

**Tunneling or Propping:
Evidence from Connected Transactions in China***

Winnie Qian Peng

School of Business and Management
Hong Kong University of Science and Technology
Email: pengq@ust.hk

K.C. John Wei

School of Business and Management
Hong Kong University of Science and Technology
Email: johnwei@ust.hk

Zhishu Yang

School of Economics and Management
Tsinghua University
Email: yangzhsh@em.tsinghua.edu.cn

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

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Abstract

Friedman, Johnson, and Mitton (2003) develop a model in which, in equilibrium, controlling shareholders may choose either tunneling from or propping up their listed company depending on the magnitude of an adverse shock and the magnitude of the private benefits of control. In this paper, we employ connected transaction data from China to test the implications of their model. We hypothesize that, when listed companies are financially healthy (in financial distress), their controlling shareholders are more likely to conduct connected transactions to tunnel (prop up) their listed companies and the market reacts unfavorably (favorably) to the announcement of these transactions. Our empirical findings strongly support our hypotheses. We also find that all of the transaction types in our sample can be used for tunneling or propping depending on different financial situations of the firms. Finally, political connection is negatively associated with the announcement effect. Overall, our analysis supports Friedman et al.'s (2003) model by furnishing clear evidence for propping and tunneling to occur in the same company but at different times.

JEL classification: G34, G32, G38

Keywords: Connected transactions; Tunneling; Propping; Chinese listed firms

1. Introduction

A large body of empirical evidence has shown that controlling shareholders may take advantage of minority shareholders through connected transactions, especially in emerging markets where legal protection of minority shareholders is weak. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997; 1998; 1999; 2000), Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000), Glaeser, Johnson, Shleifer (2001), and Chang (2003) have found that controlling shareholders extract private benefits from minority shareholders through “tunneling.” Expropriation from minority shareholders includes outright theft and selling (buying) assets or products at lower (higher) than market price to (from) a firm in which the controlling shareholder has a high stake.

Since the Asian Financial Crisis in 1997-1998, evidence has suggested that controlling shareholders also sometimes use private resources to “prop up” a troubled listed firm.¹ More specifically, they may temporarily transfer resources to the listed firm to boost its performance so that a default or delisting can be avoided. Tunneling and propping are the two major behaviors of controlling shareholders when they engage in connected transactions within a group of affiliated firms.² Tunneling and propping can occur in the same firm but during different time periods. The questions are when and to what extent are controlling shareholders likely to choose tunneling or propping.

¹ The Salim group, once the biggest conglomerate in Indonesia, sold its privately held assets in the Netherlands in order to bail out its publicly listed operations in the Philippines and Indonesia. It also injected funds from a publicly listed Hong Kong firm into a publicly listed Indonesian firm (Anon, 1998; Anon, 1999a). The chairman of Samsung Electronics, Lee Kun Hee, who was also the head of the controlling family, donated part of his personal wealth to pay off the debts of Samsung Motors Inc., which was facing bankruptcy in summer 1999 (Anon, 1999b).

² Besides tunneling and propping, there is also a “value-added” view of the connected transactions in the literature, which suggests that connected transactions can reduce transaction costs and facilitate the efficient allocation of resources within the group (Shin and Park, 1999; Khanna and Palepu, 1997, 2000; Bae, Kang, and Kim, 2002; Claessens, Fan, and Lang, 2006). “Propping” is not the same as “value-added” because propping is used to boost performance temporarily and it is usually not able to add real value to the firm in the long run.

Friedman, Johnson, and Mitton (2003) develop a model in which it is optimal for controlling shareholders to prop when there is a moderate adverse shock. If there is no shock or the shock is very small, controlling shareholders choose to tunnel. Looting (meaning that controlling shareholders take everything out of the firm causing it to collapse), the extreme form of tunneling, occurs when the negative shock is very large.³ To test the predictions of their model, Friedman et al. examine the stock price performance during the Asian Financial Crisis. They argue that issuing debt is a credible proxy for “propping” and that it is easy for Asian firms in pyramidal structures to prop. They find that firms in pyramids with more debt experienced smaller stock price declines during the Crisis than other firms, which is consistent with the existence of propping.

Friedman et al.’s model facilitates our understanding of the fundamental nature of tunneling and propping. However, as they have noted, direct empirical evidence of propping is lacking. In addition, they do not provide any evidence of tunneling. Continuing their study, we analyze connected transaction data from China to test the predictions of their model directly. Connected transactions are a direct means for controlling shareholders in China to engage in tunneling or propping. The uniqueness of the ownership structures of listed firms in China and the stock market regulations there allow us to identify both the timing and the extent of tunneling or propping in the same firm, which is difficult if not impossible to observe or to quantify in firms in other countries.

In China, a firm faces two types of risk after its listing that are unique to the Chinese stock market: (1) delisting and (2) losing the right to issue new shares. If a listed firm reports a net loss for two consecutive years (return on equity (ROE) < 0%), it will be designated as a special treatment (ST) firm and will face various trading and financial restrictions. If the firm continues

³ Evidence of looting is also shown in La Porta, Lopez-de-Silanes, and Zamarripa (2003).

to make losses for one more year, it will be designated as a particular transfer (PT) firm which entails virtual suspension of trading. Further, if a PT firm does not become profitable in the following year, it becomes completely delisted. A listed firm also faces the risk of losing its right to issue new shares if the average ROE over the three-year period prior to issuing new shares is less than 10%.⁴

Because it is very difficult to list a firm in China, a firm's controlling shareholders would suffer substantial losses of the private benefits of control from delisting or from the loss of the right to issue new shares. The controlling shareholders have strong incentives to prop up the listed firms when they are facing the risks mentioned above so that they can continue to enjoy the private benefits of control of a listed firm or the access to the financial market over the long run.

With China's regulations on delisting and on the right to issue new shares, we are able to distinguish between firms that are in sound financial condition for which controlling shareholders have strong incentives to tunnel and firms that are in poor financial condition for which controlling shareholders have incentives to prop up. In general, since the listed firms in China rarely go into bankruptcy, when a listed firm is designated as ST or PT, it can be regarded as in poor financial condition and it is facing the risk of delisting. In contrast, if a firm has already successfully obtained the right to issue new shares, it must be in a healthy financial condition since neither the risk of delisting nor the risk of losing the right to issue new shares exists. It is important to note that, during other periods when a firm does not face the risk of delisting or the risk of losing the right to issue new shares, the incentive for tunneling or propping is less easily to identify. If a firm does not need or intend to issue new shares, tunneling

⁴ For a detailed description of the ST policy and the policy on the right to issue new shares, please refer to Section 2.

is likely to occur. If a firm wishes to issue new shares in the near future, it is more likely for controlling shareholders to prop up rather than to tunnel in order to meet the requirements for issuing new shares.

Based on the above classifications of listed firms, we can examine the tunneling or propping behavior of controlling shareholders by using the information from the announcements of connected or non-connected transactions in China. We classify the listed firms that are engaged in connected or non-connected transactions during the period 1998-2004 into three categories: sound financial condition, poor financial condition, and the rest. We also classify the transactions into connected and non-connected transactions. There are five types of transactions included in our study: asset acquisitions, asset sales, asset displacements, equity transfers, and cash payments. We examine the market reactions to each of these types of transactions. Our results in general support our hypotheses. In particular, we find that there is a negative market reaction to announcements of connected transactions by listed firms that have successfully obtained the right to issue new shares, which indicates that investors perceive controlling shareholders as having incentives to tunnel. In contrast, we find a positive market reaction to announcements of connected transactions by listed firms that face the risk of delisting, which indicates that investors perceive controlling shareholders as having incentives to prop up. All of the transaction types in our sample can be used for tunneling or propping depending on the financial situations of the firms. Political connection seems to be negatively associated with the announcement effect, which suggests that firms with political connections appear to be more likely to conduct tunneling-motivated connected transactions. This is consistent with the finding by Fan, Wong, and Zhang (2007) that government intervention is negatively associated with firm performance and governance quality. Finally, we find that, in bad times, affiliated-group firms are more likely

to use connected transactions to prop up listed firms with high leverage than listed firms with low leverage, which is consistent with Friedman et al.'s (2003) hypothesis.

We note that there are two contemporaneous and independent studies that are directly related to ours. Jiang, Lee, and Yue (2010) report that controlling shareholders in China use inter-corporate loans (a type of connected transaction) to tunnel from their listed companies. Jian and Wong (2010) document that controlling shareholders in China also prop up earnings by using abnormal related sales (another type of connected transaction), when their listed firms are at the threshold for the right to issue new shares or for delisting. They also find significant cash transfers via related lending from listed firms back to the controlling owners after the propping. We also note that there are two earlier studies that are also related to ours. Liu and Lu (2007) find that earnings management in Chinese listed firms is mainly induced by the controlling owners' tunneling activities. Cheung, Jing, Rau, and Stoutaitis (2006) study a sample of connected transactions in Hong Kong listed companies and find that firms announcing connected transactions earn significantly more negative excess returns than firms announcing non-connected transactions. They also find that mainland Chinese companies listed in Hong Kong are more likely to use connected transactions to expropriate minority shareholders.

Our study is different from these previous studies in several ways. First, our study provides direct evidence to Friedman et al.'s (2003) model by identifying both the timing and the extent of tunneling or propping in the same firm. Specifically, we find that, in some cases, controlling shareholders in China prop up their listed firms in bad times, while they tunnel from these same listed firms in good times. Second, the transactions included in our study all have significant economic impacts on listed firms. On average, the transaction value is greater than 10% of a firm's total assets. Smaller transactions are not included, as timely announcements are not

required. Third, the types of transactions studied in this paper are mainly asset and equity transactions, while the earlier studies focus on the related sales, related lending, among other types of transactions. We find that all types of transactions in our sample can be used for tunneling or propping depending on the financial situation of a firm, while the earlier studies document specific types of transactions that might be more likely to result in tunneling or propping. Finally, we find that political connection has a negative effect on announcement returns, suggesting that firms with political connections seem to be more likely to conduct tunneling-motivated connected transactions.

The rest of the paper proceeds as follows. Section 2 details the background of our study and the hypothesis development. Section 3 describes the data and the methodology. Section 4 reports empirical results from simple t-statistic tests and cross-sectional regressions. Section 5 summarizes and concludes the paper.

2. Background and Hypothesis Development

2.1 Unique features of the Chinese stock market

The Chinese stock market was initially organized by the government to privatize its state-owned enterprises (SOEs) to raise capital and to improve operating performance. Since its inception in 1991, the Chinese stock market (Shanghai Stock Exchange and Shenzhen Stock Exchange jointly) has grown exponentially to become one of the largest stock markets in the world with a market capitalization of around US\$3.5 trillion at the end of 2009. There were 870 firms listed on the Shanghai Stock Exchange and 830 on the Shenzhen Stock Exchange with a combined total of 1,700 firms at the end of 2009. The Shanghai Stock Exchange alone was the sixth largest stock exchange in the world, ranking just below the London Stock Exchange and

just above the Hong Kong Stock Exchange at the end of 2009. The listed (tradable) shares in China are classified according to the residency of their owners as domestic (A-shares) or foreign (B-, H- and N-shares).⁵

In China, a country with a centrally planned economy, the China Securities Regulatory Committee (the CSRC) has the authority to set listing and delisting policies for the listed firms in the Shanghai and Shenzhen Stock Exchanges, a situation that is different from the United States and other developed markets, in that the stock exchanges have the authority to set their own rules. The ST policy and the policy on the right to issue new shares are the ones that are very unique and have a big impact on the Chinese stock market.

