</sup> Two variables *ROE* and *Cash* are not shown here, which are used for robustness test to replace *STPT* in Table V.

*ROE* is return on book value of equity at the beginning of the year. This variable indicates the financial performance of the firm before the transaction takes place. It could become another possible indicator of which period the firm is in, since ROE is the crucial ratio for the CSRC to decide whether to designate ST, PT, \*PT to a firm or whether to approve it to issue new shares. It is used for robustness check to replace *STPT*. We expect a negative relation between *CAR* and *ROE*.

*Cash* is total available cash divided by total assets at the beginning of the year. This indicates how much cash the firm generates before the transaction takes place. *Cash* can affect the controlling shareholders' decision on how much they would extract from or inject to the firm. It is also used for robustness check to replace *STPT*. We expect a negative relationship between Cash and *CAR*.

*Leverage* is total liabilities divided by total assets at the beginning of the year. We regard this as a control variable to control for the financial condition of the firm. Generally, if the leverage is too high, the firm will be at the high risk of being bankruptcy. Thus, we expect a positive market reaction to the connected transaction would be occurred when the leverage is high, since the controlling shareholder would have stronger incentives to support the firm. Thus, we expect a positive relationship between leverage and *CAR*, which suggests that  $\beta_8 > 0$ .

*Tobin's q* is the sum of market value of equity and book value of liabilities to the book value of total assets at the beginning of the year. We use the share price that is 20 days before the announcement day of transaction to calculate the market value of equity. Tobin's q measures the growth opportunity of the firm. When a firm has higher growth opportunity, it is more likely that the firm will tunnel the firm's assets. We therefore expect a negative relationship between Tobin's q and CAR, i.e.,  $\beta_9 < 0$ .

*ABH*: A dummy variable that equals to 1 when the listed firm also issues B shares or H shares, 0 when it doesn't issue H or B shares. The Chinese listed firms are uniformly regulated by Chinese jurisprudences. But the firms that have issued H shares or B shares must adopt international accounting standards. This dummy variable is used as a proxy for the effect of legal environment in enforcing corporate governance. We expect it will have positive effect on the market reaction.

*State-owned*: A dummy variable that equals to 1 when the transaction is between listed firm and the state-owned counterparty (in most of the cases, it is the controlling shareholder of the listed firm), 0 otherwise. The government may have goals such as maintaining employment and social stability rather than profit-maximization, so they will use the listed firm as a vehicle to meet these other policy goals that may conflict with shareholders' interests (see Bai, Li, Tao, and Wang, 2000). Therefore, we presume that governments as controlling shareholders have negative effect on the listed firms' market valuation.

Table II presents descriptive statistics for the above variables in our sample firms. These data are obtained from the Genius database issued by Shenzhen Genius Information Technology Ltd. We measure the variables at the beginning of the fiscal year during which the transaction takes place.

#### [Insert Table II Here]

In Table II we calculate the mean and the median for each variable. For our study purpose, we group the whole sample into 6 subsets: Connected & STPT, Non-connected & STPT, Connected & Rights, Non-connected & Rights, Connected & Others and Non-connected & Others. Such kind of grouping method is applied for the rest of the paper too. We also do the test of difference of the mean for the first four groups.

Several features are noteworthy. The size of transaction value as well as total assets is significantly the smallest in the STPT group, and the largest in Others group (especially Connected subset). The mean transaction value ratio of the full sample is 0.154, not quite different among the first four groups. Other variables have significant difference between Connected & STPT and Connected & Rights groups, and between Non-connected & STPT and Non-connected & Rights groups, among which leverage and Tobin's q are higher in the two STPT groups. However, the difference between Connected & Rights and Non-connected & Rights is not significant at all among all the variables.

# 4. Empirical Results

In this section, we examine announcement returns to evaluate the propping and tunneling views. We differentiate connected transactions from the non-connected ones, and we also differentiate the different conditions of the firms (STPT, Rights or Others) and types of transactions.

#### 4.1 Cumulative Abnormal Returns

Table III reports the CARs with different window lengths. In Panel A we report the results for the full sample, and also separate them into four different groups: Connected & STPT, Nonconnected & STPT, Connected & Rights, Non-connected & Rights, Connected & Others and Non-connected & Others for our study purpose. In Panel B we only keep the connected transactions in our sample. We study each transaction type separately, also state-owned connected party and non state-owned connected party separately, based on three different conditions of the firms.

#### [Insert Table III Here]

For the full sample, the average CAR(-5, 5), CAR(-10, 10) and CAR(1, 10) are -0.11, -0.95 and -1.19 percent, respectively. Generally we can see a decreasing cumulative abnormal return after the announcement of the transaction. The medians CARs show a similar pattern, which are not shown in the table.

The Connected & STPT group shows significantly positive results in nearly all the windows, while the Connected & Rights group shows significantly negative results in nearly all the windows. For example, for CAR(-5, 5), Connected & STPT group has a mean of 2.265, while Connected & Rights group has a mean of –2.820. In contrast, only part of the results for non-connected transactions in STPT, Rights or Others period is significant. The test of difference in means for the four groups shows much clearer results. The Connected & STPT group and Non-connected & STPT group yield significant difference in windows CAR(-1, 1), CAR(-3, 3) and CAR(-5, 5), the means are 1.417, 2.128, 2.265 and 0.540, 0.386, -0.312, respectively. The difference between Connected & Rights group and Non-connected & Rights group are even more significant in almost all the windows. The performance of Others group is in the middle level of the three periods.

