

## **The impact of corruption on state asset sales – Evidence from China<sup>1</sup>**

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### **Abstract**

We document the under-pricing of state asset sales in China. Because these stakes were in partially privatized firms, there is a credible benchmark – the price of publicly traded shares – to measure the extent of under-pricing. On average, we find that blocks of government shares sell at a discount of more than 70 percent relative to tradable shares. Further, sellers that conceal their state ownership status (likely in order to elude regulatory scrutiny) sell at a further 5 percentage point discount. There are modest post-transfer improvements in profitability, based on both event study evidence and also changes in ROA. However, we also document large shifts in assets and profitability to firm subsidiaries, a pattern we interpret as suggestive evidence of increased post-transfer tunneling.

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## 1. Introduction

Governments around the world have sold state assets over the past few decades with the twin rationales of improving efficiency and raising state revenues. The broad consensus is that the net economic effect has been positive – post-privatization, companies increase sales, invest more, earn higher profits, and do so without cutting their workforces (see Megginson and Netter, 2001, for the most recent survey).

Yet privatization's history is hardly unblemished. Most notably, corruption in Russian voucher privatizations led to the theft of state assets on a very large scale (Shleifer and Treisman, 2005), undermining in large part the revenue generation rationale for shedding state assets, and concentrating ownership in the hands of a few grasping oligarchs. On the one hand, Shleifer and Treisman argue that these redistributive consequences of under-priced privatizations were outweighed by the gains from getting productive assets into the hands of those who would use them efficiently. Yet these efficiency gains are not self-evident. The shift to private ownership trades one set of principle-agent and efficiency problems for another – in the Russian context, a partially privatized gas and oil company, Gazprom, had a market valuation of \$0.05 per barrel of hydrocarbon reserves (Exxon Mobile's value was \$13.68 per barrel), implying an astronomical rate of inefficiency and/or misgovernance (MacMillan, 2002).

We study these questions on the distributive and efficiency consequences of privatization by analyzing state asset sales in China. The ownership structure of publicly traded Chinese companies affords us a unique opportunity to measure the extent of under-pricing (and hence assess the correlates of stealing) in the sales of government stakes. Many Chinese companies were partially privatized in the early 1990s through share issue privatizations, yet the government maintained very substantial (usually a majority) holdings in most firms. For the most

part, government shares of these publicly listed firms were non-tradable, and could only change hands through privately negotiated sales subject to regulatory approval. Since shares with the same cash flow rights as these government holdings were freely traded in parallel, we have a ready and credible benchmark to assess the extent of under-pricing. We find that negotiated transfers of non-traded shares occur at very steep discounts – on average more than 70 percent – relative to the benchmark of the publicly traded share price. For over 10 percent of sales, this “transfer discount” exceeds 90 percent. While liquidity considerations may account for some of this discrepancy, we suggest that much of the variation in under-pricing across firms can be explained by a model of negotiated transfers as a means of shifting value from seller to buyer.

Why transfer value in this manner? In the case of state sellers, there is a classic principal-agent problem, where insiders at the selling firm do not bear the cost of transferring shares at a discount, and may potentially do so in exchange for a side payment or to benefit friends and family. To test this assertion, we identify sellers where the underlying owner is a municipal or provincial government but has chosen to identify itself as a private company in transfer disclosure documents. These “dehat” firms (essentially the converse of the much more widely described red-hat firms, which are privately owned companies registered as government collectives in order to obtain market access and financing<sup>2</sup>) face lesser scrutiny than government firms, so insiders wishing to put through under-priced sales “on the sly” would naturally choose to mis-declare their ownership in this way. We find that dehat transfers are associated with an incremental 4 – 5 percentage point discount after controlling for other factors. The dehat discount is 10 percentage points if we do not include year fixed effects, which “overcontrols” for the timing of transfers as dehat transfers are concentrated in early years when oversight was less stringent. Also consistent with dehat incorporation as a means of eluding regulatory oversight,

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<sup>2</sup> See, for example, Huang (2003), for a description of the red hat phenomenon.

debt transfers are smaller and less likely to be control transactions relative to other government sales – both control and size are deal attributes that trigger greater scrutiny. Additionally, for private sellers of non-traded shares<sup>3</sup>, we find that the “transfer discount” is 6 percentage points higher for related party transactions (and even greater if we do not include year effects), again consistent with non-tradable share transfers as a means of transferring value to the buyer.

