

RELATED LENDING: EVIDENCE OF TUNNELING AND PROPPING IN CHINA

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Abstract

This paper investigates tunneling and propping between Chinese listed firms and their relevant parties from 2001 to 2005. Evidence from our research shows that controlling shareholders engage in tunneling and propping through related lending, although tunneling lending exceeds propping lending in both frequency and magnitude. Pyramidal controlling ownership structures increase the level of tunneling lending, while the presence of large, non-controlling shareholders resists tunneling lending. Controlling owners tend to divert fewer funds when firms have better investment opportunities. State ownership was not found to be detrimental to firms, contradicting some previous research. A high debt ratio is likely to be concomitant with tunneling lending. Firms in financial distress have experienced either more tunneling lending or more propping lending with controlling shareholders.

Keywords: related lending, tunneling, propping, control rights, ownership

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1. Introduction

The conflicts of interest between controlling (large) shareholders and minority shareholders have attracted broad attention. The controlling shareholders, using dominated voting right, may force the managers to make decisions on their own benefit consideration at the cost of minority shareholders' interests. Classens et al. (2002: 1770) claim that "...the risk of expropriation of minority shareholders by large, controlling shareholders is an important principal-agent problem in most countries." Johnson et al. (2000) coin the term "tunneling" for the transfer of assets and profits out from the firms by controlling shareholders for their private benefits. Interestingly, controlling shareholders in certain circumstances may use their own funds to support the firms that are in financial distress and thus to avoid bankruptcy or delisting, which Friedman et al. (2003) titles "propping"¹.

Riyanto and Toolsema (2004) develop a formal theoretical model to describe tunneling and propping. Assuming resource shifting is impossible between horizontal firms, they claim that "tunneling may justify the pyramidal structure only in the presence of myopic investors or in combination with propping" (Riyanto and Toolsema 2004: 12) to keep the lower-

level pyramidal firm from bankruptcy. Friedman et al. (2003) suggest that pyramid-controlled firms with more debt had a much less pronounced stock decline during the Asian financial crisis, and argue that this is because outside investors anticipate the potential propping.

China is in the process of transferring from a central-controlled economy to a market economy, and a number of companies have been reformed to list on the stock exchange. The new emerging market offers a new trial site for examining tunneling and propping in terms of three characteristics:

First, the weak legal institutions in place allow controlling shareholders to expropriate minority shareholders. Allen et al. (2005) show that China's law and institutions, including investor protection systems, corporate governance, accounting standards, and quality of government, are significantly less sophisticated than most of counterparts in Western — and even some developing — countries. The World Economic Forum (2006) notes a lower ranking in terms of China's quality of the institutional environment, with poor results across all 15 institutional indicators, both public and private institutions. Shleifer and Vishny (1997) suggest that when a low level of legal protection of minority shareholders exists, controlling entities may find it attractive to divert resources from firms despite their large cash flow shareholdings.

Second, an equity segment structure provides the incentive for controlling shareholders to expropriate minority shareholders. In China, the majority of outstanding shares owned by controlling owners are

¹ Propping (or prop up) means that someone supports the other one to sustain a position. Friedman et al. (2003) used the "propping" to describe how the controlling shareholders support the firms from financial distress by using their own fund to purchase the firms issued debt.

not floatable on the two stock exchanges. Although the non-floatable shares are transferable between non-floatable share owners on a negotiation basis (but are still non-floatable after the transfer), the transferable price is based on the face value of the firm, which is, on average, 20 percent of the price of floatable shares (Chen and Xiong, 2002). Given the huge share price discount, controlling shareholders are virtually isolated from the wealth effect derived from the fluctuation of the share prices determined by the market. However, conversely, the controlling shareholders may have strong incentives for expropriation, despite their large shareholding. The so-called “aligning effect” of large shareholders in addressing the agency problem (such as the active monitoring of management) does not exist in Chinese listed firms because of the equity segment structures.

Third, the listing quota and carve-out (or spin-off) listing processes impair the independence of listed firms and incur related party transactions (RPTs).² In China, because of the quota limit, many listed firms are actually spin-offs from parent companies. Normally, the most profitable or productive assets are carved out into the listed firm. The original company will retain the low profitable assets and become the parent or holding company after the carve-out and part listing. The contributions made by the controlling shareholders give them extra incentive to take back by tunneling. Furthermore, the carve-out listing process often builds up an inherent and lasting relationship between listed firms and their controlling shareholders.

The objective of this study is to examine how controlling shareholders of Chinese listed firms use related lending (not trade credit) for the purpose of tunneling and propping. Our study contributes to the literature in three ways: First, we examine tunneling and propping from several angles, including state ownership dominated firms, financially stressed firms, pyramidal ownership structured firms and so on. Second, while we acknowledge that prior empirical research on tunneling generated substantial evidence, no direct and convincing support exists for propping, despite the predictions of theoretical studies. This study fills that void, particularly for the new emerging market. Finally, and probably due to the difficulty in collecting data and with a dearth of channels to access the information on the new Chinese market, much cross-country research has not yet included China as a sample (see La Porta et al., 2002; Claessens et al., 2002). Research that focusses on Chinese firms has so far only examined small samples with short time horizons, such as the studies by Cheung et al. (2005) and Peng et al. (2006). The present study observes all

non-financial firms listed on the market from 2001 to 2005. The inclusion of nearly the entire population and which covers a wider timeframe produces a much less biased sample and allows us to present the evidence with greater confidence.

Our findings show that controlling shareholders are the key tunneling and propping players in an emerging market that has weak legal systems. Tunneling and propping are asymmetric, with high frequency and large size in tunneling rather than propping. Controlling shareholders expropriate many funds from listed firms, although the presence of other block shareholders offer some resistance. Pyramidal controlling structures foster tunneling and propping. Firms in financial distress may be partly the result of tunnelling, and then may introduce propping from the controlling shareholders if the firms are salvagable in terms of cost and resources.