The results in Panel A strongly support the two hypotheses mentioned at the beginning of the paper. The connected transaction will prop up the listed firms when they are facing the risk of being de-listed, while they will tunnel from the listed firms when they get the rights to issue new shards. In contrast, the non-connected transactions don't have very strong evidence to prop up or to tunnel from the listed firms.

Panel B only focuses on the connected transactions. We first study asset acquisitions, asset sales, asset displacements and equity transfer separately based on whether the firms are STPT,

Rights or Others, but for cash payments, due to the small sample size, we only calculate the overall means. We find asset acquisitions and asset sales both have significantly highest and positive CARs during STPT period, and lowest and negative CARs during Rights period. The means of cash payments' CARs are negative in almost all the windows, which is quite intuitive since cash payments to the connected party is definitely not beneficial to the listed firms. However, we don't find significant difference in asset displacements and equity transfer, but still shows more positive CARs during STPT period and more negative CARS during Rights period. The performance for the "Others" period is again, in the middle level of the three periods.

Besides studying each type, we also study state-owned connected party and non state-owned connected party separately. Both of them show big difference between STPT and Rights periods. But the connected transactions conducted by state-owned party yield a significant difference at 1 percent level in almost all the windows, while the non state-owned one has less significant difference, which suggest that the state-owned party has more incentive or power to conduct connected transactions based on different purposes.

The overall results of Table III strongly support the "tunneling" view for connected transactions in good period, and the "propping" view in bad period. All the types of connected transactions more or less show the same behaviors in either period. And state-owned connected parties have more power or incentive to conduct the connected transactions purposely.

To provide a more intuitive way to see the issue of "propping" or "tunneling", we plot the CARs from day -10 to day +10 around the event date for the six groups separately. Figure 1 shows the results and again supports our two hypotheses.

# [Insert Figure 1 Here]

# 4.2 Cross-Sectional Regression Analysis

To understand better the relationship between CARs and firms' characteristics, in this section we present the estimates from multivariate regressions. CAR(-5, 5) is chosen to be the dependent variable, since it represents the major trend in all the window lengths.

Table IV provides the overall and three periods' correlation matrices of the variables mentioned in the last section and together with the CAR(-5,5) separately.

### [Insert Table IV Here]

From the first matrix in Table IV, we find the dummy variable STPT has a correlation of - 0.294 with ROE, and -0.214 with Cash. Both are considered very high, which are intuitive as well. In order to avoid multicollinearity, the paper will test STPT, ROE and Cash separately in the regressions for robustness check.

Table V reports the regression estimates for the full sample. Regression model I regresses all the variables without interaction terms. The relation is not clear, for example, the coefficient of Rights is positively significant, which is counterintuitive. The transaction value as well as leverage is positively significant. Regression models II, III and IV test STPT, ROE and cash separately with interaction terms. The three regressions' results are quite robust. The interaction term Trans\*Connected\*STPT<sup>8</sup> is significantly positively related to the dependent variable CAR(-5, 5) at 1 percent level, which suggests when the firm is in bad financial condition, the market reaction towards connected transactions is positive, since investors perceived the controlling shareholders' motive for propping. The interaction term Trans\*Connected\*Rights is negatively related to the dependent variable CAR(-5, 5) at 10 percent level, which suggests when the firm is in sound financial condition, the market reaction towards connected transactions is negative, since investors perceived the controlling shareholders' motive for propping. The market reaction towards connected transactions is negatively related to the dependent variable CAR(-5, 5) at 10 percent level, which suggests when the firm is in sound financial condition, the market reaction towards connected transactions is negative, since investors perceived the controlling shareholders' motive for propping.

<sup>&</sup>lt;sup>8</sup> In interaction terms, "Trans" is short for transaction value.

of the coefficients of these two interactions terms are greater than those of the individual terms, which proves the information of whether the transactions are connected and which condition the firms are in is important to affect stock reaction. Of all the three regressions, almost none of the control variables like Leverage, Tobin's Q, ABH or State-owned has significant effect on the dependent variable, probably because they are lack of interaction terms to control for different conditions. In Regression model V we will try to address this issue.

#### [Insert Table V Here]

Regression model V in Table V is specially conducted to test Friedman et al., (2003)'s theory about debt, which argues issuing debt can credibly commit propping in countries with weak legal environments and in government-backed or bank-supported firms. Hence, in this model we add two interaction terms on Leverage: Leverage\*Connected\*STPT and Leverage\*Connected\*Rights. In the meantime, we add another two interaction terms on ABH which might indicate better corporate governance of the listed firm: ABH\*Connected\*STPT and ABH\*Connected\*Rights. The results strongly support Friedman et al., (2003)'s theory. Leverage\*Connected\*STPT is positively correlated with the dependent variable CAR(-5, 5) at 1 percent level, while Leverage\*Connected\*Rights is negatively correlated with the dependent CAR at 10 percent level. The evidence show that when firms are in bad condition, the higher the debt, the more likely propping would happen, thus the more positive the stock reaction would be. Interaction terms with transaction value remain significant as usual, but those with ABH are not significant at all, which suggest the ABH effect is not strong enough to change the motive of the controlling shareholders to tunnel or prop.