What is the impact on subsequent operating performance? On the one hand, the Shleifer view holds that the new (private) sellers may have stronger profit motives than sellers, so performance could plausibly improve. On the other hand, the type of investor that is willing and able to pay off officials in state-run companies in exchange for a discounted purchase price may also be the type of investor that will have the means and inclination to tunnel value out of a company where he takes a substantial stake. Thus, the connection between the block transfers we study and subsequent operating measures such as profits or investment is ambiguous.

Empirically, we find significant profit improvements following negotiated share transfers, both as measured by post-transfer return on assets, and also from event returns. However, announcement returns are lower for firms with high transfer discounts. We find no evidence of changes in other operational characteristics, including leverage, investment, or firm size.

However, we find substantial changes in the allocation of resources within the firm: Chinese companies are generally comprised of a “parent” company that is wholly owned and “son” companies where the company owns a less than complete stake. The Chinese business press abounds with examples of corporate insiders that separately own substantial shares of son companies (see section XX for details on several of these <<YONGXIANG – THESE STORIES

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<sup>3</sup> These private non-tradable shares originate through two channels: (1) in a privately controlled firm, the stake of a majority shareholder also cannot trade; (2) some private buyers obtained shares earlier from state sellers through private negotiations.

ARE STILL NEEDED>>). There are two means by which son companies may be a conduit for expropriation by insiders. First, assets may be transferred at low prices from parent to son. Second, insiders may use resources from the parent to purchase additional son companies, which afford insiders greater tunneling opportunities than parents, because of lesser oversight of son companies and also because of potentially greater agency problems in such entities.

We find that prior transfers have a large effect on the fraction of a listed firm's assets that are held in son companies. This change in composition is largely the result of an increase in son company assets. We find a similar shift in within-firm investment and leverage from parent to sons. We do not, however, find any significant post-transfer increase in son company profits – a natural outcome if son firms are a means of tunneling profits. Collectively, our results suggest a post-transfer preference for son companies, as would be the case under our tunneling story.

Our paper makes several contributions. First, we provide relatively clean evidence of value transfer – likely linked to corrupt side payments – in Chinese asset sales. Further, we present evidence on firms' post-transfer performance, and how this varies with the extent of under-pricing. Our results are broadly consistent with the Shleifer and Treisman view – on average, profits increase. However, we add a pair of important qualifications. First, investors have lesser expectations of profit improvements from more heavily discounted firms, consistent with the existence of greater stealing (or lesser efficiency improvements) by such firms. Further, following transfers we document evidence of asset shifting from parent to son firms, a pattern we argue is consistent with increased tunneling that may offset some of the potential benefits of privatization.

The rest of this paper is organized as follows: In Section 2 we provide background on relevant Chinese market attributes and institutions; Section 3 provides a description and overview of the data; Section 4 presents our results and Section 5 concludes.

## 2. Background

State assets sales in China began in the early 1990's, with the partial privatization of some state-owned enterprises through Share Issue Privatization (henceforth SIP), creating many publicly traded firms where governments – both national and provincial –continued to hold substantial stakes. In addition, millions of former state-owned firms were gradually sold to the private sector, again with governments keeping substantial stakes. These sales reached a peak during 1998-2002 as a result of the central government's widely noted policy of “state-owned firms out and private-owned firms in” (*Guo Tui, Min Jin*).<sup>4</sup>

Among the firms privatized through SIP, the government wished nonetheless to maintain levers of control. As a result, more than two thirds of outstanding shares were not allowed to trade in the stock market; these are referred to as non-tradable shares. These non-tradable shares are held by three types of owners. First, some are held by state-owned firms that are themselves owned by provincial or city governments; their holdings are referred to as *state legal person shares*. Second, non-tradable shares are directly held by the central government through its State-owned Asset Supervision and Administration Commission of the State Council (henceforth SASAC), or directly by local governments; we refer to these holdings as *state shares*<sup>5</sup>. Finally, some non-tradable shares are held by (generally well-connected) private firms; their holdings are referred to as *general legal person shares*.

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<sup>4</sup> Data on this latter set of government asset sales is very sparse. In any event, since no tradable shares exist for companies without a SIP, we do not have a benchmark value to compare the price set for asset transfers.