Starting from April 1998, the CSRC mandated that if a listed firm reports a net loss (i.e., a negative ROE) in two consecutive years, it will be designated as a special treatment (ST) firm. In 1999, the CSRC introduced the particular transfer designation (PT) for an ST firm if it suffers net losses for three consecutive years. There are various restrictions for an ST firm, the shares of which is traded with a 5% price change limit each day compared with a 10% limit for a normal firm. In addition, its midterm financial reports must be audited and it cannot raise additional capital from the stock market. A PT stock can be traded only on Friday, with a maximum 5% upside limit to the previous Friday's close, but no restriction on the downside. PT itself entails virtual suspension of trading. Further, if a PT firm does not become profitable in the following year, it becomes completely delisted. In 2002, the PT designation was abolished by the CSRC. Afterwards, if a firm suffers losses for three consecutive years, it will be delisted without a PT

⁵ A-shares are available exclusively to domestic Chinese investors and are denominated in the Chinese currency, the RMB. Originally, B-shares, which are denominated in U.S. dollars on the Shanghai Stock Exchange and in Hong Kong dollars on the Shenzhen Stock Exchange, were only available for trading by non-residents. However, the B-share market was opened up to individual domestic investors in 2001 if they had foreign currencies. Chinese firms have been permitted to list their stocks on the Stock Exchange of Hong Kong (SEHK) as H-shares since 1993. N-shares are traded on U.S. stock exchanges, normally the New York Stock Exchange, in the form of American Depositary Receipts (ADRs).

transitional period. To replace the old “ST” designation, the CSRC introduced a new designation called “*ST” in 2003. An *ST firm is one that reports net losses for two consecutive years. It is similar to ST, but without the transitional PT period. That is, if an *ST firm suffers losses for one more year, it will be delisted. During 1998 and 2004, 250 listed firms in the Shanghai and Shenzhen Stock Exchanges were designated as ST or *ST firms, 35 of which were delisted eventually.⁶ The ST policy is still effective as of June 2010. It is set by regulators in the hope of protecting investors’ interest. However, as addressed by Jiang and Wang (2008), the ST policy has serious unintended consequences. For example, it could drive healthy firms out of the stock markets for temporary accounting losses, and it also induces listed firms to engage in earnings manipulation to avoid being delisted.

In order to obtain the right to issue new shares in the form of rights issues or seasoned equity offerings, starting from 1996, a listed firm in China is required by the CSRC to maintain a minimum return on equity (ROE) of 10% for each of the three consecutive years prior to the offering. In 1999, the policy was modified to an average ROE of no less than 10% and at the same time a minimum ROE of no less than 6% in each of the three years. In 2001, the policy was further modified to an average ROE of no less than 6% in the previous three years before the offering. Between 1998 and 2004, 1,021 listed firms in the Shanghai and Shenzhen Stock Exchanges have issued new shares at least once. As documented by many previous studies such as Jiang and Wei (1998), Chen, Chen, and Su (2001), and Haw, Qi, Wu, and Wu (2005), the policy on the right to issue new shares also has unintended consequences in that the listed firms tend to manage their earnings in order to reach the ROE thresholds.

Ding , Zhang, and Zhang (2007), Liu and Lu (2007), Jian and Wong (2010), and others have documented that controlling shareholders in listed firms have strong incentives to use real

⁶ There were 851 listed firms at the end of 1998 and 1,373 listed firms at the end of 2004.

transaction-based techniques to “prop up” a listed firm that is in danger of being delisted or losing its right to issue new shares. Those real transactions include connected transactions, restructuring, or fraudulent activities, which equally often result in tunneling by controlling shareholders when the listed firms are out of danger.

The above studies indicate that the ST policy and the policy on the right to issue new shares might provide timing and opportunities for controlling shareholders to prop up or tunnel from the listed firms in China. Moreover, there are several other unique features of the Chinese listed firms that are quite helpful for us to understand the incentives of controlling shareholders’ tunneling and propping behavior.

First, the ownership of Chinese listed firms is highly concentrated, and more than 80% of the listed companies are state-owned enterprises. On average, state-owned shares and legal person shares (indirectly owned by the government) account for 70% of the total number of shares in Chinese listed firms during our sample period 1998-2004.⁷ Furthermore, the largest shareholders (in 80% of the cases) control more than 40% of the listed firms’ shares, while the second largest shareholders own less than 10% of these shares. In some cases, CEOs of the listed companies are directly appointed by the local or central government or have close ties with the government. Fan, Wong, and Zhang (2007) find that almost 27% of the CEOs in their sample of 790 newly partially privatized firms in China are former or current government bureaucrats. The 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 system and to the lack of punishment associated with the current securities laws.

Second, a majority of A-shares owned by the government or its agencies are not tradable. State and legal person non-tradable shares cannot be traded on the exchanges, but can be

⁷ The percentage has been slightly reduced since the share structure resolution in 2005.

transferred to domestic corporations, typically another government agency, if approved by the CSRC. At the end of 2004, non-tradable shares accounted for more than 60% of the outstanding stocks. Since most of their shares are non-tradable, the controlling shareholders could not benefit from the share price appreciation associated with improving operating performance, which leads to their tunneling behavior through other channels such as connected transactions and fraudulent activities.

In 2005, the Chinese government initiated a reform, called the share structure resolution, to resolve the issue of non-tradable shares. To make non-tradable A-shares tradable, the holders of non-tradable A-shares have to give part of their shares free of charge to the holders of the corresponding tradable A-shares. A typical holder of tradable A-shares will receive 2-3 shares per 10 shares that the tradable A-shares holder own from holders of non-tradable shares.⁸ The reform had been mostly completed by 2007, which caused an unprecedented wave of stock price boom during the reform period. Due to this structural change which may affect the incentives of controlling shareholder, our sample does not include the period after the reform.

Third, the group-controlled ownership structure in China is very common. A large number of listed firms have been restructured from existing SOEs through “carve outs,” meaning that the productive operation of a firm is carved-out to set up a firm to be listed and the unproductive operation remains in the parent firm. After the listing, the government still controls the majority of the shares of these partially privatized SOEs through different local or central government agencies. Other than solely for profit maximization, the SOEs have other objectives such as to maintain employment, to directly control industries that are strategically important, and to extract various private benefits as well. As a result, there is a natural tendency for the SOEs to tunnel

⁸ In some cases, instead of giving out shares for free, the non-tradable shareholders pay a certain amount of cash to tradable shareholders.

from listed firms. According to Claessens, Djankov, Fan, and Lang (2002), tunneling becomes more severe when the controlling shareholders' controlling right exceeds their ownership right.

Fourth, it is very difficult for firms to get listed in China. Since the primary objective for the development of the 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 the central or local governments. Specifically, until recently, access to listing on the Chinese stock market was strictly administered by the government. For example, listing quotas were allocated to provinces or ministries according to certain criteria.⁹ Firms in protected industries or with close ties to the government had a great advantage over other firms in winning the right to go public. Because of policy constraints, the competition for the right to have a firm listing via initial public offerings (IPOs) is fierce. As a result, the listing status of a public firm carries a significant value. Thus, the controlling shareholders have strong incentives to prop up the listed firms in times of financial distress in order to avoid delisting.

Given the above reasons, the Chinese stock market offers a natural and unique setting for our study on tunneling and propping.

2.2 Connected 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

⁹ The listing quota system was canceled and the quotas were finally used up by 2001. Afterwards, a series of reform plans were adopted by regulators. However, it was still difficult for firms to get listed and the government's approval was still needed. At the end of 2005, the government (i.e., the CSRC) decided to give the exchanges the power to decide if a firm is qualified for listing, while the government still keeps the power to decide if a firm is qualified for issuing new shares after listing. In essence, the government still has the most influential power in making the issuing decision.

firms that hold substantial shares of the listed firm. The definition also applies to any person who is a close relative (such as spouses, parents, step-parents, brothers/sisters, step-brothers/sisters, and in-laws) of the connected person. A 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 in which the listed firms own a 5%-50% share and thus can exert significant influence over but do not consolidate them into their financial statements.

There are many different forms of connected transactions in China, including asset acquisitions, asset sales, asset displacements, equity transfers, cash payments, cash receipts, asset leases, loan guarantees, trademark rights transfers, etc. Common transactions are tangible assets and equity transactions. Intangible asset transactions, such as trademark rights transfers, have become popular recently.

Since 1997, the Ministry of Finance and the CSRC have issued several accounting rules and regulations regarding connected transactions. Connected transactions between a listed firm and its connected person amounting to a total value of greater than RMB300,000 (US\$36,300), and connected transactions between a listed firm and its connected party amounting to a total value of greater than RMB3 million (US\$363,000) or 0.5% of net assets, whichever is higher, must be reported to the exchange within two working days following the signing of the transaction agreement, and must be disclosed in the footnotes of the firm's annual report. For the connected transactions of a total value of greater than RMB30 million (US\$3.63 million) or 5% of net assets, which is higher, the transaction price must be appraised or audited by professionals, and approved in the general meeting of shareholders. For non-connected transactions, transactions amounting to a total value of greater than 10% of total assets or generating operating revenue

greater than 10% of the total revenue must also be reported to the exchange within two working days following the transaction agreement. However, enforcement of the rules is weak because the CSRC lacks the necessary investigative and prosecuting power and resources.

Due to the unique ownership structure and weak governance mechanisms in China, listed firms become the nexus of a series of connected transactions carried out for the benefit of controlling shareholders. Statistics show that out of 719 listed firms in 1997, 84.6% (i.e., 609 firms) were involved in different degrees of connected transactions. In 2000, this number reached 93.2%. Among those connected transactions, more than 70% were conducted between the controlling shareholders and their listed firms.

2.3 Hypotheses

As stated earlier, the ST policy and the policy on the right to issue new shares might provide timing and opportunities for controlling shareholders to prop up or tunnel from the listed firms in China. In addition, several unique features of the Chinese listed firms give incentives for controlling shareholders' tunneling and propping behavior. Tunneling is related to the agency problem between controlling shareholders and minority shareholders. Corporate governance is designed to alleviate the agency problem. However, the corporate governance mechanisms are very weak in China. Chinese listed firms are mostly owned by the government, meaning that controlling shareholders care less about minority shareholders and pay more attention to their own interests. As the majority of shares owned by the government or its agencies are not tradable during our sample period, the controlling shareholders would have had to find alternative channels such as connected transactions to tunnel from listed firms because they cannot benefit from the share price appreciation associated with improving operating performance. In addition,

the group-controlled ownership structure in China enables controlling shareholders to tunnel from listed companies for purposes other than wealth maximization or to benefit themselves.

Thus, when a listed firm is in sound financial condition and faces no risk of delisting or losing the right to issue new shares, connected transactions can provide controlling shareholders with direct opportunities to tunnel. Tunneling includes activities such as extracting cash from the listed firm (by selling assets, goods, or services to the firm through self-dealing transactions), obtaining loans on preferential terms, transferring assets from the listed firm to other group-affiliated firms, or diluting the interests of minority shareholders by acquiring additional shares at a preferential price. The above discussions lead to the following hypothesis:

H1: When a listed firm is in a sound financial condition, the market will react negatively to the firm's announcement of connected transactions.

Controlling shareholders do not always tunnel. As the listing status is very valuable for Chinese listed firms, when a listed firm is in financial distress, controlling shareholders have incentives to prop up the firm in order to maintain its listing status so that they can continue to control the firm and to protect their private benefits of control. Thus, when a listed firm is in poor financial condition, its controlling shareholder is likely to provide temporary support for the firm, such as buying assets from the firm at a higher price, exchanging good assets for bad assets in return, and providing loans with favorable interest rates. Through these connected transactions, the listed firm can turn a loss into a profit so that it can remove its special designation status. We therefore expect a positive market reaction to an announcement of a connected transaction when it is made between a listed firm in poor financial health and its controlling shareholders. However, this “propping” behavior should not last long. The controlling shareholders would “help” a listed firm temporarily, because they are afraid of losing

the private benefits of control or the ability to raise equity if the listed firm is delisted or loses the right to issue new shares. The above discussions lead to the following hypothesis:¹⁰

H2: When a listed firm is in poor financial health, the market will react positively to the firm's announcement of connected transactions.