The remainder of this article is organised as follows. Section 2 reviews the relevant literature on tunneling and propping and develops several hypotheses. Section 3 interprets the sample selection and defines the variables. The univariate analyses are organized in Section 4, multivariate analyses are presented in Section 5, and Section 6 concludes the research. 2. Literature Review and Hypothesis Development

2.1 Ownership Structure and Tunneling

Jensen and Meckling (1976) examine the relationship between agency costs and managerial control, and postulate that the increase in managers’ ownership reduces their consumption of perquisites, and thus generates a positive effect on stockholder wealth. Accordingly, large shareholders have the incentives and resources to monitor the management (if they are not the managers themselves) and thus reduce agency costs. As Shleifer and Vishny (1997: 754) point out, “Large shareholders thus address the agency problem in that they have both a general interest in profit maximization, and enough control over the assets of the firm to have their interest respected.”

Yet the control of large shareholders also comes at a cost. La Porta et al. (1999) state that controlling shareholders have the power and ambition to expropriate minority shareholders, especially when their control rights significantly exceed their cash flow ownership, and the legal protection of outside investors is weak. Using 1301 corporations from eight East Asian countries before the financial crisis, Claessens et al. (2002) conclude that firm value increases with the cash flow ownership of the largest shareholder (indicating an incentive effect), but falls when the wedge increases between its control rights and cash flow ownership (indicating an entrenchment effect).

After controlling for potential ownership and valuation endogeneity problems, Thomsen et al. (2006) show that a high initial level of blockholder ownership in Continental Europe has a negative effect

² In 2001, the listing quota was abolished in favor of an expert review and later, a sponsor system. However, the China Securities Regulatory Commission (CSRC) still tightly controls the number and pace of IPOs. Even under the new system, going public is still very time-consuming and costly.

on firm future performance and valuation, although this does not hold for firms in the US and UK. Dyck and Zingales (2004) explain that high private benefits of control are associated with concentrated ownership in emerging markets. From the perspective of banks, La porta et al. (2003) examine the impact of related lending between firms and banks with the same owner by using a new dataset for Mexico during the 1990s. They state that “related lending” is a more favorable term than “arm’s-length lending”. Furthermore, related loans are much more likely to default and, when they do, have considerably lower recovery rates than unrelated ones. The authors conclude that the evidence for related lending in Mexico is a manifestation of looting. Charumilind et al. (2006) provide similar evidence for Thai companies. “Crony lending,” they argue, may contribute to the high level of non-performing loans and banking collapse during a financial crisis. Cheung et al. (2006) show that Hong Kong listed firms whose ultimate owners are in mainland China are more likely to have tunneling transaction.

In China, ownership is highly concentrated. On average, the largest shareholder holds approximately 40 percent of total shares (Jian and Wong, 2004; Liu and Lu, 2004; Bai et al., 2004). Given China’s premature institutions, we propose the following hypothesis:

Hypothesis 1: Firms with controlling shareholders will report more tunneling lending.

Interestingly, when controlling owners pour more assets (over a certain level) into listed firms, the controlling shareholders may intend to practice less tunneling, because listed firms are more operationally independent. Simultaneously, controlling shareholders will also hold a higher ownership share and gain more control. Consequently, a high level of control rights may have a mixed effect on the magnitude of related lending. La Porta et al. (1999, 2002) claim that 20 percent (or even 10 percent) of control rights should be sufficient to produce effective control of a firm, especially a large firm. Given that a certain level of control is sufficient for effective control, after this point, a higher control level may lead to a lower level of tunneling. Thus, we propose the following hypothesis:

Hypothesis 2: An inverted U shape exists between control rights and tunneling lending.

Controlling shareholders are not always alone. La Porta et al. (1999), Claessens et al. (2000), and Faccio and Lang (2002) find that, on average in their cross-country firm samples respectively, 25 percent, 32 percent and 45 percent of firms with controlling shareholders have another owner with at least 10 percent of voting rights. The theoretical literature indicates that multiple block shareholders may compete for corporate control (Bloch and Hege,

2001), monitor the controlling shareholder (Pagano and Roell, 1998), or form controlling coalitions to share private benefits (Bennedsen and Wolfenzon, 2000; Gomes and Novaes, 2001).

Faccio et al. (2001) show that multiple large shareholders increase the dividend rate in Europe — although not in Asia. Lins (2003) indicates that large, non-management shareholdings are positively related to firm value in 18 emerging markets. Mitton (2002) checks the relationship between firm-level stock returns and corporate governance in 398 firms from five East Asian countries. He concludes that better stock price is associated with higher outsider ownership concentration. In China, as argued by Bai et al. (2005), no active corporate control market exists; however, other large shareholders “are obstacles to tunneling activities by the largest shareholder because these shareholders have incentive to monitor and restrain the largest shareholder,” and they also “have an incentive to monitor the management directly” (Bai et al., 2005: 607). The authors find that a high concentration of non-controlling shareholding has a positive effect on firm value. Based on the literature, the following issue is testable:

Hypothesis 3: The presence of other block shareholder resists tunneling lending of controlling shareholders.

2.2 Pyramidal Structure and Tunneling

Controlling shareholders normally have higher control rights than their proportional ownership because of the free ride taken by small outside investors. Yet they often use pyramids, crossholding and dual-class shares to enhance their control rights regardless of relatively lower cash flow rights. La Porta et al. (1999) show that controlling shareholders (or families, in many cases) exert their control through pyramidal structures and management presentation. Similarly, Faccio and Lang (2002) reveal the wide use of dual-class shares and pyramid structure in several Western European countries. Claessens et al. (2000) find the prevalence of pyramids and crossholdings especially evident in family controlled firms and small firms.

Bebchuk et al. (2000) coin the term “controlling minority structure (CMS)” for the mechanisms for separating control from cash flow rights. They demonstrate that CMS tends to cause larger agency costs than otherwise. Fan et al. (2005) examines the ownership structure of listed firms in China from 1993 to 2001. They indicate that both local government and private owners employ controlling pyramids. Based on the different reactions to the earnings shock by firms in which controlling shareholders have different cash flow rights (low or high), Bertrand et al. (2002) illustrate that a significant amount of tunneling exists among group-affiliated firms in India via non-operating

transactions. Jian and Wong (2004) provide strong evidence on Chinese group-controlled companies' tunneling through related lending — especially when firms have more free cash flow. Accordingly, we propose the following hypothesis:

Hypothesis 4: Pyramid ownership structure has a positive impact on tunneling lending.