<sup>5</sup> Shares held by central government SOEs (*Zhongyang Qiye*) like SINOPEC are also defined as “state shares”.

While these shares do not trade on an exchange, ownership may be transferred through private negotiation. In the case of state and state legal person shares, a sale requires government approval by government regulators.<sup>6</sup> Note that when a transfer is made, the shares' classification changes according to the identity of its new owner. For example, if a provincial SOE sells a block of shares to a private company, the shares' classification will shift from state legal person to general legal person.

These "negotiated transfers" create the potential for rent-seeking: The managers of state-owned firms, which possess large non-tradable holdings in many firms, are responsible for negotiating the price of the transfer, while the firm (i.e., not the manager) suffers the resultant cost of a low price. This creates an obvious possibility for potential buyers to bribe SOE managers to set a low transfer price in exchange for a private payment (i.e., bribe).

This principal-agent problem will be a function of the extent of monitoring and oversight of negotiated transfer deals. As already noted, sales by state and state legal person sellers face greater scrutiny than those by general legal person sellers because of the need for government approval. However, many state legal person sellers were able to avoid greater oversight by registering their shareholdings in transfer deal documents as general legal person shares, thus misrepresenting the true ownership of their holdings. As a result, the seller identity simply shows up as a (private) general legal person in the deal documents. We refer to these companies – state-owned entities with holdings registered as general legal person shares – as "dehat" firms.

While it is relatively straightforward to disentangle the ultimate ownership of dehat shares, regulators may choose to avoid delving too deeply into such matters – many CEOs of state-owned firms are former local government officials, and may have close ties to regulators or their

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<sup>6</sup> See <http://preview.fec2.mofcom.gov.cn/aarticle/laws/200512/20051201243609.html> for details on regulatory statutes.

political bosses (See Fan, Wong and Zhang (2007) for one description of the political ties of CEOs in listed firms in China). Hence, “dehatting” provides a straightforward means of eluding oversight for well-connected company insiders.

### *Rules governing negotiated transfers*

All state and state legal person sales must be reported to government regulators. In addition, deals above certain size cutoffs must be reported publicly. These public reporting requirements apply equally to government and private sellers; our data are derived from these public disclosures.

According to Rule 47 in the *Temporary rules on stock issuance and trading administration* (henceforth *Trading Rules*) issued by the State Council of the People’s Republic of China in May, 1993, once a legal person entity directly or indirectly holds 5% of outstanding shares of a listed firm, it must disclose this holding information publicly within three working days. Once this 5 percent threshold has been reached, the owner of the shares must also disclose its holdings whenever it directly or indirectly buys or sells 2 percent of shares outstanding of the listed firm.<sup>7</sup>

Thus, some deals by either owners with relatively small stakes or transfers of a relatively modest size will not appear in our data. For example, if a firm holds 4 percent of outstanding shares as non-tradable shares and sells any proportion of its holdings through private negotiation, no public disclosure is required; instead it need only register this deal at the appropriate stock exchange. Also if the owner holds more than 5 percent of a listed firm, but sells only 1.99 percent, again no public disclosure is necessary.

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<sup>7</sup> On December 29, 1998, the 2 percent cutoff was increased to 5 percent. This regulator change took effect on July 1<sup>st</sup>, 1999.

For state sellers – either government agencies or state-owned firms – greater scrutiny exists. On May 15, 1996, the government issued a “notification on standardizing the administration of state-owned shares in limited liability companies.” This put in place a requirement that any transfer of state legal person shares obtain approval from local government agencies; when the transfer involves state shares, central government approval is required in addition to the approval of provincial regulatory agencies. In the latter case, stricter oversight and disclosure requirements prevented companies from eluding regulation,<sup>8</sup> which may account for the fact that we observe no dehat deals for state owners.

#### **4. Data sources and summary statistics**

The original deal-level data are from the “Negotiated transfer dataset” obtained through CCERDATA, a data provider affiliated with the China Center for Economic Research (CCER) at Peking University. This dataset covers all announced negotiated transfer deals from Feb 8, 1995 to Sep 26, 2007. The data include the date when the deal was first announced; the names of the buyer and seller; the stock code and name of the company whose shares are to be transferred; the price per share; and total number of shares transferred.