3. Data and Methodology

3.1 Descriptive summary

Our sample includes non-financial firms that were listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange during the period 1998-2004. Since the two stock exchanges began to implement the ST policy in 1998, and China initiated a reform to make non-tradable shares tradable in 2005, our sample period 1998-2004 is carefully chosen to cover the longest available time period and to avoid the impact of the 2005 reform. We obtain information on both connected and non-connected transactions from three major sources: the Shenzhen GTA Information Technology Corporation, the Beijing Sinofin Information Service, and the Shenzhen Bloomberg Database Corporation. We then manually identify the characteristics of each transaction. There were over 8,000 connected and non-connected transactions during this sample period. Due to the weak enforcement of disclosure, many firms especially in the early years only disclosed the connected or non-connected transactions in their annual reports without any announcements of the signing of the transaction agreements. As a result, we simply drop those cases. Since most of the non-connected transactions are required for immediate announcements only if the total value is 10% greater than the total assets, we further eliminate connected transactions in which the transaction value is lower than 10% of the total assets in order to make

¹⁰ Note that the hypothesis does not include the situation when a firm faces the risk of losing its right to issue new shares, because it is not easy for outside investors to perceive the need for a firm to issue new shares..

them comparable. We also delete the transactions if a firm had more than one transaction within one month. This screening process results in a final sample of 1,980 transactions, in which 1,311 are connected transactions and 669 are non-connected transactions. Many firms were involved in more than one transaction. As a result, the number of sample firms is reduced to 787, about 60% of the total number of listed firms in China by the end of 2004.

We identify the year during which a firm had successfully obtained the right to issue new shares. This period is called the “Rights” period and is the period during which the firm was in sound financial condition and did not face the risk of losing the right to issue new shares. We choose this classification for the following two reasons: First, if a firm has obtained the issuing right, the accounting performance in the previous three years must be good (i.e., its average *ROE* per year is over 10%), according to the requirements for issuing new shares. Second, in general, half a year before a firm receives the approval to issue new shares, it needs to make an announcement of its intention to issue new shares to the public. Thus, the possibility and the news of issuing new shares are known by the public during that year, which could be more or less reflected in the stock price at that time. To check the robustness, the “Rights” period is also expanded to include the year following the rights issuing. The period during which the firm is designated as ST, PT, or *ST is called the “STPT” period and is the period during which the listed firm was in financial difficulty. The rest of the periods other than the “Rights” period and the “STPT” period are called “Other”. Instead of using “STPT” and “Rights” to classify the financial condition of a firm, we can also use *ROE* directly for the same purpose as it is the major judging criteria for the ST policy and the policy on the right to issue new shares. However, as CSRC changes the threshold of *ROE* for the two policies from time to time, we believe that our method of classifying the financial conditions is more proper.

Table 1 summarizes the distribution of the listed firms engaged in connected transactions and non-connected transactions by industry. Manufacturing firms account for 47.2% of the total number of connected transactions during our sample period. This is because most listed firms are manufacturing firms. The next in order are firms in the wholesale and retail industry and in the information technology industry.

[Insert Table 1 Here]

Table 2 classifies the transactions in detail. There are more connected transactions in years 2001, 2002 and 2003 than in other years. Since many transactions from earlier years were disclosed only in annual reports, we drop those observations. There are only a few observations in 2004 due to a lack of data.

The connected transactions are further classified into five categories: asset acquisitions, asset sales, asset displacements, cash payments, and equity transfers. Except for cash payments, the other four categories of connected transactions are evenly distributed. Of the non-connected transactions, asset sales have the highest frequency (305), followed by asset acquisitions (178) and equity transfers (141). When the transactions are classified by the financial condition of the listed firms, 358 transactions took place during the “STPT” period, 119 transactions were carried out during the “Rights” period, and the remaining 1,503 transactions were conducted during the “Other” period. The majority of the transactions (1,844) were conducted by the firms that issued only A-shares and the remaining 136 transactions were carried out by firms that issued A-shares and B-shares or H-shares. Finally, 346 transactions were conducted between the listed firms and their central government controlling shareholders, and 1,348 transactions were conducted between the listed firms and their local government controlling shareholders, while only 286 transactions were with non-SOEs.

[Insert Table 2 Here]

3.2 Abnormal returns surrounding announced connected transactions

We obtain the stock price data of the listed firms from the daily return file and the market index return file of the China Stock Market & Accounting Research (CSMAR) Database, 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 was made after the close of trading, we choose the next trading day as the announcement date.¹¹

We use the standard event-study methodology to measure the market reaction to the connected transactions.¹² We compute the ex post abnormal returns (AR_{it}) as follows:

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

where R_{it} and R_{mt} are the daily returns of the listed firm engaged in connected transaction i ($i = 1 \dots N$) 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 the ordinary least squares estimates of the intercept and slope from the market model regression, respectively. We compute the abnormal returns by estimating $\hat{\alpha}_i$ and $\hat{\beta}_i$ from an ordinary least squares regression using 200 daily returns beginning with day $t = -220$ and ending with $t = -21$ relative to the announcement date $t = 0$.

We construct the cumulative abnormal return (CAR_i) over any time interval, between dates T_1 and T_2 , as follows:

¹¹ If there is information leakage, it will be against finding results that are consistent with our hypotheses.

¹² Apart from using the market model to calculate $CARs$, we also use the market excess returns to calculate $CARs$, which is equal to the daily stock return minus the daily market index return. The results are virtually the same.

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

We compute the cross-sectional average of *CARs* between dates T_1 and T_2 (denoted by $ACAR(T_1, T_2)$) as follows:

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

We use the t -statistic to test the hypothesis that the average *CARs* over any given time interval are equal to zero.¹³

3.3 Variables used in cross-sectional regressions

Our empirical tests evaluate whether or not connected transactions are associated with certain firm characteristics that might be proxies for “propping” or “tunneling.” More specifically, we examine if the announcement effect of a transaction is associated with variables that are used to proxy for the probability of propping or tunneling as represented by the following regression model:¹⁴

$$\begin{aligned} CAR = & \lambda_0 + \lambda_1 STPT + \lambda_2 Rights + \lambda_3 TranValue + \lambda_4 TranValue \times STPT \\ & + \lambda_5 TranValue \times STPT \times Connected + \lambda_6 TranValue \times Rights \\ & + \lambda_7 TranValue \times Rights \times Connected + \lambda_8 Leverage \\ & + \lambda_9 Leverage \times STPT \times Connected + \lambda_{10} Leverage \times Rights \times Connected \\ & + \lambda_{11} ABH + \lambda_{12} Cash + \lambda_{13} Tobin's\ q + \lambda_{14} LogAssets + \lambda_{15} Big\ 4\ auditor \\ & + \lambda_{16} Qualified\ opinion + \lambda_{17} Board\ size + \lambda_{18} Independent\ director + \lambda_{19} CEO\ duality \\ & + \lambda_{20} Central + \lambda_{21} Local + \lambda_{22} Topshare + \lambda_{23} Control\ minus\ ownership \\ & + \lambda_{24} Political\ connection + \varepsilon, \end{aligned} \quad (4)$$

where the explanatory variables are defined as follows.

¹³ Due to the institutional background specific to China discussed in Section 2, outsiders generally cannot evaluate the fairness of many connected transactions and many connected transactions are not avoidable in China. Therefore, our results from the short-window market reactions to the announcements of connected transactions can only represent tunneling or propping perceived by investors. We thank the referee for bring up this issue.

¹⁴ The variable ROE is not included here. It is used in place of STPT and Rights for a robustness check in Table 5.

STPT is a dummy variable that equals to 1 if the listed firm is designated as an ST, PT or *ST firm and 0 otherwise. It indicates the poor financial condition of the firm. *Rights* is a dummy variable that equals to 1 during the year in which the listed firm has already obtained the right to issue new shares and 0 otherwise. It indicates the sound financial condition of the firm. *Connected* is a dummy variable that equals to 1 when the transaction is connected and 0 when it is non-connected. *TranValue* is the transaction value divided by the total assets of the listed firm at the beginning of the year. We expect a stronger market reaction to a larger transaction value. Whether it is positive or negative 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 “STPT” period, the reaction to connected transactions would be positive; when the firm is in the “Rights” period, the reaction to connected transactions would be negative. That is, we expect a positive coefficient on the interaction term of $TranValue \times STPT \times Connected$ and a negative coefficient on the interaction term of $TranValue \times Rights \times Connected$. That is, we expect that $\lambda_5 > 0$ and $\lambda_7 < 0$.

ROE, which is not explicitly included in Eq. (4), is the return on the book value of equity at the beginning of the year. This variable indicates the financial performance of the firm before the transaction takes place. *ROE* is the crucial ratio for the CSRC to determine if a firm is to be designated as ST, PT, or *PT or whether or not it should approve a firm’s application for issuing new shares. We use *ROE* in place of *STPT* and *Rights* to check the robustness of our proxy for the listed firm’s financial condition. We expect a negative relation between *CAR* and *ROE* for a connected transaction.

Leverage is total liabilities divided by total assets at the beginning of the year. According to Friedman et al.’s (2003) theory, *Leverage* has different implications when the firm is in different financial conditions. If the firm is in poor financial condition, controlling shareholders have

incentives to support the firm by issuing more debt to the listed firm with little or no interest in return. Therefore, we expect a positive coefficient on the interaction term of $Leverage \times STPT \times Connected$, which suggests that $\lambda_9 > 0$. In contrast, if a firm is in sound financial condition, controlling shareholders have incentives to tunnel by issuing more debt to the listed firm with substantially higher interest in return. Thus, we expect a negative coefficient on the interaction term of $Leverage \times Rights \times Connected$. That is, we expect that $\lambda_{10} < 0$.

ABH is a dummy variable that equals to 1 if the listed A-share firm also issues B shares or H shares and 0 otherwise. All Chinese listed firms are uniformly regulated by Chinese jurisprudence. But the firms that also issue H shares or B shares must adopt international accounting standards. This dummy variable is used as a proxy for the effect of the legal environment in enforcing corporate governance. We expect that it has a positive effect on the market reaction, i.e., $\lambda_{11} > 0$.

$Cash$ is total available cash divided by total assets at the beginning of the year. This variable indicates how much cash the firm has generated. $Cash$ may affect the controlling shareholder's decision on how much it should extract from or inject into the listed firm. We expect a negative relationship between $Cash$ and CAR , i.e., $\lambda_{12} < 0$. $Tobin's\ q$ is the sum of the market value of equity and the book value of liabilities to the book value of total assets at the beginning of the year. We use the share price 20 days before the announcement day of the transaction to calculate the market value of equity. $Tobin's\ q$ measures the growth opportunity of the firm. When a firm has a higher growth opportunity, it is more costly for its controlling shareholders to tunnel the firm's assets. On the other hand, a growth firm is more profitable, which suggests that tunneling is more likely. Therefore, the sign of λ_{13} is indeterminate. $LogAssets$ is the log of total assets which controls for the size of the company. The larger the company, the more noticeable the

transaction announcement will be. However, the sign of λ_{14} may depend on the nature of the news.

Big 4 auditor is a dummy variable that equals to 1 if the listed firm is audited by a “Big 4” auditing company and 0 otherwise. Firms using “Big 4” auditing companies are less likely to conduct transactions that breach listing rules, thus, we expect $\lambda_{15} > 0$. *Qualified opinion* is a dummy variable that equals to 1 if the firm has received a qualified statement by the auditing company and 0 otherwise. We expect a negative relationship between *Qualified opinion* and *CAR*, i.e., $\lambda_{16} < 0$.