2.3 State Ownership and Tunneling

Initially, the setup of the stock exchanges in China was intended to facilitate the restructuring of state-owned enterprises (SOEs). Most of the listed firms are carved out from SOEs in which the government still maintains considerable ownership and control. Liu and Sun (2005) find that by the end of 2001, approximately 84 percent of listed firms in China were ultimately controlled by the government.

However, the government may have political objectives other than maximizing firm value. As argued by Bai et al. (2006), to reform SOEs more smoothly, the state must enhance its involvement and control in the stock market. Yet such state involvement creates a conflict between the state as controlling shareholder and other, outside investors. Also, the state plays two roles at the same time: controlling shareholder and market regulator, which makes the protection of minority shareholder politically impractical. Much empirical evidence shows that state ownership is detrimental to firm value.

Bai et al. (2004) investigate multiple governance mechanisms and their effect on firm value of Chinese listed firms from 1999 to 2001. They find that the government being the largest shareholder has a negative effect on firm value. Cheung et al. (2005) examine 292 filings of related party transactions between state-owned listed firms and their controlling shareholders during 2001–2002 and find an inverse relationship between the percentage of state ownership and excess returns at the announcement of related party transactions. They indicate that this relationship is mainly driven by the tunneling transactions by the controlling state shareholder. Thus, we propose the following hypothesis:

Hypothesis 5: State-controlled firms will report more tunneling lending.

2.4 Investment Opportunities and Tunneling

La Porta et al. (2002) establish that controlling shareholders will expropriate less when the firms under their control have better investment opportunities. Friedman et al. (2003) and Lemmon and Lins (2003) argue that low future returns (such as in the financial crisis) will make tunneling less marginally costly. Implicitly, less tunneling will occur when future returns are high. Durnev and Kim (2005)

also justify the conclusion that controlling shareholders of firms with more profitable investment opportunities divert less frequently for private gains.

Given China's robust economy, testing for tunneling in adverse macro-economic conditions is not applicable, yet it is easy to prove it at the firm-level. In China, as cash flow ownership is concentrated in the hands of controlling shareholders, they will always benefit from cash dividends if the funds they can divert have high returns. In other words, they tend to tunnel less frequently when better investment projects are available. Thus, we propose the following hypothesis:

Hypothesis 6: Firms will report less tunneling lending when they have better investment opportunities.

2.5 Propping

Friedman et al. (2003) indicate that pyramidal controlling shareholders may use their private funds to prop up firms in moderate adverse shock. However, only scant evidence supports the propping claim. Claessens et al. (2003) examine 644 financially distressed firms in five East Asian countries during the 1997 financial crisis. They reveal that the probability of falling in bankruptcy was lower for group-affiliated firms. Yet, the role of propping cannot be overemphasized. Obata (2001) documents that although pyramidal ownership structure facilitates the propping function of firms in financial distress, controlling insiders do it at the cost of minority shareholders. Bae et al. (2002) examine rescue acquisition within Korean groups (chaebols), and find that the stock price of chaebols-affiliated firms (where controlling shareholders have low cash flow rights) declined when they announced their intention to bail out financially distressed firms in the chaebols. Simultaneously, the controlling shareholders benefited because the value of other firms in the group increased, where controlling shareholders had high cash flow rights. While minority shareholders in propped firms also benefit, all these benefits come at the cost of minority shareholders in firms where controlling owners have less cash flow rights. Bai et al. (2005) also indicate that the value spent in propping by controlling shareholders depends on the possible value expected to receive by them in future tunneling.

In China, when a firm experiences a negative profit for two consecutive years, it is deemed as a "special treatment" (ST) firm. Certain trading restrictions and special auditing requirements are imposed on ST firms by the China Securities

Regulatory Commission (CSRC).³ The ST firms have a disadvantage in borrowing and operation, and are confronted with delisting risks that can mean big losses for the controlling shareholders. Thus, the controlling owners may want to throw off the ST “hat” as soon as possible by propping these firms. Therefore, the ST designation provides a meaningful opportunity to test the propping hypothesis. Bai et al. (2004) find that investments in firms with an ST “hat” earned abnormally high returns (approximately 32 percent). They attribute this to the propping from controlling shareholders to avoid the poorly performed firms from delisting.⁴ However, in consideration of Hypothesis 1, that the tunneling lending with controlling shareholders may lead firms to financial distress, we propose the following hypothesis.

Hypothesis 7: Firms in financial distress report more of either tunneling lending or propping lending.³
Sample Selection and Variable Measurement

3.1 Sample Selection

The sample consists of all A share (Pure A, A+B, and A+H) firms listed on the Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) during the 2001 to 2005.⁵ We excluded firms issued only B or H shares because the International Accounting Standards (IAS) are applied to these, and these differ from the Chinese Generally Accepted Accounting Principles (CGAAP). We excluded financial firms because their financial conditions are not comparable

³ According to the regulations from the China Securities Regulatory Commission (CSRC), a listed firm will be deemed to be an ST firm if it has suffered a loss for two consecutive years. The daily price change for a ST firm is limited to five percent from its previous closing price. ST firms’ semi-annual reports must be audited. An ST firm will be temporarily delisted if it sustains losses for another year and it will be only traded on Friday with a maximum percentage upside limit to last Friday’s closing price, but without restriction on the down side. A temporarily delisted firm will be permanently delisted if it is not able to show profit in the following mid-year and final year financial reports.

⁴ Many ways exist to prop up a financial-stricken firm. Apart from free or low-cost financing from controlling shareholders (the focus of this paper), asset swap is frequently used between listed firms and their controlling shareholders in China, which occurs when controlling owners exchange low-productive assets in listed firm with its high-productive ones.