Based on the transfer price, we construct our key dependent variable *value loss*, which is defined as 1 minus the ratio of the transfer price to the average price of the corresponding tradable shares during the month prior to the announcement date. As a measure of deal size we define the ratio of transferred shares over total shares (tradable and non-tradable) as *fraction transferred*. Further, we generate an indicator variable *control* denoting a change in the

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<sup>8</sup> While China is gradually selling off firms held by local governments, it is simultaneously strengthening its control over firms owned by the central government. The latter are generally very large business groups, which may account for the very strict oversight.

controlling (i.e., largest) shareholder of the firm as a result of the deal. (In general, directors selected by this controller dominate the board and hence corporate decisions.)

For each transaction, we obtain annual data on financials such as stock turnover, sales revenues, and other balance sheet information, and data on the ownership structure of the listed firm from CSMAR, a database on Chinese capital markets (much of this database is now also available at WRDS); where necessary, this is supplemented with more detailed data from Resset ([www.resset.cn](http://www.resset.cn)), a widely used database provided and maintained by Tsinghua University. These yearly data are then matched up to each deal (there are often multiple deals in a year for a given firm). We also obtain the pre-deal monthly stock trading information from CSMAR. These data are used to construct control variables, including *turnover* (the average daily trading volume over total shares in the preceding a deal);  $\log(\text{Sales})$ ; *ROA* (ratio of earnings after interest and taxes to book value of assets),  $\log(1+\text{Tobin's } Q)$  (calculated as the ratio of market value of equity to the book value of assets), and *dividends* (total dividends divided by mean price in the year prior to the deal).

The CSMAR data are used to calculate abnormal returns for dates around the sale. We calculate returns for the [-1,1], [-15,1], and [-30,1] event windows to allow for the effects of pre-announcement information leakage about impending transfers – since the deal is the result of buyer-seller negotiation, at least some leaks are likely to occur (this is particularly likely in the case of government sales, since regulators must give approval before the transfer is announced).

Finally, these data are also used in our later examination of post-deal operating performance. For these analyses, we focus on growth in *assets* (book value of assets), profitability (*ROA*) and *investment* (ratio of investment to book value of physical assets), and *leverage* (total borrowing divided by total assets of the listed firm). In addition to providing

company-level performance regressions, we also distinguish between performance of “parent” companies – those business lines wholly owned by the firm – and “son” companies, where the firm does not have full ownership. For son companies, all data are weighted by the size of each subsidiary. Unfortunately, we only observe this weighted average of each variable for the full set of son companies, rather than the ownership weights themselves (i.e. we do not know how many son companies are owned by a listed firm, nor its stake in any individual company).

We delete all deals that involve the reallocation of state assets within a state enterprise (*Xingzheng Huabo* in Chinese). These are cases where the state simply reshuffles its assets within a business group with transfer price equal to zero. We keep transfers between different state-owned firms where the transfer price is not equal to zero. We also omit the 25 cases where the transfer takes place through secondary market auction, and the 17 deals where we cannot obtain firm-level financial information<sup>9</sup>. This yields a final sample of 2121 deals involving 649 firms.

A critical variable for our analysis is *dehat*, an indicator variable denoting whether the negotiated transfer seller is a state legal person that has registered its holdings in deal documents as general legal person shares. To construct *dehat*, we manually recorded the registered identities of sellers’ transferred shares using the original deal disclosure documents, which can be found in the China Financial Newspapers Database (henceforth CFND), provided by the Shenzhen-based Juling Information Company. In each case, the company name is listed and also whether the shares are declared as state-owned or general legal person (i.e., private) owned.

To determine whether this owner had identified itself truthfully as state or private, we begin by looking at the listed company’s IPO documents and annual reports that pre-date the transfer.

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<sup>9</sup> Some newly listed firms may not have traded for an entire year. As a result we cannot calculate turnover or Tobin’s Q; also some firms failed to report their total sales (these are likely to be financially stressed firms, which are called “ST” (Special Treatment) firms in China.