Table VI shows the regression results for the five different subsets of the sample: STPT, Rights, Others, Connected and Non-Connected.

### [Insert Table VI Here]

In the STPT subset, the interaction term Trans\*Connected significantly positive at 1 percent level, which again supports the "propping" view of the connected transactions when firms are in bad condition. The same interaction term is significantly negative at 1 percent level in the Rights subset and loses its significance in Others subset, which again supports the "tunneling" effect of the connected transactions when firms are in sound condition. Transaction value ratio is positively significant except in STPT subset but the significance level is not as strong as that of the interaction term. Cash is negatively significant in the Others subset, which means the higher the Cash, the lower the CAR will be, which shows some evidence of "tunneling" in Others subset.

In the Connected subset, the interaction term Trans\*STPT is significantly positive at 10 percent level and Trans\*Rights is significantly negative at 1 percent level, which again support the "propping" effect of connected transactions in bad condition and the "tunneling" effect in sound condition. Cash is negatively significant at 1 percent level and Leverage is positively significant at 1 percent level. The lower the cash and the higher the leverage is, the more possible for firms to face financial distress, then the more possible that the controlling shareholder will "prop up" the firm. The dummy variable "ABH" becomes negatively significant now. The possible explanation is, the firms issue B shares or H shares are more transparent in their transactions, they are less likely to take the connected transactions purposefully to prop up the listed firm. In the Non-Connected subset, none of the variables is significant except ABH. It now turns to be positively significant, which suggests that The B, H shares firm will take non-connected transactions whenever they think is good for the firm, plus they have no strong incentive or power to "tunnel" from the firm's through non-connected transactions.

Table VII shows the regression results for the four different subsets of the sample: asset acquisitions, asset sales, asset displacements and equity transfer. The cash payments subset is dropped since the sample size is too small.

# [Insert Table VII Here]

As shown in Table VII, the interaction term Trans\*Connected\*STPT only remains significant in the asset sales subset; and Trans\*Connected\*Rights loses its significance in all the subsets. Fortunately, the directions of the two interaction terms are the same as usual. The results may suggest that the type of the transactions is not a major cause to different market reactions. Firms can take each kind of transactions to prop up or tunnel. However, further detailed classifications of each type may be needed in future.

Overall speaking, the market reaction of the transactions is closely related to the firms' previous financial condition. The nature of the transactions, i.e., whether it is connected or non-connected, remains to be a key factor to the market reaction.

#### 5. Summary and Future research

In this paper we examine whether listed firms benefit from connected transactions, or whether such connected transactions provide a way for controlling shareholders to increase their wealth by increasing the value of other group firms (tunneling). We find a negative market reaction towards the connected transactions when the listed firms don't face the risks of being delisted and get the rights to issue new shares, which indicates the tunneling view; while a positive market reaction when the listed firms face those risks, which indicates the propping view. The non-connected transactions, in contrast, don't show quite different results between the two periods. And we cannot find significant difference in four types of transactions (asset acquisitions, asset sales, asset displacements and equity transfer) either as this stage.

There are several further issues that are waiting to be explored in our future research:

First, other types of transactions are needed to be introduced into the framework, such as cash receipts, asset leases, loan guarantees, trademark rights transfer, etc. We need to look into each type in more details.

Second, we will further explore the connected transactions associated with various corporate governance mechanisms in China, such as, whether CEO gets the compensation directly from the listed firm or from the controlling shareholder, whether the listed firm is local government controlled or central government controlled, whether the listed firm is audited by Big Four accounting firms or not, etc.

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# Table I

### Distribution of Firm by Industry, and Classification of Transactions

The sample comprises 1980 transactions of the firms listed on the SHSE and SZSE during the 1998-2004 periods. We measure all variables at the fiscal year of the announcement. We initially identify the sample from Shenzhen GTA Information Technology Co, Beijing Sinofin Information Service and Shenzhen Bloomberg Database Co. The industry classification is from the Genius database provided by Shenzhen Genius Information Technology Ltd.