⁵ A shares are issued by domestic firms and are traded in Chinese RMB (1 USD = 8.28 RMB in the sample) by domestic investors and QFII (qualified foreign institutional investors). B shares are stocks issued by domestic firms but traded in HK dollars in SZSE, and US dollars in SSE only by foreign investors until May 2001, when domestic investors could also hold these shares. H shares are issued by domestic firms to foreign investors through listings on the Hong Kong Stock Exchange. Firms with only H share issuance are not included in this study.

to non-financial firms. Firms must have been listed for the full year to be included in the sample in each year. The sample period chosen was from 2001 to 2005, because listed firms were required to disclose their ultimate ownership from 2001, and accordingly, information was available on the nature of the ultimate owners, controlling structure and control rights. Also, in 2005, the CSRC initiated a program to address the equity division problem, which may have changed the incentives of controlling shareholders after that year. We manually collected all related lending and governance data from annual reports, which we obtained from Shanghai JuYuan Data Service Company Ltd, a major data provider in China. We extracted all other data from the *China Stock Market and Accounting Research Database* (CSMAR). CSMAR is one of the most commonly used databases for China’s stock market research, and has been used by many scholars. Table 1 presents the process of sample selection.

Table 1 about here

3.2 Variable Measurement

3.2.1 Related Lending

In China, four pairs of accounts are used for related transactions: accounts receivable and accounts payable, notes receivable and notes payable, other receivables and other payables, and prepaids and advances. Accounts receivable and notes receivable in relation to sales, and accounts payable and notes payable in relation to purchases, are always used for earnings manipulation (Jian and Wong, 2004). Thus, only other receivables and other payables, and prepaids and advances are used for related lending and borrowing. Therefore, in this research, we calculated other receivables and prepaids (OR) as the funds loaned out from the listed firm, while conversely, we calculated other payables and advances (OP) as the funds borrowed by the listed firm. Considering that in China, controlling owners and their subsidiaries constitute the majority of related parties, all related lendings are classified into controlling owner-related lending (ORCS) and borrowing (OPCS), and non-controlling shareholder-related lendings (ORNCS) and borrowing (OPNCS). Furthermore, for the convenience of discussion, and to aid the fit of broadly used concepts in the literature, the related lendings are also called “tunneling” lending, while the related borrowings are called “propping” lending.

To account for the net effect of related lending and borrowing, we also used the balance of ORCS and OPCS. Specifically, when the difference (OROPCS) between ORCS and OPCS was negative, the related lending was defined as net propping lending (PROP), while the difference between ORCS and OPCS was non-negative, the related lending was defined as net tunneling lending (TUN). The dollar

amount of lending and borrowing was deflated by the year-end total assets to remove the size effect.

Related lending is easily detected, because it is under the spotlight of the CSRC, which has issued several provisions to address it. Related lending is also either free of charge or based on the deposit rate, which is much lower than the market rate. However, the overall level of related lending might be underestimated for three reasons. First, the lending data are reported in the year-end balance sheet. The controlling shareholders may transfer money just before and after the end of the financial year for the purpose of only having to disclose a low amount of related lending. Second, several firms (mostly privately-controlled) manipulate the presentation of their balance sheet so that the appropriation of funds is not shown under the account OR. Third, many related lendings are simply intentionally not disclosed.

3.2.2 Control Rights

Lemmon and Lins (2003) argue that a significant degree of control over the firm's assets is a necessary condition for the expropriation of minority shareholders for firms in emerging economies. Given high ownership concentration in China, it is reasonable to expect the higher control threshold of 30 percent, rather than 20 percent or 10 percent suggested by La Porta, et al. (1999), Claessens et al. (2000) and Faccio and Lang (2002). Furthermore, 30 percent of ownership is recognized by the CSRC as suitable for a party to exercise effective control and thus to require an approval of acquisition. Therefore, if a shareholder has 30 percent or more of direct and indirect ownership within a firm, the firm is classified as one with controlling shareholders (CS), and the 20 percent cut-off of ownership is used in the robustness test.

How control rights (CR) are measured by considering direct and indirect ownership is crucial. Two methods are used extensively. The one employed by La Porta et al. (1999), Claessens et al. (2000), and Faccio and Lang (2002) assigns control rights based on the smallest link along the direct and indirect control chain; the other, employed by Lins (2003) and Lemmon and Lins (2003), assigns control to the nearest direct and indirect control level. The two control rights are the same when the nearest control level is the smallest along the control chain. While the first is quite conservative in its ability to measure the control correctly, the second captures the actual controlling power by a party, which is directly related to how controlling shareholders are capable of undertaking tunneling activities. As the data regarding the nearest control level is mostly available, the second method is better for examination of a large sample. Therefore, we used Lins' (2003) method for measuring control rights in this research.

A pyramidal structure (PYRAMID) is popularly used by controlling shareholders to separate cash flow rights from control rights. Yet the definition of a

pyramid is not the same in literature. According to La Porta et al's (2000) practice, there must be a publicly traded firm between the ultimate owner and the sample firm to constitute a pyramid. However, in terms of Claessens et al. (2000) and Faccio and Lang (2002)'s works, merely the existence of one intermediate firm (whether public or not) defines a pyramid.

3.2.3 Debt Level and Other Variables

Debt (DEBT) plays different roles in tunneling and propping. On one hand, as Friedman et al. (2003) argue, debt represents a commitment by the pyramidal controlling shareholders to prop up and bail out the firm when a moderately adverse shock occurs. However, when it comes to a serious shock, debt also makes it possible for controlling shareholders to abandon or loot the firm. On the other hand, the use of debt may restrict how much a controlling owner can expropriate, given the loan covenants. Debt is defined as the sum of long-term debt and short-term debt, excluding non-financial liabilities such as accounts payable, deferred taxes and other provisions for liabilities.

Larger firms tend to have better visibility and coverage in the financial press, even though more assets may be available for tunneling. Conversely, given that small firms are highly likely to have ownership separated from control (Claessens et al. 2000), more expropriation could be associated with small firms. The firm size (SIZE) is calculated from the total assets of the firm.

The growth of sales (SALE) represents investment opportunity. A high level of sales indicates the potential of further profitability from investment. The variables for firms in financial distress (ST), firms with the state as controlling shareholder (STATE), and firms that have other block shareholders (BLOCK) are discussed in the hypothesis development part of Section 2. A more detailed explanation for the variables is found in Table 2.