At these earlier dates, there was no incentive for misrepresentation, so we expect honest revelation. In cases where the seller is not listed in IPO reports or earlier annual reports, we search the “Business Information System database” (henceforth BISD), which provides a list of large Chinese firms by city of incorporation, along with their subsidiary companies’ ownership status (private or state). Again, we are able to identify firms where there exists a mismatch in state versus private ownership declarations. Finally, for smaller firms not listed in BISD, we performed an internet search using the seller’s name and the keywords “Guoyou Qiye” or “Guoyou Konggu Qiye” (meaning state-owned).<sup>10</sup>

Based on the registered and “true” identities of sellers, we classify sellers into four categories: *state* sellers that registered their shares as owned by the central government; *face-value LP* sellers that registered their holdings as state legal person shares; *private* sellers that registered their holdings as general legal person shares (i.e., private) and where we also find that the true owner is private; and *dehat* sellers, where holdings are registered as general legal person shares, but we determine that the owner is a state entity. Note that both *face-value LP* and *dehat* sellers are owned by state legal person entities, but in the case of *dehat* sellers, the firm has chosen to list ownership (incorrectly) as private in negotiated transfer deal documents.

On the buyer side, we do not observe any differences between registered ownership and true underlying ownership.<sup>11</sup> We define *private buyer* to denote buyers with holdings registered as general legal person shares.

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<sup>10</sup> For example, on some local governments’ homepages, firms controlled by the local government are listed. One example of a *dehat* firm thus uncovered is the China Beijing Corporation For International Economic Cooperation (CBCIEC) that registered itself as private when it sold 8,400,000 shares of Zhongyan Fangzhi (stock code: 600763) in July 17, 2001 to Xinjiang D-Long Group which is a privately-control business group controlled by the notorious Tang Brothers. However, according to the Beijing city website ([www.beijing.gov.cn](http://www.beijing.gov.cn)), CBCIEC is a state-owned firm.

<sup>11</sup> Note that it there is little incentive for such misrepresentation on the buyer side. If a state company has cash available for a stock purchase, it is likely easier for company officials to tunnel out the cash rather than converting it into overpriced share purchases in exchange for kickbacks or favors. As noted, in practice we found no such transactions in our data.

For private sellers, there may also be scope for transferring value through negotiated transfers. In particular, private sellers are for the most part firms that themselves have dispersed ownership. Thus, insiders in these selling firms may wish to transfer shares at a discount to other entities where they possess greater cash flow rights. Any transaction between related parties must be publicly disclosed, and we use this information to define an indicator variable, *RPT*, that denotes related party transactions, where such insider transactions are most likely to occur.

Finally, we will look at post-transfer operating performance of both “parent” and “son” companies within each publicly traded firm. Recall that Chinese companies are generally comprised of a “parent” company that is wholly owned, and “son” companies where the company owns a less than complete stake.

Since the parent-son distinction will be important for what follows, we provide an illustrative example.<sup>12</sup> Xiang Huju Inc (stock code 000594) is a listed firm, and its ownership structure for 2002 is shown in Figure 1. This listed firm is controlled by Mr. Wanli Tang and Mr. Wanxin Tang.<sup>13</sup>

When we talk about the parent firm’s financial statements, we are referring to data for “Xiang Huju (Parent Firm) in Figure 1, which forms the core operations of the listed firm (Xiang Huju Inc (stock code 000549). (Note that our description of parent firms may be confusing to researchers familiar with the business groups literature. In the context of an industrial group, “Parent firm” would refer to the controller of the listed firm (ie, Xinjiang D-Long (Group) Inc in

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<sup>12</sup> The ownership structure we present below is simplified for illustrative purposes. In reality, the listed firm has many son firms (while we list only 4), and the ownership chain by which the Tang brothers hold their stake is far more complicated than what we show here.

<sup>13</sup> One may wonder how the Tang brothers can control the listed firm given that they hold only a 21.92 percent stake in the listed firm. Two points are worth noting on this issue: Firstly the second-largest shareholder after Xinjiang D-Long (Group) Inc holds only a 7.95 percent stake, and by the time we get to the fifth largest, its holding is only 0.248 percent. Second, often these smaller stakes are in fact controlled by the Tang brothers as well. For Xiang Huju Inc, the third and fourth largest shareholders were listed as controlled by the Tang brothers in 2004 (interestingly, in earlier years, there was no such disclosure). Thus, shareholdings outside of the Tang brothers’ stakes are very diffuse.

Figure 1). But in Chinese accounting terminology, the parent is the core entity of the listed firm. In general, the controller of the listed firm is not itself listed, so its financial information is not publicly available.)