We have three variables that control for corporate governance issues. *Board size* is the total number of directors on the board. *Independent director* is the percentage of independent directors on the board. We expect a positive effect of both variables on *CAR*, since good corporate governance helps to reduce potential expropriation from minority shareholders by the controlling shareholders, i.e., $\lambda_{17} > 0$ and $\lambda_{18} > 0$. *CEO duality* equals to 1 if the CEO also serves as the Chairman of the board, equals to 0.5 if the CEO also serves as the Vice Chairman of the board, and 0 otherwise. We expect a negative effect between *CEO duality* and *CAR*, as the likelihood of expropriation from minority shareholders increases if the CEO also serves as the Chairman or the Vice Chairman of the board, i.e., $\lambda_{19} < 0$.

We have four more variables representing the factors that might lead to tunneling and propping behaviors of the controlling shareholders. *Central* and *Local* are dummy variables that equal to 1 if the firm’s ultimate shareholder is the central and local government, respectively, and 0 otherwise. The government may have goals other than profit-maximization, such as maintaining employment and social stability. It may use the listed firms as a vehicle to meet these policy goals which could conflict with the interests of the shareholders (Bai, Li, Tao, and

Wang, 2000). Therefore, we presume that having the government as the controlling shareholder has a negative effect on an announced transaction, i.e., $\lambda_{20} < 0$ and $\lambda_{21} < 0$. However, the degree of the negative effect between central and local government controlled firms might be different. Jiang et al. (2010) find that tunneling is more severe for local-government-controlled firms. They argue that it is because the local government is less likely to be prosecuted for misappropriation of state funds. Therefore, we expect that $\lambda_{21} < \lambda_{20}$.

Topshare is the percentage of shares held by the controlling shareholders. The more shares controlled, the easier it is for the controlling shareholders to tunnel from the minority shareholders when a firm is in sound financial condition; it is also easier for them to prop up the firm during bad times. As a result, the effect between *Topshare* and *CAR* depends on the financial condition of the firms, i.e., $\lambda_{22} < 0$ when firms are financially healthy, and $\lambda_{22} > 0$ when firms are in financial distress. *Control minus ownership* is the simple difference between the share of control rights and the share of cash-flow rights of the controlling shareholder. Claessens et al. (2002) find that tunneling becomes more severe when the controlling shareholders' controlling right exceeds their ownership right. However, similar to *Topshare*, we believe that it is also easier for them to prop up the firms in bad times. Thus, we expect $\lambda_{23} < 0$ when firms are financially healthy, and $\lambda_{23} > 0$ when firms are in financial distress.

The last variable is *Political connection*, a dummy variable that equals to 1 if the firm's CEO or Chairman is a former or current government bureaucrat and 0 otherwise.¹⁵ Fan et al. (2007) find that firms with politically connected CEOs underperform those without politically connected CEOs in China. As capital markets in China are far from liberalized, we predict that

¹⁵ We specially thank Professors Joseph Fan and Tianyu Zhang for sharing their data used in Fan et al. (2007) with us. We are able to match 1,144 transactions in our sample out of a total of 1,980 transactions. Due to the reduced sample size, this variable is used only as an additional control variable in Model III of Table 6.

government intervention is negatively related to firm performance and the governance quality of firms. We therefore expect that $\lambda_{24} < 0$.

3.4 Summary statistics

Table 3 presents descriptive statistics of the variables discussed above for our sample firms. These data are obtained from the Genius database compiled by Shenzhen Genius Information Technology Ltd. We measure all variables at the beginning of the fiscal year during which a transaction takes place. We calculate the mean and the median for each variable. We group the whole sample of transactions into six subgroups based on whether a transaction is connected or non-connected and three different financial-condition periods. We also test the differences in means between any two of the first four subgroups. Several observations can be made from the statistics reported in Table 3. The transaction value and total assets are the smallest among the “STPT” groups and the largest among the “Other” groups (especially in the “Connected” subgroups). *ROE* and cash holdings are significantly higher while leverage is significantly lower among the “Rights” groups than among the “STPT” groups. For STPT firms, the transaction value is significantly larger and the cash balance significantly lower for firms with connected transactions than for firms with non-connected transactions.. Additionally, the central government is less likely to control the former than the latter. For “Rights” firms, the local government is more likely to control firms with connected transactions than firms with non-connected transactions.

[Insert Table 3 Here]

4. Empirical Results

In this section, we examine the announcement returns to evaluate the propping and tunneling hypotheses. We differentiate connected transactions from non-connected ones. We also differentiate firms with different financial conditions (“STPT”, “Rights”, and “Other” periods) and with different types of transactions.

4.1 Cumulative Abnormal Returns

Table 4 reports the *CARs* with different event windows spanning between the 10 days before and the 10 days after the announcement day. In Panel A, we report the results for the whole sample. We also separate the whole sample into six different subgroups: “Connected and STPT,” “Non-connected and STPT,” “Connected and Rights,” “Non-connected and Rights,” “Connected and Other” as well as “Non-connected and Other.” Panel B reports the test results of the differences in *CARs* between any two of the first four subgroups in Panel A. Panel C reports *CARs* and tests of differences for connected transactions only. We separately examine each transaction type, state-owned connected transactions, as well as non-state-owned connected transactions, based on the three types of financial condition of the listed firms.

[Insert Table 4 here]

For the whole sample, there is no clear pattern to the average *CARs* across different event windows. We only observe a slightly decreasing cumulative abnormal return after the announcement of the transaction. More specifically, the average $CAR(-1,0)$, $CAR(-1,+1)$, $CAR(+1,+10)$ and $CAR(-10,+10)$ are significant with the values of 0.34%, 0.21%, -0.95% and -1.19%, respectively. Other average *CARs* (i.e., $CAR(-10, -2)$, $CAR(-3, +3)$ and $CAR(-5, +5)$) are not significant. The unreported results show that the medians of the *CARs* are similar to their means.

After separating the whole sample into six subgroups, we find a much clearer pattern for the *CARs* in some of the subgroups. The *CARs* in the “Connected and STPT” subgroup are significantly positive in all event windows except for $CAR(+1,+10)$. In contrast, the *CARs* in the “Connected and Rights” subgroup are significantly negative in all event windows except for $CAR(-10,-2)$. For example, the “Connected and STPT” subgroup has an average $CAR(-5, 5)$ of 2.27%, while the “Connected and Rights” subgroup has an average $CAR(-5, 5)$ of -2.82%. In contrast, only a few *CARs* are significant in the non-connected transactions. In Panel B, the tests of the differences in the mean *CARs* between subgroups show some clear patterns. For instance, $CAR(-1,1)$, $CAR(-3,3)$ and $CAR(-5,5)$ are significantly more positive in the “Connected and STPT” subgroup than in the “Non-connected and STPT” subgroup. The differences in *CARs* between the “Connected and Rights” subgroup and the “Non-connected and Rights” subgroup are highly significantly negative in almost all event windows. The *CARs* in the “Other” subgroup lie between the “Connected and Rights” subgroup and the “Non-connected and Rights” subgroup.

Overall, the results in Panel A and Panel B of Table 4 strongly support our two hypotheses. That is, controlling shareholders use connected transactions to prop up listed firms when the listed firms are in poor financial condition, while they use connected transactions to tunnel from the listed firms when the listed firms are in sound financial condition. In contrast, no evidence can be found to show that the controlling shareholders use non-connected transactions to prop up or tunnel from the listed firms.

Panel C of Table 4 reports the results only for connected transactions. We first study asset acquisitions, asset sales, asset displacements, and equity transfers separately based on whether the firms are in “STPT”, “Rights” or “Other” periods. Due to the small sample size, we only

calculate the overall means of the cash payments. We find that, for both connected transactions of asset acquisitions and asset sales, the *CARs* are significantly positive and are the largest during the “STPT” period, and the *CARs* are negative and are the lowest during the “Rights” period. For example, for asset acquisitions, $CAR(-5, 5)$ is 3.16% during the “STPT” period and it is -4.03% during the “Rights” period; for asset sales, $CAR(-5, 5)$ is 3.97% during the “STPT” period and it is -1.59% during the “Rights” period. For cash payments, all *CARs* are negative in almost all the event windows, which is consistent with the view that cash payments to the connected parties are definitely not beneficial to the listed firms. We do not find significant results for asset displacements and equity transfers, although the *CARs* are positive during the “STPT” period and are negative during the “Rights” period. The *CARs* for the “Other” period again lie in the middle of the two periods.

We also separate the sample based on whether the connected party is state-owned or non-state-owned. Both results show a substantial difference in *CARs* between the “STPT” and “Rights” periods. However, the connected transactions conducted by state-owned parties yield a significant difference in *CARs* between the “STPT” and “Rights” periods at the one percent level in almost all the event windows, while the non-state-owned parties show a less significant difference. The results suggest that the state-owned parties have more incentives or are more effective in using connected transactions to achieve their “propping” or “tunneling” goals.

The overall results in Table 4 strongly support the use of “tunneling” in connected transactions when the listed firms are in sound financial condition, and the use of “propping” when the listed firms are in poor financial condition. Controlling shareholders show very similar behavior in all types of connected transactions when their listed firms are in either sound or poor

financial condition. In addition, state-owned parties have more incentives or are more effective in using connected transactions to accomplish their “propping” or “tunneling” objectives.

To provide a more intuitive means to see the effects of “propping” or “tunneling,” we plot the *CARs* from day -10 to day $+10$ around the event date for the six subgroups separately. Figure 1 shows the results. We can see clearly that the *CAR* line of the “Connected and STPT” group is at the very top and is the most positive, while the *CAR* line of the “Connected and Rights” group is at the very bottom and is the most negative. The *CAR* line of the other groups lies in between.

[Insert Figure 1 Here]

4.2 Cross-sectional Regression Analyses

To understand the “propping” or “tunneling” motives of controlling shareholders, in this section, we present the results from the multivariate regression Eq. (4). $CAR(-5, 5)$ is chosen as the dependent variable, since it represents the common pattern in all the event windows.

Table 5 reports the correlation coefficients between variables mentioned in the last section together with $CAR(-5,5)$ for the whole sample, the three sub-samples based on financial condition, the connected sub-sample, and the non-connected sub-sample. In general, the correlations between different variables and $CAR(-5,5)$ are consistent with our expectations with a few exceptions. In the whole sample correlation matrix, *Qualified opinion*, *Board size* and *CEO duality* yield opposite results to our expectations. *Local* is positively correlated with $CAR(-5,5)$ which is against our expectation. However, none of the above exceptions are significant. *ROE* is highly correlated with STPT and Rights with correlation coefficients of -0.294 and 0.116 , respectively, which is consistent with the fact that *ROE* is the major judging criteria in ST and rights issuing policies. To check the robustness of our results for alternative measures of

financial condition, *STPT* and *Rights* dummies are replaced with *ROE* in the regression analysis. The results remain virtually the same, and so are not reported in the paper but are available upon request.

[Insert Table 5 Here]

Table 6 reports the regression results for the full sample from Eq. (4). Model I includes all the variables without interaction terms and *Political connection*. The coefficient of *Rights* is negatively significant at the ten percent level, while the coefficient of *STPT* loses its significance. *TransValue* is significantly positively correlated with the dependant variable at the one percent level. The coefficient of *Leverage* is positive and significant at the five percent level, suggesting that firms with higher leverage are more likely to conduct propping-motivated connected transactions. The coefficient of another control variable, *Cash*, is negative and significant at the one percent level, which is consistent with our expectation and suggests that firms with larger cash balance are more likely to conduct tunneling-motivated connected transactions.

Model II adds interaction terms. The coefficient of the interaction term $TranValue \times STPT \times Connected$ is significantly positive at the one percent level. The result suggests that when a firm is in poor financial condition, the market reacts very positively to connected transactions, and the higher the transaction value, the more positive the reaction. That is, investors perceive that the controlling shareholders use this connected transaction to prop up their financially poor listed firm. The coefficient of the interaction term $TranValue \times Rights \times Connected$ is negative and significant at the five percent level. The result suggests that when a firm is in sound financial condition, the market reacts negatively to a connected transaction, and the higher the transaction value, the more negative the reaction. In other words, investors perceive that the controlling shareholders use this connected transaction to

tunnel from their financially sound listed firm. The results of other variables are quite similar to the results in Model I.