Table 2 about here

4. Univariate Analysis

Table 3 summarizes the basic statistics for the sample and, using 30 percent as the threshold of control rights, we show that approximately 72 percent of firms had controlling shareholders, while 33 percent of firms had another block shareholder in terms of 10 percent of threshold. On average, the largest shareholders had 45 percent of control rights, and the highest control right was at 85 percent, indicating a highly concentrated ownership in China. A pyramidal ownership structure was found to be popular for firm control, as shown by the fact that 90 percent of firms were ultimately controlled by an owner. Because most listed firms are spin-offs or carve-outs from parent

companies, this type of ownership structure is unsurprising.

State controlling shareholders account for 74 percent of the sample. The average debt ratio was found to be approximately 30 percent, although the maximum ratio was as high as 1,326 percent, indicating the presence of extremely financially distressed firms. Large differences also existed among firm sizes, and levels of sales growth varied considerably between firms.

Table 3 about here

The variables of related lending and borrowing — or tunneling and propping — are organized in Table 4. On average, controlling shareholders expropriated (ORCS) 2.53 percent of total assets through listed firms' lending in the form of other receivables and prepaids, with a maximum of 251.35 percent. All other related parties tunneled (ORNCS) 1.61 percent of total assets, with a maximum of 893.3 percent. Simultaneously, controlling shareholders and all other parties propped (OPCS and OPNCS) into listed firms — on average 0.78 percent and 0.38 percent of total assets respectively — through listed firms' borrowing in the form of other payables and advances.

Table 4 about here

The net related lending and borrowing of listed firms with controlling shareholders (OPORCS) was found to be positive, at 1.75 percent, which means that the controlling shareholders were net expropriators. Interestingly, the net related lending and borrowing of listed firms with non-controlling parties (OPORNCS) was also found to be positive, with a value of 1.23 percent. By investigating the non-controlling parties, we found that most were prior controlling shareholders. The positive OPORNCS indicates that they did not pay money back (at least not promptly) when they become non-controlling shareholders.

The ORCSNCS, which is the difference between ORCS and ORNCS, was found to be positive and significant. This means that the controlling shareholders' related lending was larger than that of all other related parties. By contrast, the OPCSNC, which is the difference between OPCS and OPNCS, was also positive. Propping from controlling shareholders was larger than that from non-controlling shareholders. The above evidence shows that the controlling shareholders dominated the other parties in both lending and borrowing. However, the ultimate dominance is in tunneling lending; that is, the activity of expropriating the minority shareholders.

Table 5 shows how the related lending and borrowing varied across the listed firms with different characteristics. First, the firms with a controlling shareholder (CS) were expropriated to a greater degree, compared with the firms without a controlling

shareholder. The firms with CS had a total lending out (OR) and net lending out (OROP) higher than that of the firms without CS, at 1.24 percent and 1.29 percent respectively. Thus, Hypothesis 1, that firms with controlling shareholders will report more tunneling lending, is verified.

Second, the firms with other block shareholders (BLOCK) reported less tunneling lending to controlling shareholders than the firms without BLOCK. The difference was -0.0102 for both total lending out and net lending out. Thus, Hypothesis 2, that the presence of other block shareholder resists tunneling lending of controlling shareholders, is verified.

Table 5 about here

Third, the firms with pyramidal controlling ownership structure (PYRAMID) had more tunneling lending to controlling shareholders than the firms without PYRAMID. The differences of 1.86 percent in total lending out and 1.74 percent net lending out to controlling shareholders support the hypothesis four that Pyramid-controlled firms will report more tunneling lending. Next, the firms with state (STATE) as controlling shareholder and the firms without STATE as controlling shareholder are indifferent in tunneling lending by observing the insignificant figures of -0.017 and 0.014. Therefore, the hypothesis five that state-owned firms will report more tunneling lending is rejected. State may be not bad to control firms as the state may have more source and don't have to expropriate the firm very much.

Finally, the firms in financial stress (ST) had experienced more lending and borrowing with controlling shareholders than the firms not in financial stress. The differences were 5.33 percent and 2.19 percent respectively. The net tunneling lending was also large for ST firms, with 3.13 percent over that of non-ST firms. These could also be explicitly observed when we grouped the firms into net tunneling lending firms and net propping firms. In the net tunneling lending group, the controlling shareholders expropriated 11.17 percent assets of ST firms; while they expropriated only 3.09 percent assets of non-ST firms — a difference of 8.08 percent. In contrast, in the net propping group, the controlling firms propped up the ST firms with 7.18 percent assets, and the non-ST firms with 1.62 percent — a difference of 5.56 percent. Thus, Hypothesis 6 is verified: that firms in financial distress report more in both tunneling lending and propping lending.

Table 6 presents related lending and borrowing on yearly basis, and shows that almost all the related lending measures of ORCS and ORNCS became smaller from 2003 — except for one ORNCS in 2005. Meanwhile, nearly all the related borrowing measures of OPCS and OPNCS were smaller in 2001 and 2002 compared to those in the following three years with only one exception: OPNCS in 2002. These findings prompt the claim that the new regulation issued by

CSRC in 2003, in which the auditors were required to display their opinions on firms' related lending in annual reports, had positive effects in the reduction of tunneling lending by the listed firms (Berkman et al., 2005).

Table 6 about here

5. Multivariate Analysis

5.1 The Regression Analysis on Tunneling Lending

Table 7 arranges the regression results of the determination of tunneling lending. The dependent variable of Models 1 and 3 comprised the firms' lending out — tunneling lending to the controlling shareholder (ORCS), while the dependent variable of Models 2 and 4 comprised the net lending out — net tunneling lending to the controlling shareholder (TUN) from the firms with net tunneling lending only. We substituted the controlling shareholder dummy (CS) and control right (CR) between models to avoid the multicollinearity.

As the prior discussion and univariate analysis, we found that the presence of controlling shareholders leads to more tunneling lending. In Models 1 and 2, all CS were found to be positive and significant at the one percent level. The findings on the negative role of controlling shareholders align with the conclusions of Shleifer and Vishny (1997) and La Porta et al. (1999), who argue that large shareholders have the power and incentives to expropriate small shareholders where legal institutions are weak. The results are also complementary to those found in other emerging economies. For example, Joh (2003) indicates that controlling shareholders in South Korea, even with small ownership, appropriate firms' resources. Bertrand et al. (2002) demonstrate the pervasive use of non-operating transactions for tunneling by controlling group owners in Indian business groups. Actually, related party transactions, such as ORCS and TUN, are also a form of non-operating transactions, given their record on the income statement.