Listed Chinese firms are required to report two sets of financial statements: One for the parent (i.e., Xiang Huju in Figure 1); the other for the listed firm (i.e., Xiang Huju Inc (stock code 000549)). Based on those two sets of financial statements, we can back out the consolidated financials of the listed firm's holdings in all son firms (we do not have financial statements for each son firm individually). For example, if the parent firm has total assets of 200 yuan, and the listed firm's has assets of 300 yuan, then we can infer that the total assets of the son firms will be 100 yuan. Note that these 100 yuan assets do not belong completely to the listed firm's shareholders: Xiang Huju's claims range from 51 percent (Zhuzhou Qiche Dianqi) to 75 percent (Qingdao Hongben).

For each of assets, ROA, investment (investment divided by total assets), and leverage (total borrowing divided by total assets) we calculate figures for son and parent companies separately; additionally, we calculate the ratio of son assets to parent assets to assess how the composition of the listed firm's holdings shift after transfers. The data required to calculate parent and son outcome variables are derived from Rasset data (see above).

We reiterate finally that the shareholdings in son firms by the listed firm are not generally available, nor do we have data on insiders' holdings (in Figure 1, the Tang brothers) in these son firms. As a result, we will report only indirect evidence on tunneling, but will supplement this with several reports on the mechanics of parent-son tunneling from the Chinese media.

Our primary interest is in the impact of negotiated transfers on the size and performance of parents versus sons. When we examine post-transfer firm attributes, it is important to keep in

mind that transfers result in a permanent shift in the firm's ownership composition and as a result, we wish to assess performance as a function of the *stock* of transfers that has occurred up to that point in time rather than the flow of yearly transfers. To account for the history of transfers for each firm, we calculate *Prior transfers* in year  $y$  as

$$\text{Prior transfers}_y = \sum_{y_{fd} < y} \text{fraction transferred}_{fdy}$$

where  $y_{fd}$  is the year of transfer  $d$  for firm  $f$ .

### *Summary statistics*

Before proceeding to our econometric analyses, we present an overview and summary of the broad patterns in our data.

In Panel 1 of Table 1, we present the summary statistics for the full sample of negotiated transfers. Of particular note, the mean of *value loss* (1 minus the ratio of the negotiated transfer price of non-tradable shares to the average stock price of corresponding tradable shares in the month prior to the deal) is 0.73; for more than 10 percent of transfers, *value loss* exceeds 0.9, and as shown in the table, the maximum is 0.99. The mean of *fraction transferred* is 0.13; while this is a sizeable fraction of shares outstanding, there are relatively few control deals – only 22 percent of negotiated transfers result in a change in the controlling shareholder. This is indicative of the very high level of ownership concentration in publicly traded Chinese firms.

*Private buyer* has a mean value of 0.69, i.e., in nearly 70 percent of transfers the purchaser is a private company. By contrast, *Private Seller* has a mean of 0.31, so nearly 70 percent of transfers involve some form of state entity as the seller. Thus, overall state sellers and private buyers

dominate this share transfer market. *Dehat* sellers account for 23 percent of all deals, or a third of all state-seller deals, while *face-value LP* deals account for 32 percent of transactions.

Finally, we observe that the mean of *dividend* is only 0.4 percent. It will be important to control for this payout rate as well as turnover given the difference in liquidity between tradable and non-tradable shares.

[#Insert Table 1 here#]

In panel 2 of Table 1, we present summary statistics to contrast the attributes of *dehat* and *face-value LP* transactions. Recall that the underlying ownership in both cases is a state legal person entity, but in the case of *dehat* sellers, ownership is mis-declared as private in deal documents. The mean value of *value loss* for *dehat* sales is 0.80 versus 0.73 for *face-value LP* sales. Further, *dehat* transactions are smaller (*fraction transferred* = 0.10, versus 0.16 for *face-value LP* sellers), and only 12 percent of *dehat* transactions are control deals (versus 25 percent for *face-value LPs*). These patterns are consistent with *dehat* sellers executing transactions that avoid greater scrutiny by regulators, which may be triggered for larger transactions.

In Figure 2, we show the frequency of deals of each seller type, and how this has evolved over time. Around 2002-2003, sales peak before tailing off sharply in recent years. Note that the *dehat* sales are relatively concentrated in the earlier years – this is likely due to the increase in regulatory oversight over this period.