Model III further includes the last control variable, *Political connection*. Since we are only able to match the data obtained from Fan et al. (2007) with 1,144 of our transactions (among 1,980 transactions in total), we use Model III only to test its effect. Other variables still remain robust, and the coefficient of *Political connection* is negatively significant at the ten percent level, which supports our expectation that firms with political connection are more likely to conduct tunneling-motivated connected transactions and Fan et al.'s (2007) finding that government intervention is negatively related to firm performance. The results in Models I – III show that whether or not a firm is local or central government controlled has no influence on the announcement effect of connected transactions. We also find that corporate governance proxies, such as board size, the number of independent directors, CEO duality, and the divergence between control rights and cash-flow rights, do not have any impact on the announcement effect of connected transactions.

[Insert Table 6 Here]

Although Models I and II are sufficient to test our hypothesis that controlling shareholders tunnel in good times and prop up their firm in bad times, Model IV in Table 6 is specifically designed to test our hypothesis within the same firms. Out of our whole sample of 787 firms, there are 60 firms that conduct transactions in at least two different periods among “STPT”, “Rights,” or “Other”. There are a total of 242 transactions conducted by them, which are separately tested in Model IV. Despite substantially smaller sample size, the results remain fairly robust. More specifically, controlling shareholders in the same firm do tunnel when their firm is financially healthy, but they also prop up their firm when it is in financial distress.

Model V in Table 6 is used to test Friedman et al.'s (2003) argument that firms issuing debt can credibly commit propping in countries with weak legal environments and in government-backed or bank-supported firms during bad times. Hence, in this model, we add two interaction terms on *Leverage*: $Leverage \times STPT \times Connected$ and $Leverage \times Rights \times Connected$. The results strongly support Friedman et al.'s argument. More specifically, while $Leverage \times STPT \times Connected$ is positively and significantly correlated with $CAR(-5, 5)$ at the one percent level, $Leverage \times Rights \times Connected$ is negatively and significantly correlated with $CAR(-5, 5)$ at the five percent level. The evidence shows that when firms are in poor financial condition, controlling shareholders have incentives to support the firm by issuing more debt to the listed firm with little or no interest in return. On the other hand, when firms are in sound financial condition, controlling shareholders have incentives to tunnel by issuing more debt to the listed firm with significantly higher interest in return. Most of the control variables yield insignificant results.

4.3 Cross-sectional Regressions: Sub-sample Analysis

Table 7 shows the regression results for the five subsets of the sample: the “STPT”, “Rights”, “Other”, “Connected”, and “Non-Connected” sub-samples. In the “STPT” sub-sample, the coefficient of the interaction term $TranValue \times Connected$ is significantly positive at the one percent level, which again supports the “propping” effect of connected transactions when the listed firms are in poor financial condition. The coefficient of the same interaction term is significantly negative at the five percent level in the “Rights” sub-sample, which supports the “tunneling” effect of the connected transactions when listed firms are in sound financial condition. The coefficient of the interaction term $TranValue \times Connected$ is insignificant in the

“Other” sub-sample. The coefficient on *Cash* is negative and significant in the “Other” sub-sample, which suggests that the higher the cash balance, the lower the *CAR*, which, in turn, shows some evidence of “tunneling” among cash-rich firms in the “Other” sub-sample. The coefficient signs of *Control minus ownership* are as predicted in the “STPT” and “Rights” sub-samples, although neither of them is significant.

[Insert Table 7 Here]

In the “Connected” sub-sample, the coefficient of the interaction term $TranValue \times STPT$ is significantly positive at the ten percent level and the coefficient of $TranValue \times Rights$ is significantly negative at the five percent level. These results again support the “propping” effect of connected transactions in listed firms in poor financial condition and the “tunneling” effect in listed firms in sound financial condition. The coefficient of *Cash* is negative and significant at the ten percent level and the coefficient of *Leverage* is positive and significant at the one percent level. These results suggest that since firms with lower *Cash* and higher *Leverage* are more likely to face financial distress, their controlling shareholders are more likely to “prop up” the listed firms. In the “Non-Connected” sub-sample, none of the key variables are significantly correlated with *CAR*.

4.4 Cross-sectional Regressions: Different Types of Transactions

Table 8 shows the regression results for the four different types of transactions: asset acquisitions, asset sales, asset displacements, and equity transfers. The cash payment sub-sample is dropped from the report due to its small sample size. As shown in Table 8, the coefficient of the interaction term $TranValue \times STPT \times Connected$ only remains significant in the asset sales sub-sample and the coefficient of $TranValue \times Rights \times Connected$ loses its significance in all

the sub-samples. The loss of significance may be due to the small sample size. Fortunately, the signs of the coefficients of these two interaction terms remain the same as those reported in the previous tables. All these results support our previous findings from the aggregate sample, although the significance levels are significantly reduced.

[Insert Table 8 Here]

5. Conclusions

Friedman et al. (2003) develop a model in which it is optimal for controlling shareholders to prop up a listed firm when there is a moderate adverse shock so that the firm can stay in business. If there is no shock or the shock is very small, controlling shareholders would choose to tunnel. In this paper, we use connected transaction data from China during the period 1998-2004 to directly test the predictions of their model. In China, connected transactions are a direct means for controlling shareholders to engage in tunneling or propping, as a large number of listed firms are “carve outs” from existing state-owned enterprises. Moreover, a Chinese firm faces two types of risk after its listing: (1) delisting and (2) losing the right to issue new shares. With such unique market characteristics, we are able to distinguish between firms that are in sound financial condition and firms that are in poor financial condition.

We argue that when a listed firm is in sound financial condition, controlling shareholders are more likely to use connected transactions to tunnel from the listed firm to benefit other member firms. On the other hand, when a listed firm is in poor financial condition, controlling shareholders are more likely to use connected transactions to prop up the listed firm so that they can continue to enjoy the private benefits of control. Our empirical results support our hypotheses. More specifically, if a listed firm has obtained the right to issue new shares, there is

a negative market reaction to the announcement of connected transactions, which supports the tunneling argument. In contrast, if a listed firm is facing the risk of delisting, there is a positive market reaction to the announcement of connected transactions, which supports the propping argument. We also find evidence that tunneling and propping can happen in the same firm during different periods. There is not much difference among the different transaction types in our study, which suggests that all of those transaction types can be used for tunneling or propping depending on the financial situations of the firms. Further analyses show that our results support Friedman et al.'s argument that firms issuing debt can credibly commit propping when the firms are in poor financial conditions.

Our results also support the previous findings that government intervention is negatively correlated with firm performance and governance quality. However, we find no significant differences in the announcement effect of connected transactions between central and local government controlled firms. Furthermore, the divergence between control rights and ownership has no impact on the announcement effect of connected transactions.

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Table 1
Industry Distribution of listed firms engaged in connected and non-connected transactions

The sample consists of 787 firms listed on the SHSE and SZSE that conducted connected transactions/non-connected transactions during the period 1998-2004. The industry classification is from the Genius database provided by Shenzhen Genius Information Technology Ltd.

Industry	# of firms	# 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%

Table 2
Connected and non-connected transactions by different classifications

The sample consists of 1,980 transactions announced by the firms listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange during the period 1998-2004. All variables are measured in the fiscal year of the announced transactions. *STPT* is the period during which the listed firm is designated as ST, PT or *ST. *Rights* is the year during which the listed firm has already obtained the right to issue new shares. *Other* is the period other than the STPT and Rights periods.

The five transaction types include:

Asset acquisitions: Transactions involving the acquisition of tangible or intangible assets by the listed company from the controlling shareholders.

Asset sales: Transactions involving the sale of tangible or intangible assets by the listed company to the controlling shareholders.

Asset displacements: Transactions involving the acquisition or sale of tangible or intangible assets by the listed company from/to the controlling shareholders.

Cash payments: Transactions involving direct cash payments by the listed company to the controlling shareholders.

Equity transfers: Transactions involving the transfer of equity stakes between the listed company and the controlling shareholders.

(n=1980)	Connected transactions	Non-connected transactions	Total	Percentage		Connected transactions	Non-connected transactions	Total	Percentage
By year					By transaction type				
1998	80	38	118	6.00%	Asset acquisitions	376	178	554	28.00%
1999	139	72	211	10.70%	Asset sales	332	305	637	32.20%
2000	179	68	247	12.50%	Asset displacements	303	44	347	17.50%
2001	326	108	434	21.90%	Cash payments	34	1	35	1.80%
2002	246	160	406	20.50%	Equity transfers	266	141	407	20.60%
2003	248	174	422	21.30%	By whether or not the firm issues A-shares only				
2004	93	49	142	7.20%	A-share with B/H-share	96	40	136	6.90%
					A-share	1,215	629	1,844	93.10%
By financial condition					By whether or not it is state-owned				
STPT	238	120	358	18.10%	Central government	207	139	346	17.50%
Rights	80	39	119	6.00%	Local government	937	411	1,348	68.10%
Other	993	510	1,503	75.90%	Non-state-owned	167	119	286	14.40%

Table 3
Descriptive statistics for connected transactions/non-connected transactions

This table reports the descriptive statistics of connected/non-connected transactions in China. The “STPT” period is the period during which the listed firm is designated as ST, PT or *ST. The “Rights” period is the period during which the listed firm has obtained the right to issue new shares. The “Other” period is the rest of the periods. We measure all variables at the beginning of the fiscal year of the announcement. *Transaction value* is the transaction value in thousand RMB and *TranValue* is transaction value divided by total assets. *ROE* is the return on the book value of equity. *Cash* is total available cash divided by total assets. *Leverage* is total liabilities divided by total assets. *Tobin’s q* is the sum of the market value of equity and the book value of liabilities to the book value of total assets at the beginning of the year. *ABH* is a dummy variable that equals to 1 when the listed A-share firm also issues B shares or H shares and 0 otherwise. *Big 4 auditor* is a dummy variable that equals to 1 when the listed firm is audited by a “Big 4” auditing company and 0 otherwise. *Qualified opinion* is a dummy variable that equals to 1 if the firm has received a qualified statement by the auditing company and 0 otherwise. *Board size* is the total number of directors on the board. *Independent director* is the percentage of independent directors on the board. *CEO duality* equals to 1 if the CEO also serves as the Chairman of the board, equals to 0.5 if the CEO also serves as the Vice Chairman of the board, and 0 otherwise. *Central* and *Local* are dummy variables that equal to 1 when the firm’s ultimate shareholder is the central and local government, respectively, and 0 otherwise. *Topshare* is the percentage of shares held by the controlling shareholders. *Control minus ownership* is the simple difference between the share of control rights and the share of cash-flow rights of the controlling shareholder. *Political connection* is a dummy variable that equals to 1 if the firm’s CEO or Chairman is a former or current government bureaucrat and 0 otherwise. The t-statistics are applied to the tests of differences between subgroups. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	All sample (n=1980)		The “STPT” period				The “Rights” period			
	Mean	Median	Connected (n=238)		Non-connected (n=120)		Connected (n=80)		Non-connected (n=39)	
			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 assets	136,468	85,092	78,082	57,450	61,537	48,970	152,286	104,529	153,795	117,391
TranValue	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
ABH	0.069	0.000	0.071	0.000	0.067	0.000	0.088	0.000	0.000	0.000
Big 4 auditor	0.058	0.000	0.067	0.000	0.033	0.000	0.088	0.000	0.154	0.000
Qualified opinion	0.062	0.000	0.176	0.000	0.158	0.000	0.000	0.000	0.000	0.000
Board size	9.296	9.000	9.483	9.000	8.904	9.000	9.789	9.000	9.289	9.000
Independent director	0.058	0.000	0.057	0.000	0.073	0.000	0.049	0.000	0.063	0.000
CEO duality	0.186	0.000	0.170	0.000	0.171	0.000	0.269	0.000	0.192	0.000
Central	0.175	0.000	0.143	0.000	0.258	0.000	0.213	0.000	0.179	0.000
Local	0.681	1.000	0.647	1.000	0.633	1.000	0.725	1.000	0.487	0.000
Topshare	0.514	0.523	0.517	0.535	0.536	0.539	0.444	0.439	0.454	0.496
Control minus ownership	3.166	0.001	4.421	0.001	3.533	0.001	2.772	0.000	3.755	0.001
Political connection	0.431	0.000	0.500	0.500	0.408	0.000	0.500	0.500	0.360	0.000