Table 7 about here

In Models 3 and 4, CR was found to be positive, and CRSQ was significantly negative at different convention levels, showing the inverted U shape between the tunneling lending and control right specified in Hypothesis 2. As the control right increases from a low level, tunneling lending increases. When the control right extends beyond a certain level, further increases of control right are followed by the fall of tunneling lending, due to the interest alignment between the controlling shareholders and the firms. Claessens et al. (2002) explain as an entrenchment effect of control rights, which also aligns with the findings on the positive

relationship between concentrated ownership and private benefits of control put forward by Dyck and Zingales (2004).

The evidence that the presence of other block shareholders (BLOCK) reduces the tunneling lending of controlling shareholders is found repeatedly. All the coefficients of BLOCK in Models 1 to 4 are positive at a one percent significance level. Bloch and Hege (2001) prove that multiple block shareholders may compete for corporate control and thus make minority shareholders better off. Pagano and Roell (1998) argue that other block shareholders may monitor the controlling shareholder to protect their interests. Maury and Pajuste (2005) show that high contestability of other block shareholders with the largest shareholder increases firm value. Lins (2003) finds that large non-management block shareholding increases firm value in emerging markets. Thus, Hypothesis 3 is again verified.

Similarly, all the coefficients of pyramidal structure (PYRAMID) in Models 1 to 4 have a positive sign, and are significant at the one percent level. This confirms Hypothesis 4, which predicts that a pyramidal ownership structure has a positive relationship to tunneling lending. The findings are consistent with the theory that CMS (pyramid structures especially) will create large agency costs, as indicated by Bebchuk et al. (1999). The findings on the facilitating role of pyramids in tunneling reinforce the evidence put forward by Bertrand et al. (2002) in India, Bae et al. (2002) and Joh (2003) in South Korea, Jian and Wong (2004, 2006) in China, and Obata (2003) in nine East Asia countries.

In Models 1 to 4, the coefficients of the firms in financial stress (ST) are positive and significant at either the five percent or 10 percent level, indicating tunneling exists between ST firms and their controlling shareholders. The reasons could include, first, that tunneling lending results in financial distress for the firms; or second, that some ST firms are so debt-stricken that the incumbent controlling shareholders lack the necessary financial resources or think to cost to save the firm from delisting. The controlling shareholders merely want to expropriate wealth from the firm to reduce further loss. As Friedman et al. (2003) argue, controlling shareholders may continue to loot when the external adverse shock is large. Therefore, the analysis here is consistent with Hypothesis 7.

Coefficients of the growth of sales (SALE) were found to be negative in all models, yet significant at the 10 percent level. This strengthens Hypothesis 6: that controlling shareholders tunnel the firms less frequently when they have better investment opportunities. The findings coincide with the argument that investment opportunity reduces controlling shareholders' tunneling activities, as proposed by La Porta et al. (2002) and Durnev and Kim (2005). Durnev and Kim (2005) also prove that controlling shareholders of firms with more profitable investment opportunities divert less for private gains.

Possible reasons include that the controlling shareholders expect more source that can be used for further development of the firms.

Since all the coefficients regarding debt in the models are positive and significant at the one percent level, debt does not seem to constrict the tunneling activities from controlling shareholders. On the contrary, more debt leads to more tunneling. This may be explainable because controlling shareholders in China normally act as loan guarantors to their listed affiliated firms to acquire bank loans. However, the results contradict the prediction made by Friedman et al. (2003), who argue that debt may signal controlling shareholders' commitment to propping.

Firm size were found to have positive and significant coefficients across all models. Large firms had less tunneling lending, and they normally attract more attention from regulators and the media, which may explain the possible resistance to tunneling lending.

5.2 Regression Analysis on Propping Lending

Model 1 in Table 8 regresses the propping lending by the controlling shareholders (OPCS), while Model 2 in Table 8 regresses net propping lending by controlling firms (PROP) that have net propping lending only. Because only part of the firm years were shown to have net propping lending, the sample size in Model 2 was reduced from 5,713 to 1,770. The coefficients of ST in both models are positive and significant at the one percent level. The results show that when the firms are in financial distress, the controlling shareholders may be able to support the firms with their financial assets, which is also consistent with Hypothesis 7. This result does not conflict with that developed from Table 7. A controlling shareholder takes actions of either tunneling lending or propping lending, only according to the financial conditions of the listed firms and the controlling shareholder themselves.

Our findings offer direct evidence for the first time for the propping predictions indicated by Friedman et al. (2003) for the firms in Southeast Asian countries during the financial crisis, and Bai et al. (2004) for the firms in China.

Table 8 about here

State-controlled firms tend to have more propping lending, as shown by the positive coefficients at the 10 percent level. This is unsurprising, since poor performed and state controlled firms are the priorities for bail-outs by the government. The firm size has a negative sign, at one percent significance — the same as that developed from Table 7. However, this does not contradict our discussion on the results in Table 7. Large firms normally attract more attention from regulators and the media, which eliminates the possibility of

tunneling lending and propping lending. Furthermore, large firms seldom have parent companies to conduct tunneling and propping lending.

5.3 Robustness Test

5.3.1 Control rights threshold

No specific rules exist that cover the control rights threshold for identifying a controlling shareholder. La Porta et al. (1999) and Claessens et al. (2000) choose both 10 percent and 20 percent thresholds to classify the presence of controlling shareholders. We applied a 20 percent cut-off to see if this threshold option would affect the overall results. We found results to be quantitatively the same in significance as those used at the 30 percent threshold — except that coefficients of BLOCK were somewhat larger.

5.3.2 Causality between ST and OROP

Jiang et al. (2005) claim that high levels of other receivables cause the deterioration of firm performance. Because ST is applicable to firms that have two consecutive year of net loss, related lending may cause the recurrence of ST. Thus, the inclusion of ST in the regressions for estimating tunneling might be inappropriate. To control this potential weakness, we used the two-stage least square method. The results are basically the same in statistical and economic implications.