Panel A: Firm Industry					
Industry	# of Firm	# of connected transactions	# of non-connected transactions	Total	Percentage
Agriculture	6	4	9	13	0.7%
Coal mining	9	17	3	20	1.0%
Manufacturing	420	683	252	935	47.2%
Power	32	39	28	67	3.4%
Construction	10	10	8	18	0.9%
Transportation	29	37	20	57	2.9%
Information technology	59	125	76	201	10.2%
Wholesale/Retail	90	142	113	255	12.9%
Real estate	61	105	89	194	9.8%
Service	29	54	23	77	3.9%
Comprehensive	23	45	28	73	3.7%
Others	19	50	20	70	3.5%
Total	787	1,311	669	1,980	100.0%

Panel B: Transaction G	nel B: Transaction Classification											
	Connected	Non-connected	Total	Percentage		Connected	Non-connected	Total	Percentage			
By year:					By type:							
Year 1998	80	38	118	6.0%	Asset acquisitions	376	178	554	28.0%			
Year 1999	139	72	211	10.7%	Asset sales	332	305	637	32.2%			
Year 2000	179	68	247	12.5%	Asset displacements	303	44	347	17.5%			
Year 2001	326	108	434	21.9%	Cash payments	34	1	35	1.8%			
Year 2002	246	160	406	20.5%	Equity transfer	266	141	407	20.6%			
Year 2003	248	174	422	21.3%	By issue B, H shares or 1	not:						
Year 2004	93	49	142	7.2%	ABH	96	40	136	6.9%			
By STPT, Rights or no	ot:				A	1,215	629	1,844	93.1%			
STPT	238	120	358	18.1%	By state-owned or not:							
Rights	80	39	119	6.0%	State-owned	1,144	550	1,694	85.6%			
Others	993	510	1,503	75.9%	Non state-owned	167	119	286	14.4%			

# Table IIDescriptive Statistics of Firm Characteristics

The sample comprises 1980 transactions of the firms listed on the SHSE and SZSE during the 1998-2004 periods. We measure all variables at the fiscal year of the announcement. We initially identify the sample from Shenzhen GTA Information Technology Co, Beijing Sinofin Information Service and Shenzhen Bloomberg Database Co. The accounting information is from the Genius database provided by Shenzhen Genius Information Technology Ltd. T-test is applied. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels, respectively.

		All			STPT		Rights				
Event windows			(A)Connec	ted n=238	(B)Non-connected n=120		(C)Connected n=80		(D)Non-connected n=39		
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	
Transaction value	20,659	10,000	12,848	8,000	8,197	5,469	24,922	12,567	20,679	10,901	
Total asset	136,468	85,092	78,082	57,450	61,537	48,970	152,286	104,529	153,795	11,7391	
Trans value ratio	0.154	0.103	0.190	0.124	0.158	0.105	0.157	0.093	0.129	0.097	
ROE	0.004	0.067	-0.258	0.021	-0.170	0.072	0.155	0.137	0.139	0.115	
Cash	0.147	0.111	0.066	0.037	0.106	0.070	0.148	0.132	0.162	0.130	
Leverage	0.489	0.486	0.618	0.595	0.603	0.583	0.402	0.418	0.429	0.488	
Tobin's q	1.830	1.627	2.194	1.867	2.297	1.990	1.979	1.734	1.882	1.754	

		C	Others		Test of Difference					
Event windows	(E)Connec	ted n=993	(F)Non-connected n=510		B-A	D-C	A-C	B-D		
	Mean	Median	Mean	Median	t-value	t-value	t-value	t-value		
Transaction value	26,792	12,100	14,624	8,816	-3.513***	-0.614	-4.299***	-3.907***		
Total asset	165,684	95,161	120,712	81,692	-2.181**	0.050	-5.325***	-6.954***		
Trans value ratio	0.161	0.109	0.125	0.091	-1.849*	-0.940	1.582	1.149		
ROE	0.037	0.065	0.048	0.067	1.056	-1.087	-5.592***	-2.524***		
Cash	0.160	0.125	0.169	0.130	3.814***	0.676	-7.357***	-2.715***		
Leverage	0.463	0.471	0.474	0.487	-0.446	1.056	6.218***	3.551***		
Tobin's q	1.713	1.545	1.744	1.598	0.892	-0.451	1.551	2.299**		

#### Table III

#### Mean Cumulative Abnormal Returns (CAR, %) for Firms Around the Announcement Date (AD)

The sample comprises 1980 transactions of the firms listed on the SHSE and SZSE during the 1998-2004 periods. We obtain the initial public announcement date of the transaction from Shenzhen GTA Information Technology Co, Beijing Sinofin Information Service and Shenzhen Bloomberg Database Co.. We compute abnormal returns using the market model. We estimate the market model by using 200 trading days of return data ending 20 days before the announcement. We use the Chinese Composite Stock Price Index return as the benchmark. AD denotes the initial announcement date. Numbers in parenthesis are p-values for the test that the mean is equal to zero. T-test is applied. The t-values in Panel B are for the test of difference of (STPT-Rights) in each subset. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels, respectively.