Table 3 (continued)

	The “Other” period				Test of Difference			
	Connected (n=993)		Non-connected (n=510)		STPT Connected v.s. STPT Non-connected	Rights Connected v.s. Rights Non-connected	STPT Connected v.s. Rights Connected	STPT Non-connected v.s. Rights Non-connected
	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 assets	165,684	95,161	120,712	81,692	2.181**	-0.050	-5.325***	-6.954***
TranValue	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**
ABH	0.073	0.000	0.063	0.000	0.166	1.918*	-0.470	1.659*
Big 4 auditor	0.063	0.000	0.035	0.000	1.318	-1.085	-0.604	-2.740**
Qualified opinion	0.039	0.000	0.045	0.000	0.430	-	4.127***	2.692**
Board size	9.253	9.000	9.305	9.000	1.853*	1.231	-0.903	-0.791
Independent director	0.066	0.000	0.042	0.000	-1.145	0.735	0.622	0.453
CEO duality	0.184	0.000	0.188	0.000	-0.019	1.004	-2.205**	0.358
Central	0.157	0.000	0.198	0.000	-2.695***	0.418	-1.469	0.999
Local	0.730	1.000	0.620	1.000	0.255	2.599***	-1.279	1.620
Topshare	0.526	0.538	0.502	0.509	-1.341	-0.293	4.207***	3.185***
Control minus ownership	2.848	0.001	3.132	0.001	1.159	-0.846	1.860	-0.196
Political connection	0.387	0.000	0.492	0.000	1.074	1.182	0.000	0.396

Table 4
Mean cumulative abnormal returns (CAR in %) around the announcement date (AD)

This table reports the mean cumulative abnormal returns (in %) with different event windows. The abnormal returns are computed using the market model. AD denotes the initial announcement date. Numbers in parentheses are p-values for the test in which the mean is equal to zero. Panel A reports the CARs for different event windows. Panel B reports the test results of the differences in CARs between subgroups. Panel C reports CARs for connected transactions with different classifications. The t-values in Panel C denote the t-statistics that test the difference in returns between the STPT period and the Rights period. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: CAR in % around the announcement date for the full sample (n=1,800)										
Event windows	All	The “STPT” period			The “Rights” period			The “Other” period		
		A.	B.		C.	D.		E.	F.	
	Total (n=358)	Connected (n=238)	Non-connected (n=120)	Total (n=119)	Connected (n=80)	Non-connected (n=39)	Total (n=1,503)	Connected (n=993)	Non-connected (n=510)	
(AD-10, AD-2)	-0.108 (0.55)	0.996*** (0.00)	1.190*** (0.01)	0.621 (0.21)	-0.139 (0.79)	0.163 (0.41)	-0.758 (0.30)	-0.363* (0.10)	-0.475** (0.04)	-0.146 (0.75)
(AD-1, AD)	0.344*** (0.00)	1.015*** (0.00)	1.237*** (0.00)	0.580** (0.02)	-0.190 (0.54)	-0.844** (0.05)	1.151*** (0.00)	0.232*** (0.00)	0.178* (0.06)	0.337** (0.02)
<i>(AD-1, AD+1)</i>	<i>0.212**</i> <i>(0.03)</i>	<i>1.119***</i> <i>(0.00)</i>	<i>1.417***</i> <i>(0.00)</i>	<i>0.540*</i> <i>(0.07)</i>	<i>-0.385</i> <i>(0.32)</i>	<i>-1.157**</i> <i>(0.03)</i>	<i>1.199***</i> <i>(0.00)</i>	<i>0.048</i> <i>(0.65)</i>	<i>-0.022</i> <i>(0.86)</i>	<i>0.183</i> <i>(0.34)</i>
<i>(AD-3, AD+3)</i>	<i>0.105</i> <i>(0.51)</i>	<i>1.539***</i> <i>(0.00)</i>	<i>2.128***</i> <i>(0.00)</i>	<i>0.386</i> <i>(0.40)</i>	<i>-0.755</i> <i>(0.12)</i>	<i>-1.991***</i> <i>(0.00)</i>	<i>1.780**</i> <i>(0.02)</i>	<i>-0.164</i> <i>(0.38)</i>	<i>-0.339</i> <i>(0.12)</i>	<i>0.177</i> <i>(0.63)</i>
<i>(AD-5, AD+5)</i>	<i>-0.111</i> <i>(0.59)</i>	<i>1.399***</i> <i>(0.00)</i>	<i>2.265***</i> <i>(0.00)</i>	<i>-0.312</i> <i>(0.55)</i>	<i>-1.379**</i> <i>(0.02)</i>	<i>-2.820***</i> <i>(0.00)</i>	<i>1.575*</i> <i>(0.08)</i>	<i>-0.370</i> <i>(0.13)</i>	<i>-0.662**</i> <i>(0.02)</i>	<i>0.196</i> <i>(0.66)</i>
(AD-10, AD+10)	-0.952*** (0.00)	1.237** (0.03)	1.694** (0.02)	0.329 (0.67)	-1.756** (0.03)	-2.647*** (0.01)	0.071 (0.96)	-1.411*** (0.00)	-1.774*** (0.00)	-0.706 (0.38)
(AD+1, AD+10)	-1.194*** (0.00)	-0.709* (0.07)	-0.638 (0.22)	-0.850 (0.11)	-1.427*** (0.01)	-1.966*** (0.00)	-0.323 (0.75)	-1.291*** (0.00)	-1.495*** (0.00)	-0.899** (0.02)

Panel B: Tests of differences between subgroups								
Event windows	A-B		C-D		A-C		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
<i>(AD-1, AD+1)</i>	<i>0.876</i>	<i>1.666*</i>	<i>-2.357</i>	<i>-2.946***</i>	<i>2.574</i>	<i>3.891***</i>	<i>-0.659</i>	<i>-1.173</i>
<i>(AD-3, AD+3)</i>	<i>1.742</i>	<i>2.312**</i>	<i>-3.771</i>	<i>-3.839***</i>	<i>4.119</i>	<i>4.596***</i>	<i>-1.394</i>	<i>-1.546</i>
<i>(AD-5, AD+5)</i>	<i>2.577</i>	<i>2.837***</i>	<i>-4.395</i>	<i>-3.789***</i>	<i>5.085</i>	<i>4.649***</i>	<i>-1.887</i>	<i>-1.828*</i>
(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

Table 4 (continued)

Panel C: Connected transactions with different classifications (n=1,311)										
Event windows	Asset acquisitions					Asset Sales				
	Total n=376	STPT n=42	Rights N=18	Other n=316	t-value	Total n=332	STPT n=78	Rights n=19	Other n=235	t-value
(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 ^{***}
<i>(AD-1, AD+1)</i>	-0.164	1.026	-3.261	-0.142	3.396^{***}	0.533	2.237	-1.356	0.142	2.379^{**}
<i>(AD-3, AD+3)</i>	-0.642	2.669	-4.277	-0.865	4.156^{***}	0.959	3.614	-0.800	0.242	2.329^{**}
<i>(AD-5, AD+5)</i>	-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

Event windows	Asset Displacements					Equity transfers					Cash payments
	Total n=303	STPT n=70	Rights n=12	Other n=221	t-value	Total N=226	STPT n=39	Rights n=30	Other n=197	t-value	Total 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
<i>(AD-1, AD+1)</i>	0.662	1.697	0.609	0.346	0.670	-0.306	0.293	-0.570	-0.382	0.847	-0.484
<i>(AD-3, AD+3)</i>	0.672	2.225	-0.219	0.232	1.090	-0.922	-0.716	-1.978	-0.801	0.806	-0.977
<i>(AD-5, AD+5)</i>	0.528	1.488	-1.766	0.347	1.180	-1.248	0.329	-3.198	-1.263	1.943[*]	-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

Event windows	State-owned					Non-State-owned				
	Total n=1,144	STPT n=183	Rights n=74	Other n=887	t-value	Total n=167	STPT n=55	Rights n=6	Other n=106	t-value
(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
<i>(AD-1, AD+1)</i>	-0.027	1.033	-1.283	-0.131	3.260^{***}	1.448	2.630	0.396	0.889	1.069
<i>(AD-3, AD+3)</i>	-0.144	1.855	-1.963	-0.395	3.982^{***}	0.986	3.010	-2.329	0.124	1.802
<i>(AD-5, AD+5)</i>	-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 5
Correlations among variables used in regressions

This table reports the correlation coefficients between variables used in our cross-sectional regressions. The abnormal returns are computed using the market model. All the financial variables are measured at the beginning of the year during which the transaction takes place. *Connected* is a dummy variable that equals to 1 when the transaction is connected and 0 when it is non-connected. *STPT* is a dummy variable that equals to 1 when the listed firm is designated as ST, PT or *ST firm and 0 otherwise. *Rights* is a dummy variable that equals to 1 during the year in which the listed firm has already obtained the right to issue new shares and 0 otherwise. *TranValue* is the transaction value divided by total assets. *ROE* is the return on the book value of equity. *Cash* is total available cash divided by total assets. *Leverage* is total liabilities divided by total assets. *Tobin's q* is the sum of the market value of equity and the book value of liabilities to the book value of total assets. *ABH* is a dummy variable that is equal to 1 when the listed A-share firm also issues B shares or H shares, and 0 otherwise. *LogAssets* is the log of total assets. *Big 4 auditor* is a dummy variable that equals to 1 if the listed firm is audited by a “Big 4” auditing company and 0 otherwise. *Qualified opinion* is a dummy variable that equals to 1 if the firm has received a qualified statement by the auditing company and 0 otherwise. *Board size* is the total number of directors on the board. *Independent director* is the percentage of independent directors on the board. *CEO duality* equals to 1 if the CEO also serves as the Chairman of the board, equals to 0.5 if the CEO also serves as the Vice Chairman of the board, and 0 otherwise. *Central* and *Local* are dummy variables that equal to 1 when the firm's ultimate shareholder is the central and local government, respectively, and 0 otherwise. *Topshare* is the percentage of shares held by the controlling shareholders. *Control minus ownership* is the simple difference between the share of control rights and the share of cash-flow rights of the controlling shareholder. *Political connection* is a dummy variable that equals to 1 if the firm's CEO or Chairman is a former or current government bureaucrat and 0 otherwise. Panel A reports the results for the whole sample. Panel B reports the results for subsamples based on financial conditions. Panel C reports the results for subsamples based on whether or not the transaction is connected. * denotes significance at or greater than the 5% level.