[#Insert Figure 2#]

In Figure 3 we show *value loss* for each seller type. While the level of *value loss* declines over time, average *value loss* for *dehat* firms is almost everywhere above that of all other seller types. Note further the general decline in *value loss* over the sample period. Again, this is consistent with the increased scrutiny of transfer deals throughout this period.

[#Insert Figure 3#]

#### 4. Results

We begin by assessing the cross-sectional correlates of *Value loss*. Our specifications are of the form:

$$\begin{aligned}
 Value\ loss_{fd} = & \beta_1 dehat_{fd} + \beta_2 face\ value\ LP_{fd} + \beta_3 State\ seller_{fd} + \beta_4 State\ buyer_{fd} \\
 & + \beta_5 \log(Sales_{fy}) + \beta_6 Turnover_{fy} + \beta_7 Dividend_{fy} + \\
 & + \beta_8 Fraction\ transferred_{dy} + Fixed\ effects + \varepsilon_{fd}
 \end{aligned} \tag{1}$$

for negotiated transfer  $d$  of the shares of firm  $f$  in year  $y$  (note that in many cases there are multiple transfers for a single firm in a given year). For seller ownership, the omitted variable is private sellers. In all cases, we reported robust standard errors clustered at the level of the listed firm. We report these results in Table 2. In the first column, we include only the ownership variables, *dehat*, *state*, *face value LP*, and *private buyer*. The coefficient on *dehat* is 10.1, significant at the 1 percent level. *Face value LP* is also significant at the 5 percent level in this largely unconditional regression, with a coefficient of 0.032. When we add year fixed effects in

column (2), the coefficient on *dehat* drops to 0.045, significant at the 1 percent level. None of the other seller or buyer ownership variables is significant at conventional levels.

The impact of including year dummies is not surprising, given the patterns observed in Figure 2 – *dehat* transfers are concentrated in the earlier years of our sample, when transfer discounts were also highest. Each of these patterns is a natural result of the marked improvement in regulatory oversight of Chinese equity markets over the period we study (See Huang (2005) for a book-length discussion on the history of China stock market regulation). Thus, adding year fixed effects effectively washes out the impact of the choice of sellers to make *dehat* transfers when the scope for under-pricing was greatest.

In column (3) we add controls, including  $\log(\text{sales})$ , *turnover*, *dividends*, and *fraction transferred*. The coefficient on *dehat* (and other ownership variables) is largely unaffected, increasing slightly in significance and magnitude. In column (4) we add 2-digit SIC industry fixed effects; again, the results are largely unchanged. We add firm fixed effects in column (5), and the point estimate on *dehat* is again unchanged. Finally, in column (5) we limit the sample to state sellers (i.e. omitting private sellers); again, the results are largely unchanged.

The coefficient on *dehat*  $-0.045$  – represents a relatively small fraction of the mean level of *value loss* (0.73). However, there are several important qualifications to be added. Most importantly, as explained above, the year fixed effects included in most specifications may be over-controlling for the choice to make a transfer over time. Additionally, it is important to keep in mind that some fraction of the negotiated transfer discount is due to fundamentals like liquidity. Given the relative coefficients and standard deviations of *turnover* and *dehat*, their implied magnitudes are comparable; if time effects are omitted, the implied effect of *dehat* is much larger.

We have argued that *dehat* transactions are likely a means of regulatory evasion to accomplish value transfer through under-priced asset sales. In this case, the under-pricing is the result of principal-agent problems in state firms – insiders do not bear the cost of selling at a discount, but may benefit from side payments or kickbacks. A similar mismatch of incentives may exist for private sellers – an insider at a selling firm may wish to transfer shares at a discount to another entity where he holds greater cash flow rights. To assess the extent of under-pricing in transactions that have the scope for such value transfer, we look at the impact of related party transactions (*RPT*) on *value loss* in Table 4. The first five columns parallel those of Table 3, but with *RPT* included as a regressor. Consistent with negotiated transfers as a means of tunneling value by private firms, *RPT* takes on a positive coefficient, and in most specifications its magnitude is comparable to that of *dehat*; in this case, *RPT* is no longer significant in the firm fixed effects specification, perhaps because of the relative rarity of *RPT* transactions. As with our *dehat* regressions, year fixed effects have a large impact on the *RPT* coefficient; this is again consistent with related party transactions as a means of transferring value occurring primarily in the earlier (less regulated) part of the sample. Finally, in column (6), we limit the sample to private firms, where related party transactions would be an effective means of tunneling value. The coefficient in this specification increases to 0.069; by contrast, for the sample of state sellers the coefficient on *RPT* is only 0.02 (see column (7), and statistically indistinguishable from zero.