5.3.3 Endogeneity of Ownership

Many scholars argue that ownership could be endogenously determined (for example, Demsetz and Villalonga, 2001). If so, then regression results based on the use of controlling shareholders and control rights could be biased. While ownership endogeneity could be a problem in developed countries, in emerging economies, as argued by Djankov and Murrell (2002), ownership is largely determined through political and administrative processes rather than endogenously determined in markets with low transactions costs. Lins (2003) indicates that the consideration of ownership endogeneity does not change the relationship between ownership and firm valuation. Sun and Tong (2003) argue that in China, the amount and type of ownership is largely based on government policy, ideology and the quota system. They find no evidence in China that SOEs' profitability prior to privatization affected the government's consideration of how much ownership to retain after its privatization. Instead, as shown by Bai et al. (2005), the ST designation system triggers the only corporate control market between SOEs and non-SOEs in China. Overall, ownership endogeneity is not an issue in this research.

5. Conclusion

This study employed a comprehensive sample of listed firms in China from 2001 to 2005 to investigate tunneling and propping via related lending. The listed

firms in China offer an interesting trial sample to exploit the shifting of funds between controlling shareholders and listed firms in a transaction economy which has only premature institutions (such as weak legal protection of minority shareholders), concentrated state ownership, equity segment structures and close operational and managerial relationships between controlling shareholders and listed firms caused by listing quota and the spin-off listing process.

Our evidence shows that controlling shareholders engage in tunneling and propping through related lending, although tunneling exceeds propping in terms of frequency and total magnitude. While concentrated ownership and pyramidal ownership structure increase tunneling lending, non-controlling blockholders reduce the level of tunneling. Firms in financial distress have experienced either tunneling lending, or both tunneling and propping lending, during different time periods. A firm's large size can immunize it against tunneling lending and propping lending.

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Appendices

Table 1. Sample Selection

Year	2001	2002	2003	2004	2005	Total
Year-end listed firms	1104	1175	1242	1342	1356	6219
– financial firms	7	8	10	10	10	45
= non-financial listed firms	1097	1167	1232	1332	1346	6174
– firms listed less than one year	60	71	67	100	14	312
– firms with incomplete data	24	28	33	35	29	149
= observed firms	1013	1068	1132	1197	1303	5713

Year-end listed firms are A share (pure A, A+B, A+H) firms listed on the Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) during 2001–2005.

Table 2. Variable Definitions

Variable	Definition	Description
CS	Controlling shareholder or owner	Equals one (1) if the largest shareholder in a firm has at least 30% of control rights, and zero (0) otherwise.
OR	Lending out from the listed firm	Calculated from other receivables and prepaids, and then deflated by total assets.
OP	Borrowing in by the listed firm	Calculated from other payables and advances, and then deflated by total assets.
ORCS	Controlling shareholders related lending (tunneling lending)	Calculated from other receivables and prepaids related to controlling shareholders, and then deflated by total assets.
ORNCS	Non-controlling shareholders related lending (tunneling lending)	Calculated from other receivables and prepaids related to non-controlling shareholders, and then deflated by total assets.
OPCS	Controlling shareholders related borrowing (propping lending)	Calculated from other payables and advances related to controlling shareholders and then deflated by total assets.
OPNCS	Non-controlling shareholders related borrowing (propping lending)	Calculated from other payables and advances related to non-controlling shareholders, and then deflated by total assets.
OROPCS	Net tunneling or propping lending with controlling shareholders	Equal to ORCS minus OPCS. It constitutes tunneling lending if the difference is positive, and propping lending otherwise.
ORCSNCS	The margin of related lending of controlling shareholders over non-controlling shareholders	Equals the difference between ORCS and ORNCS.
OPCSNCS	The margin of related borrowing of controlling shareholders over non-controlling shareholders	Equals the difference between OPCS and OPNCS.
OROPNCS	Net tunneling or propping lending with non-controlling shareholders	Equal to ORNCS minus OPNCS. It constitutes tunneling lending if the difference is positive, and propping lending otherwise.
TUN	Net value of tunneling lending with controlling shareholders	Value of OROPCS when OROPCS is positive (for firms with positive OROPCS only).
PROP	Net absolute value of propping lending with controlling shareholders	Absolute value of OROPCS when OROPCS is negative (for firms with negative OROPCS only).
CR	Control rights	Percentage of nearest controlled shares directly and indirectly owned by the largest shareholder.
CRSQ	Quadratic term of control rights	Equals the square of CR.
STATE	State	Equals one (1) if the state is the ultimate controlling shareholder, and zero (0) otherwise.
BLOCK	Block shareholder	Equals one (1) if there is another shareholder owning at least 10% of control rights, and zero (0) otherwise.
PYRAMID	Pyramid structure of controlling ownership	Equals one (1) if the ultimate shareholder controls the firm through a non-holding intermediate company, and (1) zero otherwise.
SALE	Sales growth	Sales percentage growth over previous year.
ST	Firms in financial distress	Equals one (1) if a firm has sustained two consecutive years of negative net income, and zero (0) otherwise.
SIZE	Firm size	Logarithm of total assets in millions Chinese yuan.
DEBT	Debt ratio	Debt divided by total assets.
IND	Industry type	Follow the criteria set by the CSRC; there will be 12 industry types after excluding the financial sector. There will be 11 dummy variables after setting agriculture industry as the numeraire.