Panel A: The whole sample

All (n=1,800)	CAR (-5.5)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Connected	-0.011																		
2. STPT	0.032	0.000																	
3. Rights	-0.051[*]	0.010	-0.114 [*]																
4. TranValue	0.070[*]	0.138 [*]	0.075 [*]	-0.011															
5. ROE	-0.052[*]	-0.039	-0.294 [*]	0.116 [*]	-0.081 [*]														
6. Cash	-0.090[*]	-0.055 [*]	-0.214 [*]	0.005	-0.056 [*]	0.180 [*]													
7. Leverage	0.041	-0.031	0.186 [*]	-0.102 [*]	-0.071 [*]	-0.236 [*]	-0.207 [*]												
8. Tobin's q	-0.020	-0.020	0.174 [*]	0.052 [*]	0.132 [*]	-0.070 [*]	0.006	-0.014											
9. ABH	0.014	0.028	0.000	-0.007	-0.010	-0.042	-0.086 [*]	0.023	-0.159 [*]										
10. LogAssets	-0.006	0.057 [*]	-0.236 [*]	0.076 [*]	-0.140 [*]	0.125 [*]	0.090 [*]	0.052 [*]	-0.523 [*]	0.181 [*]									
11. Big 4 Auditor	0.001	0.050 [*]	0.007	0.053 [*]	-0.012	0.034	0.064 [*]	-0.090 [*]	-0.105 [*]	0.288 [*]	0.183 [*]								
12. Qualified Opinion	0.040	-0.003	0.178 [*]	-0.067 [*]	-0.011	-0.059 [*]	-0.091 [*]	0.103 [*]	-0.059 [*]	0.004	0.046 [*]	-0.008 [*]							
13. Board size	-0.003	0.017	0.000	0.036	-0.048 [*]	0.014	0.002	0.042	-0.023	0.117 [*]	0.138 [*]	0.114 [*]	0.035						
14. Independent Director	0.002	0.083 [*]	0.032	-0.008	-0.017	0.065 [*]	-0.033	-0.028	-0.016	0.049 [*]	0.000	-0.008	0.002	-0.087 [*]					
15. CEO duality	0.044	0.003	-0.036	0.038	0.006	-0.048 [*]	0.054 [*]	-0.007	-0.022	-0.090 [*]	0.007	-0.070 [*]	0.016	0.001	0.029				
16. Central	-0.045	-0.026	-0.053 [*]	0.043	-0.005	0.001	0.084 [*]	-0.089 [*]	-0.038	-0.053 [*]	0.071 [*]	-0.036	-0.066 [*]	0.003	-0.060 [*]	0.044			
17. Local	0.025	0.070 [*]	-0.004	-0.032	0.007	0.067 [*]	-0.011	-0.044	-0.103 [*]	0.123 [*]	0.089 [*]	0.075 [*]	0.029	0.015	-0.073 [*]	-0.004	-0.634 [*]		
18. Topshare	-0.001	0.048 [*]	0.046	-0.105 [*]	0.035	-0.026	-0.033	-0.044	-0.141	-0.091 [*]	-0.056 [*]	-0.036	-0.042	-0.046	0.046	0.017	0.006	-0.055 [*]	
19. Control minus Ownership	0.039	-0.016	0.097 [*]	-0.014	0.024	-0.066 [*]	-0.039	0.023	0.049 [*]	-0.036	-0.071 [*]	-0.048 [*]	0.010	0.056 [*]	0.040	0.083 [*]	-0.054 [*]	-0.110 [*]	0.026

Table 5 (continued)

Panel B: Subsamples based on financial conditions

SPTP (n=358)	CAR(-5,5)	Connected	TranValue	ROE	Cash	Leverage
Connected	<i>0.191*</i>					
TranValue	<i>0.130*</i>	0.144*				
ROE	<i>-0.118*</i>	-0.090*	-0.113*			
Cash	<i>-0.080</i>	-0.195*	-0.064	0.226*		
Leverage	<i>0.009</i>	-0.039	-0.091*	-0.229*	-0.106*	
Tobin's q	<i>-0.028</i>	-0.048	0.157*	-0.116*	0.076	-0.007
Rights (n=119)	CAR(-5,5)	Connected	TranValue	ROE	Cash	Leverage
Connected	<i>-0.312*</i>					
TranValue	<i>-0.037</i>	0.094				
ROE	<i>-0.060</i>	0.100	0.114			
Cash	<i>-0.041</i>	-0.063	-0.074	0.176*		
Leverage	<i>0.080</i>	-0.073	-0.051	0.096	0.051	
Tobin's q	<i>-0.132</i>	0.042	0.090	0.426*	0.329*	0.023
Other (n=1,503)	CAR(-5,5)	Connected	TranValue	ROE	Cash	Leverage
Connected	<i>-0.033</i>					
TranValue	<i>0.061*</i>	0.142*				
ROE	<i>0.000</i>	-0.028	-0.046			
Cash	<i>-0.090*</i>	-0.034	-0.035	0.133*		
Leverage	<i>0.036</i>	-0.027	-0.090*	-0.202*	-0.207*	
Tobin's q	<i>-0.010</i>	-0.022	0.116*	0.028	0.013	-0.062*

Table 5 (continued)

Panel C: Subsamples based on whether or not the transaction is connected

Connected (n=1,311)	CAR(-5,5)	STPT	Rights	TranValue	ROE	Cash	Leverage
STPT	<i>0.092*</i>						
Rights	<i>-0.091*</i>	-0.116*					
TranValue	<i>0.103*</i>	0.076*	-0.016				
ROE	<i>-0.077*</i>	-0.331*	0.127*	-0.075*			
Cash	<i>-0.115*</i>	-0.249*	0.006	-0.070*	0.201*		
Leverage	<i>0.079*</i>	0.183*	-0.108*	-0.088*	-0.262*	-0.239*	
Tobin's q	<i>0.011</i>	0.157*	0.066*	0.150*	-0.082*	0.006	-0.014
Non-connected (n=669)	CAR(-5,5)	STPT	Rights	TranValue	ROE	Cash	Leverage
STPT	<i>-0.101*</i>						
Rights	<i>0.044</i>	-0.111*					
TranValue	<i>-0.026</i>	0.079*	-0.002				
ROE	<i>0.005</i>	-0.216*	0.095*	-0.081*			
Cash	<i>-0.037</i>	-0.151*	0.004	0.004	0.135*		
Leverage	<i>-0.043</i>	0.190*	-0.089*	-0.017	-0.189*	-0.155*	
Tobin's q	<i>-0.098*</i>	0.209*	0.023	0.097*	-0.046	0.003	-0.015

Table 6**Regression results of cumulative abnormal returns on firm and transaction characteristics: The whole sample**

This table reports the regression results of CAR(-5,5) on firm and transaction characteristics for the whole sample. All the financial variables are measured at the beginning of the year during which the transaction takes place. *Connected* is a dummy variable that equals to 1 when the transaction is connected and 0 when it is non-connected. *STPT* is a dummy variable that equals to 1 when the listed firm is designated as an ST, PT or *ST firm and 0 otherwise. *Rights* is a dummy variable that equals to 1 during the year in which the listed firm has already obtained the right to issue new shares and 0 otherwise. *TranValue* is the transaction value divided by total assets. *Cash* is total available cash divided by total assets. *Leverage* is total liabilities divided by total assets. *Tobin's q* is the sum of the market value of equity and the book value of liabilities to the book value of total assets. *ABH* is a dummy variable that equals to 1 when the listed A-share firm also issues B shares or H shares and 0 otherwise. *LogAssets* is the log of total assets. *Big 4 auditor* is a dummy variable that equals to 1 when the listed firm is audited by a "Big 4" auditing company and 0 otherwise. *Qualified opinion* is a dummy variable that equals to 1 if the firm has received a qualified statement by the auditing company and 0 otherwise. *Board size* is the total number of directors on the board. *Independent director* is the percentage of independent directors on the board. *CEO duality* equals to 1 if the CEO also serves as the Chairman of the board, equals to 0.5 if the CEO also serves as the Vice Chairman of the board, and 0 otherwise. *Central* and *Local* are dummy variables that equal to 1 if the firm's ultimate shareholder is the central and local government, respectively, and 0 otherwise. *Topshare* is the percentage of shares held by the controlling shareholders. *Control minus ownership* is the simple difference between the share of control rights and the share of cash-flow rights of the controlling shareholder. *Political connection* is a dummy variable that equals to 1 if the firm's CEO or Chairman is a former or current government bureaucrat and 0 otherwise. Model I is based on the whole sample and does not include interaction terms. Model II is from the whole sample and includes interaction terms. Model III is the same as Model II but also includes *Political connection*. Model IV is estimated from the same firms that conduct connected or non-connected transactions during at least two different financial condition periods. Model V is used to explicitly test the Friedman et al.'s (2003) hypothesis on the role of leverage on propping.

Table 6 (continued)

Model	I (n=1,980)		II (n=1,980)		III (Political connection) (n=1,144)		IV (Same firm) (n=242)		V (Friedman model) (n=1,980)	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Intercept	0.005	0.070	0.012	0.160	0.009	0.100	0.398	1.940	0.013	0.180
Rights	-0.016	-1.960	-0.011	-0.930	-0.018	-1.310	0.001	0.060	0.008	0.640
STPT	-0.003	-0.420	-0.010	-1.190	-0.010	-0.750	0.153	2.730	-0.020	-2.480
TranValue	0.046	3.090	0.042	2.380	0.055	2.600	0.054	1.090	0.038	2.290
TranValue×STPT			-0.047	-1.000	-0.023	-0.370	-0.089	-1.100		
<i>TranValue×Connected×STPT</i>			0.125	2.900	0.123	1.920	0.092	1.760	0.076	2.050
TranValue×Rights			0.056	0.540	0.198	1.410	0.246	1.410		
<i>TranValue×Connected×Rights</i>			-0.129	-1.920	-0.242	-1.830	-0.300	-1.890	-0.041	-1.760
Leverage	0.020	1.820	0.021	1.970	0.025	1.680	-0.006	-0.130	0.016	1.380
<i>Leverage×Connected×STPT</i>									0.021	2.400
<i>Leverage×Connected×Rights</i>									-0.076	-1.920
Cash	-0.043	-2.340	-0.041	-2.250	-0.038	-1.610	-0.116	-1.700	-0.040	-2.200
Tobin's q	0.001	0.190	0.001	0.300	-0.002	-0.330	-0.035	-2.920	0.001	0.270
LogAssets	0.003	0.900	0.002	0.680	0.000	0.110	-0.005	-0.340	0.002	0.730
ABH	-0.003	-0.370	-0.002	-0.210	-0.011	-0.800	-0.028	-0.830	-0.001	-0.100
Big 4 auditor	0.004	0.490	0.004	0.440	0.007	0.630	-0.058	-2.300	0.003	0.350
Qualified opinion	0.013	1.550	0.014	1.570	0.008	0.670	(dropped)		0.013	1.470
Board size	0.000	0.010	0.000	-0.010	-0.001	-1.120	-0.001	-0.190	0.000	-0.010
Independent director	-0.011	-0.540	-0.008	-0.430	0.004	0.180	0.010	0.130	-0.008	-0.400
CEO duality	0.010	1.790	0.011	1.890	0.003	0.380	-0.006	-0.260	0.011	1.880
Central	-0.004	-0.560	-0.003	-0.420	-0.003	-0.330	-0.016	-0.510	-0.003	-0.420
Local	0.006	0.860	0.007	1.050	0.014	1.470	0.019	0.720	0.008	1.130
Topshare	-0.002	-0.120	0.000	-0.030	0.028	1.370	-0.103	-1.540	-0.001	-0.080
Control minus ownership	0.000	0.690	0.000	0.510	0.000	1.130	0.000	-0.020	0.000	0.540
Political connection					-0.007	-1.670				
Industry and Year fixed-effects	Yes		Yes		Yes		Yes		Yes	
R-squared	0.050		0.077		0.096		0.033		0.035	

Table 7

Regression results of cumulative abnormal returns on firm and transaction characteristics: Subsample analysis

This table reports the regression results of $CAR(-5,5)$ on firm and transaction characteristics for subsamples classified by financial conditions and by connected transactions. All the financial variables are measured at the beginning of the year during which the transaction takes place. *Connected* is a dummy variable that equals to 1 when the transaction is connected and 0 when it is non-connected. *STPT* is a dummy variable that equals to 1 during the year in which the listed firm is designated as ST, PT or *ST firm and 0 otherwise. *Rights* is a dummy variable that equals to 1 during the year in which the listed firm has already obtained the right to issue new shares and 0 otherwise. *TranValue* is the transaction value divided by total assets. *Cash* is total available cash divided by total assets. *Leverage* is total liabilities divided by total assets. *Tobin's q* is the sum of the market value of equity and the book value of liabilities to the book value of total assets. *ABH* is a dummy variable that equals to 1 if the listed A-share firm also issues B shares or H shares and 0 otherwise. *LogAssets* is the log of total assets. *Big 4 auditor* is a dummy variable that equals to 1 if the listed firm is audited by a “Big 4” auditing company and 0 otherwise. *Qualified opinion* is a dummy variable that equals to 1 when the firm has received a qualified statement by the auditing company and 0 otherwise. *Board size* is the total number of directors on the board. *Independent director* is the percentage of independent directors on the board. *CEO duality* equals to 1 if the CEO also serves as the Chairman of the board, equals to 0.5 if the CEO also serves as the Vice Chairman of the board, and 0 otherwise. *Central* and *Local* are dummy variables that equal to 1 if the firm's ultimate shareholder is the central and local government, respectively, and 0 otherwise. *Topshare* is the percentage of shares held by the controlling shareholders. *Control minus ownership* is the simple difference between the share of control rights and the share of cash-flow rights of the controlling shareholder. *Political connection* is a dummy variable that equals to 1 if the firm's CEO or Chairman is a former or current government bureaucrat and 0 otherwise.