Panel A: Full samp	Panel A: Full sample (n=1,800) for Cumulative Abnormal Returns (%) Around the AD											
	All		STPT			Rights			Others			
_		Total	Connected	Non-connected	Total	Connected	Non-connected	Total	Connected	Non-connected		
Event windows		n=358	(A): n=238	(B): n=120	n=119	(C): n=80	(D): n=39	n=1503	(E): n=993	(F): n=510		
(AD-10, AD-2)	-0.108	0.996***	1.190***	0.621	-0.139	0.163	-0.758	-0.363*	-0.475**	-0.146		
	(0.55)	(0.00)	(0.01)	(0.21)	(0.79)	(0.41)	(0.30)	(0.10)	(0.04)	(0.75)		
(AD-1, AD)	0.344***	1.015***	1.237***	0.580**	-0.190	-0.844**	1.151***	0.232***	0.178*	0.337**		
	(0.00)	(0.00)	(0.00)	(0.02)	(0.54)	(0.05)	(0.00)	(0.00)	(0.06)	(0.02)		
(AD-1, AD+1)	0.212**	1.119***	1.417***	0.540*	-0.385	-1.157**	1.199***	0.048	-0.022	0.183		
	(0.03)	(0.00)	(0.00)	(0.07)	(0.32)	(0.03)	(0.00)	(0.65)	(0.86)	(0.34)		
(AD-3, AD+3)	0.105	1.539***	2.128***	0.386	-0.755	<i>-1.991***</i>	1.780**	-0.164	-0.339	0.177		
	(0.51)	(0.00)	(0.00)	(0.40)	(0.12)	(0.00)	(0.02)	(0.38)	(0.12)	(0.63)		
(AD-5, AD+5)	-0.111	1.399***	2.265***	-0.312	-1.379**	-2.820***	1.575*	-0.370	-0.662**	0.196		
	(0.59)	(0.00)	(0.00)	(0.55)	(0.02)	(0.00)	(0.08)	(0.13)	(0.02)	(0.66)		
(AD-10, AD+10)	-0.952***	1.237**	1.694**	0.329	-1.756**	-2.647***	0.071	-1.411***	-1.774***	-0.706		
	(0.00)	(0.03)	(0.02)	(0.67)	(0.03)	(0.01)	(0.96)	(0.00)	(0.00)	(0.38)		
(AD+1, AD+10)	-1.194***	-0.709*	-0.638	-0.850	-1.427***	-1.966***	-0.323	-1.291***	-1.495***	-0.899**		
	(0.00)	(0.07)	(0.22)	(0.11)	(0.01)	(0.00)	(0.75)	(0.00)	(0.00)	(0.02)		

_	Test of Difference											
Event windows	B-	A	D-	C	A-	С	B-]	D				
	Difference	t-value	Difference	t-value	Difference	t-value	Difference	t-value				
(AD-10, AD-2)	-0.569	-0.787	-0.921	-0.834	1.027	1.181	1.379	1.447				
(AD-1, AD)	-0.657	-1.617	1.995	3.106***	2.081	4.135***	-0.571	-1.214				
(AD-1, AD+1)	-0.876	-1.666*	2.357	2.946***	2.574	3.891***	-0.659	-1.173				
(AD-3, AD+3)	-1.742	-2.312**	3.771	3.839***	4.119	4.596***	-1.394	-1.546				
(AD-5, AD+5)	-2.577	-2.837***	4.395	3.789***	5.085	4.649***	-1.887	-1.828*				
(AD-10, AD+10)	-1.366	-1.145	2.717	1.620	4.341	3.083***	0.258	0.163				
(AD+1, AD+10)	-0.212	-0.257	1.643	1.464	1.328	1.376	-0.527	-0.488				

Panel B: Classification	ons in Connecte	ed transactions	only (n=1,311)							
			Asset acquisitio	ns				Asset Sales		
Event windows	Total	STPT	Rights	Others	t-value	Total	STPT	Rights	Others	t-value
	n=376	n=42	n=18	n=316		n=332	n=78	n=19	n=235	
(AD-10, AD-2)	-0.961	0.717	1.615	-1.322	-0.599	0.579	2.676	2.522	-0.239	0.080
(AD-1, AD)	-0.051	0.183	-2.475	0.058	2.954***	0.415	1.646	-1.155	0.154	2.487***
(AD-1, AD+1)	-0.164	1.026	-3.261	-0.142	3.396***	0.533	2.237	-1.356	0.142	2.379**
(AD-3, AD+3)	-0.642	2.669	-4.277	-0.865	4.156***	0.959	3.614	-0.800	0.242	2.329**
(AD-5, AD+5)	-1.057	3.162	-4.033	-1.449	3.413***	0.781	3.971	-1.585	-0.072	2.281**
(AD-10, AD+10)	-2.307	0.579	-0.904	-2.772	0.587***	0.347	4.108	-0.322	-0.847	1.449
(AD+1, AD+10)	-1.318	-0.289	-0.044	-1.526	-0.126	-0.640	0.007	-1.688	-0.768	0.788

		As	set Displacem	ents		Equity transfer					Cash payments
Event windows	Total	STPT	Rights	Others	t-value	Total	STPT	Rights	Others	t-value	Total
	n=303	n=70	n=12	n=221		n=226	n=39	n=30	n=197		n=34
(AD-10, AD-2)	0.278	0.479	-1.919	0.335	1.168*	-0.253	0.862	-1.123	-0.336	1.210	-0.912
(AD-1, AD)	0.748	1.850	-0.141	0.466	1.717	0.182	0.904	-0.065	0.080	1.052	0.173
(AD-1, AD+1)	0.662	1.697	0.609	0.346	0.670	-0.306	0.293	-0.570	-0.382	0.847	-0.484
(AD-3, AD+3)	0.672	2.225	-0.219	0.232	1.090	-0.922	-0.716	-1.978	-0.801	0.806	-0.977
(AD-5, AD+5)	0.528	1.488	-1.766	0.347	1.180	-1.248	0.329	-3.198	-1.263	<i>1.943</i> *	-1.007
(AD-10, AD+10)	-0.179	1.247	-5.458	-0.345	1.760*	-2.485	0.408	-3.844	-2.852	1.915*	-3.000
(AD+1, AD+10)	-1.191	-0.916	-3.398	-1.158	0.968	-2.424	-1.313	-2.656	-2.611	0.938	-2.330