Table 3. Summary Basic Statistics

Variables	N	Mean	Median	Max	Min	StdDev
CS (dummy)	5713	0.72	1	1	0	0.45
CR (%)	5713	0.45	0.44	0.85	0.04	0.17
BLOCK (dummy)	5713	0.33	0	1	0	0.47
PYRAMID (dummy)	5713	0.90	1	1	0	0.30
STATE (dummy)	5713	0.74	1	1	0	0.44
ST (dummy)	5713	0.03	0	1	0	0.18
DEBT (%)	5713	0.30	0.28	13.26	0	0.3
SIZE (log)	5713	7.33	7.26	13.16	3.31	0.95
SALE (%)	5713	0.65	0.15	400.67	-1	8.22

Table 4. Summary Related Lending and Borrowing Statistics

Variables	N	Mean	t-stat	Median	Max	Min	StdDev
ORCS (%)	5713	0.0253***	18.88	0.0003	2.5135	0	0.0937
ORNCS (%)	5713	0.0161***	7.52	0	8.9330	0	0.1594
OPCS (%)	5713	0.0078***	20.37	0	0.6709	0	0.0312
OPNCS (%)	5713	0.0038***	7.52	0	2.1451	0	0.0377
OROPCS (%)	5713	0.0175***	13.74	0	2.4760	-0.6709	0.0961
OROPNCS (%)	5713	0.0123***	6.37	0	8.7916	-1.4263	0.1469
ORCSNCS (%)	5713	0.0091***	4.09	0	2.5040	-7.4821	0.1690
OPCSNCS (%)	5713	0.0040***	6.69	0	0.6709	-2.1451	0.0457

*** denotes significance at the 1 percent level

Table 5. t-statistics on the Significance of Difference

Panel A							
Characteristics	Dummy	N	OR	OROP			
CS	1	4113	0.0287	0.0211			
	0	1600	0.0163	0.0082			
difference			0.0124***	0.0129***			
t-statistic			5.39	5.22			
Panel B							
Characteristics	Dummy	N	ORCS	OPCS	OROPCS	TUN	PROP
BLOCK	1	1868	0.0184		0.0106		
	0	3845	0.0286		0.0208		
difference			-0.0102***		-0.0102***		
t-statistic			-4.34		-4.1		
PYRAMID	1	5144	0.0271		0.0192		
	0	569	0.0085		0.0018		
difference			0.0186***		0.0174***		
t-statistic			8.69		6.97		
STATE	1	4241	0.0248		0.0185		
	0	1472	0.0265		0.0171		
difference			-0.0017		0.0014		
t-statistic			-0.54		0.43		
ST	1	198	0.0767	0.0289	0.0477		
	0	5515	0.0234	0.0070	0.0164		
difference			0.0533***	0.0219***	0.0313*		
t-statistic			3.09	3.47	1.69		
ST	1	129				0.1117	
	0	3814				0.0309	
difference						0.0808***	
t-statistic						3.18	
ST	1	69					0.0718
	0	1701					0.0162
difference							0.0556***
t-statistic							3.39

***, ** and * denotes significance at the 1%, 5% and 10% levels respectively; t-statistics are adjusted for unequal variance.

Table 6. Related Lending and Borrowing by Years

Year	N	ORCS		ORNCS		OPCS		OPNCS	
		Mean	StdDev	Mean	StdDev	Mean	StdDev	Mean	StdDev
2001	1013	0.0265	0.0679	0.0128	0.0452	0.0061	0.0202	0.0021	0.0097
2002	1068	0.0314	0.1248	0.0131	0.0594	0.0073	0.0290	0.0027	0.0124
2003	1132	0.0226	0.0732	0.0122	0.0445	0.0080	0.0310	0.0026	0.0119
2004	1197	0.0234	0.0864	0.0088	0.0437	0.0090	0.0374	0.0025	0.0184
2005	1303	0.0233	0.1032	0.0313	0.3212	0.0082	0.0338	0.0080	0.0747
Overall	5713	0.0253	0.0937	0.0161	0.1594	0.0078	0.0312	0.0038	0.0377

Table 7. Evidence of Tunneling Lending

Dependent Variable	Model 1	Model 2	Model 3	Model 4
	ORCS	TUN	ORCS	TUN
Constant	0.0490*** 4.4100	0.0738*** 4.6481	0.0201 1.4748	0.0402** 2.0756
CS	0.0171*** 5.9912	0.0192*** 5.4658		
CR			0.1413*** 3.7302	0.1573*** 3.0701
CRSQ			-0.0982** -2.2278	-0.1050* -1.6905
BLOCK	-0.0105*** -4.5682	-0.0152*** -4.9180	-0.0080*** -3.0709	-0.0121*** -3.4897
PYRAMID	0.0241*** 9.2247	0.0322*** 10.9813	0.0221*** 8.6841	0.0295*** 10.2620
STATE	0.0022 0.7335	0.0016 0.4105	0.0024 0.8276	0.0017 0.4330
ST	0.0305* 1.7906	0.0532** 2.1597	0.0307* 1.8007	0.0540** 2.1899
SALE	-0.0021* -1.7922	-0.0034* -1.8132	-0.00230 -0.1.811	-0.0031 -1.9105
DEBT	0.0801*** 5.0264	0.0799** 5.0212	0.0805*** 5.0698	0.0800*** 5.0204
SIZE	-0.0111*** -6.3681	-0.0143*** -5.8910	-0.0109*** -6.1167	-0.0140*** -5.6430
YEAR	Yes	Yes	Yes	Yes
IND	Yes	Yes	Yes	Yes
F-value	73.58	57.92	66.61	52.79
R-Square	0.0935	0.1054	0.0951	0.1078
Obs	5713	3943	5713	3943

White heteroskedasticity-consistent standard errors are used. t-values are listed under the coefficients; ***, ** and * denotes significance at the 1%, 5% and 10% levels respectively.

Table 8. Evidence of Propping Lending

Dependent Variable	Model 1	Model 2
Constant	0.0278*** 4.3978	0.0765*** 3.9397
CS	0.0007 0.6330	-0.0035 -1.0678
BLOCK	-0.0015* -1.8856	-0.0010 -0.4292
STATE	0.0020* 1.8887	0.0055* 1.8321
PYRAMID	0.0028 1.4240	-0.0059 -0.6368
ST	0.0177*** 2.8699	0.0490*** 3.0851
DEBT	0.0070 1.6014	-0.0039 -0.6217
SIZE	-0.0035*** -4.7232	-0.0070*** -4.1013
YEAR	Yes	Yes
IND	Yes	Yes
F-value	17.09	13.06
R-Square	0.0319	0.0755
Obs	5713	1770

White heteroskedasticity-consistent standard errors are used. t-values are listed under the coefficients; ***, ** and * denotes significance at the 1%, 5% and 10% levels respectively.