	STPT (n=358)		Rights (n=119)		Other (n=1,503)		Connected (n=1,311)		Non-connected (n=669)	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Intercept	-0.328	-2.010	-0.324	-1.290	0.001	0.020	0.088	0.850	-0.044	-0.420
TranValue	0.011	0.240	0.094	0.880	0.031	0.980	0.063	3.200	0.015	0.440
<i>TranValue</i> × <i>Connected</i>	0.111	2.380	-0.109	-1.920	0.005	0.160				
<i>TranValue</i> × <i>STPT</i>							0.037	1.660	-0.047	-1.050
<i>TranValue</i> × <i>Rights</i>							-0.094	-2.060	0.018	0.210
Leverage	-0.004	-0.160	0.079	1.180	0.027	1.820	0.036	2.580	-0.010	-0.590
Cash	-0.085	-1.280	0.065	0.610	-0.037	-1.820	-0.038	-1.620	-0.037	-1.330
Tobin's q	0.016	1.680	-0.024	-1.160	0.001	0.300	0.001	0.270	-0.002	-0.310
LogAssets	0.026	2.360	-0.001	-0.080	-0.001	-0.150	0.002	0.530	0.006	1.050
ABH	-0.061	-2.340	-0.074	-2.010	0.008	0.810	-0.024	-2.160	0.050	3.270
Big 4 auditor	0.056	2.020	-0.005	-0.150	-0.001	-0.060	0.015	1.440	-0.030	-1.870
Qualified opinion	0.042	2.340	(dropped)		0.001	0.060	0.009	0.800	0.026	1.830
Board size	-0.001	-0.390	-0.002	-0.570	0.000	-0.170	0.000	0.110	-0.002	-1.130
Independent director	-0.034	-0.560	0.138	1.550	-0.016	-0.670	0.007	0.290	-0.035	-1.040
CEO duality	0.040	2.040	0.003	0.130	0.010	1.490	0.009	1.130	0.011	1.170
Central	0.018	0.710	0.043	1.450	-0.010	-1.050	-0.002	-0.210	0.005	0.410
Local	-0.005	-0.260	0.048	1.560	0.005	0.640	-0.001	-0.130	0.026	1.500
Topshare	0.032	0.640	0.051	0.880	-0.009	-0.510	0.013	0.690	-0.002	-0.090
Control minus ownership	-0.001	-0.660	0.000	0.230	0.000	0.820	0.000	-0.080	0.001	1.260
Industry and Year fixed-effects	Yes		Yes		Yes		Yes		Yes	
R-squared	0.217		0.244		0.068		0.073		0.069	

Table 8

Regression results of cumulative abnormal returns on firm and transaction characteristics: Subsample analysis based on transaction types

This table reports the regression results of $CAR(-5,5)$ on firm and transaction characteristics for subsamples classified by transaction types. All the financial variables are measured at the beginning of the year during which the transaction takes place. *Connected* is a dummy variable that equals to 1 if the transaction is connected and 0 if it is non-connected. *STPT* is a dummy variable that equals to 1 when the listed firm is designated as ST, PT or *ST firm and 0 otherwise. *Rights* is a dummy variable that equals to 1 during the year in which the listed firm has already obtained the right to issue new shares and 0 otherwise. *TranValue* is the transaction value divided by total assets. *Cash* is total available cash divided by total assets. *Leverage* is total liabilities divided by total assets. *Tobin's q* is the sum of the market value of equity and the book value of liabilities to the book value of total assets. *ABH* is a dummy variable that equals to 1 if the listed A-share firm also issues B shares or H shares and 0 otherwise. *LogAssets* is the log of total assets. *Big 4 auditor* is a dummy variable that equals to 1 if the listed firm is audited by a “Big 4” auditing company and 0 otherwise. *Qualified opinion* is a dummy variable that equals to 1 if the firm has received qualified statement by the auditing company and 0 otherwise. *Board size* is the total number of directors on the board. *Independent director* is the percentage of independent directors on the board. *CEO duality* equals to 1 if the CEO also serves as the Chairman of the board, equals to 0.5 if the CEO also serves as the Vice Chairman of the board, and 0 otherwise. *Central* and *Local* are dummy variables that equal to 1 if the firm's ultimate shareholder is the central and local government, respectively, and 0 otherwise. *Topshare* is the percentage of shares held by the controlling shareholders. *Control minus ownership* is the simple difference between the share of control rights and the share of cash-flow rights of the controlling shareholder. *Political connection* is a dummy variable that equals to 1 if the firm's CEO or Chairman is a former or current government bureaucrat and 0 otherwise.

Table 8 (continued)

	Asset acquisitions (n=554)		Asset sales (n=637)		Asset displacements (n=347)		Equity transfers (n=407)	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Intercept	0.099	1.060	-0.109	-0.910	-0.112	-0.800	-0.234	-1.220
TranValue	0.013	0.520	0.106	2.700	0.046	1.290	0.036	0.640
TranValue×STPT	0.003	0.030	-0.068	-1.140	-0.055	-0.670	-0.101	-0.590
TranValue×Connected×STPT	0.044	0.490	0.260	3.540	0.066	0.790	0.085	0.420
TranValue×Rights	-0.004	-0.050	0.025	0.100	0.080	0.490	0.338	0.590
TranValue×Connected×Rights	-0.148	-1.100	-0.054	-0.190	-0.092	-0.510	-0.432	-0.740
Leverage	-0.002	-0.100	0.020	1.080	0.035	1.390	0.038	0.990
Cash	0.003	0.120	-0.015	-0.400	-0.047	-0.970	-0.091	-1.570
Tobin's q	-0.004	-0.670	-0.001	-0.100	0.009	1.060	0.000	0.000
LogAssets	-0.007	-1.340	0.008	1.240	0.008	0.940	0.012	1.060
ABH	0.001	0.040	0.009	0.650	-0.030	-1.450	-0.013	-0.380
Big 4 auditor	0.017	1.060	-0.008	-0.540	-0.017	-0.790	0.027	0.950
Qualified opinion	0.012	0.720	0.024	1.560	0.014	0.820	-0.016	-0.500
Board size	0.000	0.340	-0.002	-1.220	0.003	1.620	0.000	-0.090
Independent director	0.010	0.330	-0.050	-1.390	-0.002	-0.040	-0.015	-0.230
CEO duality	-0.003	-0.310	0.014	1.350	0.014	1.000	0.020	0.980
Central	0.006	0.490	-0.013	-0.890	0.004	0.200	-0.031	-1.210
Local	0.008	0.700	0.020	1.750	0.012	0.810	-0.025	-1.210
Topshare	0.022	1.010	-0.022	-0.760	0.018	0.500	0.040	0.780
Control minus ownership	0.001	1.270	0.001	0.970	0.000	-0.510	-0.001	-0.630
Industry and Year fixed-effects	Yes		Yes		Yes		Yes	
R-squared	0.130		0.202		0.195		0.162	

Cumulative abnormal returns

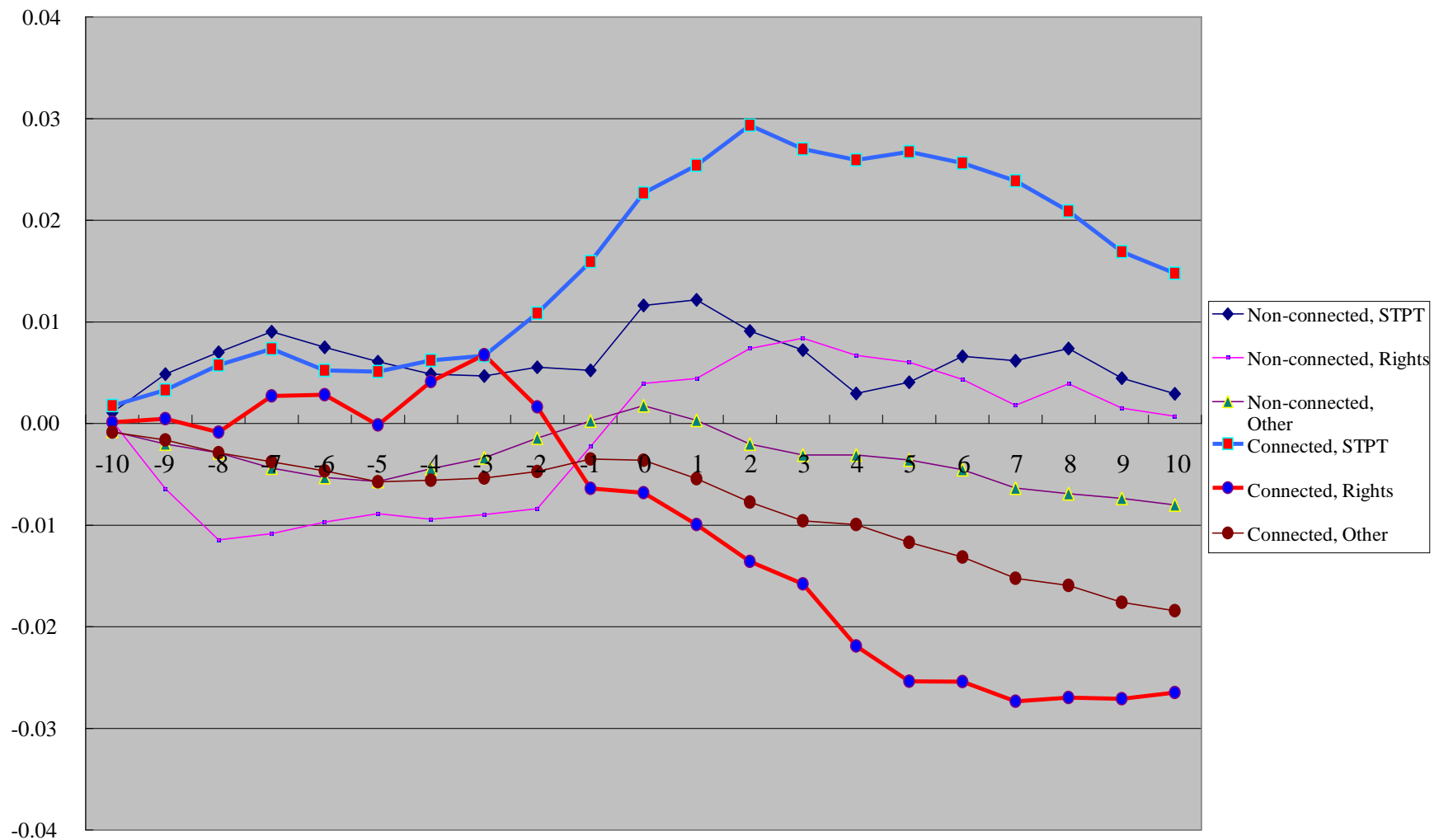


Figure 1. Cumulative abnormal returns from day -10 to day +10 around the transaction announcement day