			State-owned			Non State-owned					
Event windows	Total	STPT	Rights	Others	t-value	Total	STPT	Rights	Others	t-value	
	n=1,144	n=183	n=74	n=887		n=167	n=55	n=6	n=106		
(AD-10, AD-2)	-0.132	1.604	0.399	-0.522	1.334	-0.198	-0.128	-2.747	-0.090	0.832	
(AD-1, AD)	0.147	0.802	-1.033	0.119	3.419***	1.336	2.587	1.485	0.672	0.712	
(AD-1, AD+1)	-0.027	1.033	-1.283	-0.131	3.260***	1.448	2.630	0.396	0.889	1.069	
(AD-3, AD+3)	-0.144	1.855	-1.963	-0.395	3.982***	0.986	3.010	-2.329	0.124	1.802	
(AD-5, AD+5)	-0.419	1.972	-2.588	-0.729	3.958***	0.798	3.235	-5.678	-0.101	2.329**	
(AD-10, AD+10)	-1.460	1.452	-2.306	-1.991	2.541***	0.602	2.500	-6.852	0.040	1.874*	
(AD+1, AD+10)	-1.491	-0.841	-1.672	-1.611	0.786	-0.530	0.042	-5.590	-0.536	2.027**	

#### Table IV

#### **Correlations Matrices for the Regression Variables (N=1980)**

The sample comprises 1980 transactions of the firms listed on the SHSE and SZSE during the 1998-2004 periods. We obtain the initial public announcement date of the transaction from Shenzhen GTA Information Technology Co, Beijing Sinofin Information Service and Shenzhen Bloomberg Database Co. We compute abnormal returns using the market model. The accounting information is from the Genius database provided by Shenzhen Genius Information Technology Ltd. All the financial variables of the firms are the numbers at the beginning of the year during which the transaction takes place Connected is a dummy variable indicating whether the transaction is connected or not. STPT is a dummy variable indicating whether the transaction takes place in the period of ST, PT, \*ST of the firm or not. Rights is a dummy variable indicating whether the transaction takes place in the period of the firm issuing new shares or not. ROE is the firm's return of equity. Cash is the firm's net Cash divided by total assets. ABH is a dummy variable indication whether or not the firm also issues B shares or H shares. State-owned is a dummy variable indicating whether the transaction is between listed firm and the state-owned counterparty or not. Transaction value is the transaction value divided by total assets of the firm's total liabilities over total assets. Tobin's Q is the firm's market value of equity and market value of liabilities to the book value of total assets.

All					Transaction						State-
n=1,800	CAR(-5,5)	Connected	STPT	Rights	value	ROE	Cash	Leverage	Tobin's q	ABH	owned
CAR(-5,5)	1.000										
Connected	-0.011	1.000									
STPT	0.032	0.000	1.000								
Rights	-0.051	0.010	-0.114	1.000							
Transaction value	0.070	0.138	0.075	-0.011	1.000						
ROE	-0.052	-0.039	-0.294	0.116	-0.081	1.000					
Cash	-0.090	-0.055	-0.214	0.005	-0.056	0.180	1.000				
Leverage	0.041	-0.031	0.186	-0.102	-0.071	-0.236	-0.207	1.000			
Tobin's q	-0.020	-0.020	0.174	0.052	0.132	-0.070	0.006	-0.014	1.000		
ABH	0.014	0.028	0.000	-0.007	-0.010	-0.042	-0.086	0.023	-0.159	1.000	
State-owned	-0.015	0.065	-0.096	0.002	-0.007	0.091	0.081	-0.162	-0.184	0.105	1.000

STPT			Transaction						State-
n=358	CAR(-5,5)	Connected	value	ROE	Cash	Leverage	Tobin's q	ABH	owned
CAR(-5,5)	1.000								
Connected	0.191	1.000							
Transaction value	0.130	0.144	1.000						
ROE	-0.118	-0.090	-0.113	1.000					
Cash	-0.080	-0.195	-0.064	0.226	1.000				
Leverage	0.009	-0.039	-0.091	-0.229	-0.106	1.000			
Tobin's q	-0.028	-0.048	0.157	-0.116	0.076	-0.007	1.000		
ABH	-0.051	0.051	-0.126	-0.029	-0.005	0.132	-0.152	1.000	
State-owned	-0.072	-0.102	-0.146	0.134	0.117	-0.073	-0.203	0.143	1.000
Rights			Transaction						State-
n=119	CAR(-5,5)	Connected	value	ROE	Cash	Leverage	Tobin's q	ABH	owned
CAR(-5.5)	1.000					U	1		
Connected	-0.312	1.000							
Transaction value	-0.037	0.094	1.000						
ROE	-0.060	0.100	0.114	1.000					
Cash	-0.041	-0.063	-0.074	0.176	1.000				
Leverage	0.080	-0.073	-0.051	0.096	0.051	1.000			
Tobin's q	-0.132	0.042	0.090	0.426	0.329	0.023	1.000		
ABH	-0.131	0.173	-0.024	-0.153	0.044	0.072	-0.222	1.000	
State-owned	0.013	0.285	-0.012	0.045	0.029	-0.018	-0.013	0.103	1.000
Others			Transaction						State-
n=1,503	CAR(-5,5)	Connected	value	ROE	Cash	Leverage	Tobin's a	ABH	owned
CAR(-5.5)	1.000					0	1		
Connected	-0.033	1.000							
Transaction value	0.061	0.142	1.000						
ROE	0.000	-0.028	-0.046	1.000					
Cash	-0.090	-0.034	-0.035	0.133	1.000				
Leverage	0.036	-0.027	-0.090	-0.202	-0.207	1.000			
Tobin's q	-0.010	-0.022	0.116	0.028	0.013	-0.062	1.000		
ABH	0.036	0.013	0.019	-0.067	-0.110	-0.009	-0.160	1.000	
State-owned	0.001	0.091	0.045	0.028	0.055	-0.183	-0.183	0.096	1.000

#### Table V

#### Regression of Cumulative Abnormal Returns [CAR (-5, 5)] on Firm Characteristics-- Full Sample

The sample comprises 1980 transactions of the firms listed on the SHSE and SZSE during the 1998-2004 periods. We obtain the initial public announcement date of the transaction from Shenzhen GTA Information Technology Co, Beijing Sinofin Information Service and Shenzhen Bloomberg Database Co.. We compute abnormal returns using the market model. The accounting information is from the Genius database provided by Shenzhen Genius Information Technology Ltd. All the financial variables of the firms are the numbers at the beginning of the year during which the transaction takes place Connected is a dummy variable indicating whether the transaction is connected or not. STPT is a dummy variable indicating whether the transaction takes place in the period of ST, PT, \*ST of the firm or not. Rights is a dummy variable indicating whether the transaction takes place in the period of the firm also issues B shares or not. ROE is the firm's return of equity. Cash is the firm's net Cash divided by total assets. ABH is a dummy variable indication whether or not the firm also issues B shares or H shares. State-owned is a dummy variable indicating whether the transaction is between listed firm and the state-owned counterparty or not. Trans is the transaction value divided by total assets of the firm's total liabilities over total assets. Tobin's Q is the firm's market value of equity and market value of liabilities to the book value of total assets. T-test is applied. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels, respectively.

		(I)		(II)	(	(III)	(	IV)		(V)
	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	t-value
Intercept	-0.004	-0.490	-0.006	-0.730	-0.002	-0.220	0.003	0.330	0.005	0.770
Rights	-0.014	-1.790*	-0.010	-0.930	-0.010	-0.910	-0.010	-0.960	0.008	0.690
STPT	0.003	0.660	-0.002	-0.270					-0.015	-2.200**
ROE					-0.007	-1.150				
Cash							-0.047	-3.110***		
Trans	0.043	2.600***	0.043	2.600***	0.042	2.680***	0.044	2.820***	0.038	2.440**
Trans*STPT			-0.073	-1.680*	-0.092	-2.170**	-0.086	-2.380**		
Trans*Connected*STPT			0.147	3.650***	0.149	3.210***	0.141	3.510***	0.058	1.750*
Trans*Rights			0.098	0.980	0.099	1.000	0.102	1.030		
Trans*Connected*Rights			-0.168	-1.800*	-0.168	-1.800*	-0.177	-1.890*	-0.048	<i>-1.910</i> *
Leverage	0.019	2.020**	0.020	2.190**	0.014	1.380	0.014	1.500		
Leverage*Connected*STPT									0.039	3.080***
Leverage*Connected*Rights									-0.061	-1.580*
Tobin's Q	-0.003	-1.320	-0.003	-1.160	-0.003	-1.210	-0.003	-1.120		
ABH	0.001	0.130	0.002	0.210	0.003	0.400	-0.001	-0.070	-0.003	-1.410
ABH*Connected*STPT									-0.030	-1.490
ABH*Connected*Rights									-0.026	-0.830
State-owned	-0.002	-0.410	-0.001	-0.180	-0.002	-0.310	0.000	-0.040	-0.001	-0.250
R-squared		0.01	(	0.02	(	0.02	0	0.03	(	).02

# Table VI Regression of Cumulative Abnormal Returns [CAR (-5, 5)] on Firm Characteristics—Subsets I

The sample comprises 1980 transactions of the firms listed on the SHSE and SZSE during the 1998-2004 periods. We obtain the initial public announcement date of the transaction from Shenzhen GTA Information Technology Co, Beijing Sinofin Information Service and Shenzhen Bloomberg Database Co.. We compute abnormal returns using the market model. The accounting information is from the Genius database provided by Shenzhen Genius Information Technology Ltd. All the financial variables of the firms are the numbers at the beginning of the year during which the transaction takes place Connected is a dummy variable indicating whether the transaction is connected or not. STPT is a dummy variable indicating whether the transaction takes place in the period of ST, PT, \*ST of the firm or not. Rights is a dummy variable indicating whether the transaction takes place in the period of the firm issuing new shares or not. ROE is the firm's return of equity. Cash is the firm's net Cash divided by total assets. ABH is a dummy variable indication whether or not the firm also issues B shares or H shares. State-owned is a dummy variable indicating whether the transaction is between listed firm and the state-owned counterparty or not. Trans is the transaction value divided by total assets of the firm's total liabilities over total assets. Tobin's Q is the firm's market value of equity and market value of liabilities to the book value of total assets. T-test is applied. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels, respectively.

	STPT n=358		Rights n=119		Others n=1503		Connected n=1311		Non-Connected n=669	
	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	t-value
Intercept	0.000	-0.020	-0.023	-0.800	0.002	0.130	-0.002	-0.210	0.019	1.320
Transaction value	-0.033	-0.800	0.140	1.730*	0.049	1.700*	0.063	3.470***	0.008	0.260
Trans*Connected	0.142	3.500***	-0.163	-2.090**	-0.011	-0.430				
Trans*STPT							0.042	1.520*	-0.050	-1.270
Trans*Rights							-0.106	-2.530***	0.044	0.570
Cash	-0.029	-0.610	-0.012	-0.200	-0.050	-2.970***	-0.058	-2.930***	-0.023	-1.020
Leverage	0.022	1.410	0.052	1.120	0.011	0.890	0.028	2.380***	-0.013	-0.910
Tobin's Q	-0.003	-0.770	-0.010	-1.570	-0.001	-0.370	-0.002	-0.810	-0.006	-1.390
ABH	-0.024	-1.390	-0.042	-1.620*	0.008	0.910	-0.015	-1.670*	0.037	2.980***
State-owned	-0.004	-0.390	0.011	0.640	0.001	0.130	-0.005	-0.710	0.005	0.660
R-squared	0.07		0.09		0.01		0.04		0.03	

# Table VII Regression of Cumulative Abnormal Returns [CAR (-5, 5)] on Firm Characteristics—Subsets II

The sample comprises 1980 transactions of the firms listed on the SHSE and SZSE during the 1998-2004 periods. We obtain the initial public announcement date of the transaction from Shenzhen GTA Information Technology Co, Beijing Sinofin Information Service and Shenzhen Bloomberg Database Co.. We compute abnormal returns using the market model. The accounting information is from the Genius database provided by Shenzhen Genius Information Technology Ltd. All the financial variables of the firms are the numbers at the beginning of the year during which the transaction takes place Connected is a dummy variable indicating whether the transaction is connected or not. STPT is a dummy variable indicating whether the transaction takes place in the period of ST, PT, \*ST of the firm or not. Rights is a dummy variable indicating whether the transaction takes place in the period of the firm issuing new shares or not. ROE is the firm's return of equity. Cash is the firm's net Cash divided by total assets. ABH is a dummy variable indication whether or not the firm also issues B shares or H shares. State-owned is a dummy variable indicating whether the transaction is between listed firm and the state-owned counterparty or not. Trans is the transaction value divided by total assets of the firm's total liabilities over total assets. Tobin's Q is the firm's market value of equity and market value of liabilities to the book value of total assets. T-test is applied. \*, \*\*, and \*\*\* denote significance at the 10, 5, and 1 percent levels, respectively.

	Asset acquisit	ions n=554	Asset sales n=637		Asset displacements n=347		Equity transfer n=407	
	Coef.	t-value	Coef.	t-value	Coef.	t-value	Coef.	t-value
Intercept	0.010	0.630	-0.001	-0.040	-0.020	-1.020	0.006	0.230
Transaction value	0.006	0.250	0.105	2.880***	0.056	2.100**	0.071	1.560
Trans*STPT	-0.030	-0.420	-0.128	-2.340***	-0.069	-0.890	-0.162	-1.190
Trans*Connected*STPT	0.090	1.130	0.299	4.440***	0.079	1.000	0.147	0.890
Trans*Rights	-0.034	-0.390	0.061	0.270	0.199	1.380	0.182	0.380
Trans*Connected*Rights	-0.163	-1.290	-0.153	-0.570	-0.236	-1.490	-0.325	-0.680
Cash	-0.041	-2.030**	-0.024	-0.800	-0.017	-0.420	-0.064	-1.490
Leverage	-0.019	-1.310	0.026	1.580	0.042	2.000**	0.023	0.820
Tobin's Q	0.003	0.750	-0.010	-2.310**	-0.003	-0.490	-0.002	-0.360
ABH	0.009	0.690	0.008	0.690	-0.040	-2.470***	-0.008	-0.300
State-owned	-0.002	-0.200	0.007	0.830	0.003	0.300	-0.009	-0.640
R-squared	0.03		0.07		0.05		0.03	



Figure 1. Cumulative abnormal returns from day -10 to day +10 around the transaction announcement