The hypothesis that *dehat* sellers are under-pricing their transfers, and hence wish to elude scrutiny, has several subsidiary predictions for the data. As noted in Section 2, larger transfers trigger greater public disclosure. More importantly, both larger transfers as well as control transactions increase the likelihood of greater regulatory scrutiny, given the attention that such deals attract in the media. Thus, we expect *dehat* transactions – to the extent that this is a marker

for under-priced transactions – to be smaller and also less likely to be control transactions. We examine these additional predictions in Table 4, using specifications that parallel that of equation (1), but with *fraction transferred* and *iscontrol* as the outcome variables. In each case, we present results with just ownership variables and year effects, and also specifications with full controls.

In columns (1) and (2), the coefficient on *dehat* is indistinguishable from zero, implying that *dehat* sales are of comparable size on average to private sales. By contrast, the coefficients on both *state* and *face value LP* are both positive, large in magnitude, and significant at the 1 percent level. In column (3) we add firm fixed effects; once again the coefficients on both *state* and *face value LP* are positive and significant, while the *dehat* coefficient is close to zero. We report analogous patterns in columns (4) – (6) for determinants of control transactions. In this case, *dehat* sales are even less likely to result in control changes relative to private sales, while both *state* and *face value LP* transactions are more likely to result in a shift in control. (In the fixed effects specification, we can reject equality of the *face value LP* and *dehat* coefficients at the 5 percent level of significance).

What effect did under-priced asset sales have on subsequent firm performance? As we describe in the introduction, theoretically the impact is ambiguous – potential improvements in incentives and governance but also perhaps an increase in tunneling, with the empirical literature leaning in favor of improved operating performance.

We first look at investor response to transfer announcements as an indication of market beliefs of future profits. In Table 5, we present the cumulative abnormal returns (CAR) for [-1,1], [-15,1], and [-30,1] windows. (Note that the sample size is smaller than our full sample of 2121 transfers, due to the fact that multiple transfers are sometimes announced on the same day.) In the first row, we list the fraction of returns that are positive. In both the 15 and 30 day

windows, nearly 60 percent of events resulted in positive returns (58.2 and 55.0 percent respectively); by contrast, for the short [-1,1] window, only 51.3 percent of events resulted in positive returns, a figure that is statistically indistinguishable from 50 percent. We present in the next two rows the fraction of event returns that are positive for events associated with the top and bottom quartile of *value loss*. We see that event returns are significantly more likely to be positive for the relatively low *value loss* events for both the 15 and 30 day windows (60.3 and 54.0 percent of observations); however, for high *value loss* sales, only 51.2 and 52.9 percent of events lead to positive returns for the 15 and 30 day windows respectively (insignificantly different from 50 percent). In rows (4) – (6), we present the mean event returns, paralleling the results reported in the first three rows. We find once again that there are positive event returns over the longer windows, but that this positive effect is concentrated in low *value loss* sales.

In Table 6 we present regression results, focusing on the 15 and 30 day windows associated with positive abnormal returns. In columns (1) and (2) we present results for the shorter window. In the first column, we present results with the same covariates as in our earlier *value loss* regressions. Of the seller ownership variables, *dehat* is significant at the 1 percent level and takes on a value of -0.015. When *value loss* is added in column (2), its coefficient is highly significant and negative. Its magnitude, -0.056, implies that moving from the 25<sup>th</sup> to the 75<sup>th</sup> percentile of *value loss* (i.e., from 0.655 to 0.872) would result in lower returns of about 1.2 percent. The coefficient on *dehat* decreases marginally with the addition of *value loss* as a regressor. In columns (3) and (4) we present results with a 30 day window which are qualitatively similar to those of the shorter window, though the coefficient on *dehat* is somewhat smaller in this case.

We next turn to the correlation between transfers and a number of company-level performance measures. We wish to account for the cumulative impact of transfers – ownership changes are

permanent and hence we expect that the “stock” of ownership matters rather than the flow of ownership changes. We use the accumulated share transfers up to year  $y$ , *Prior transfers<sub>y</sub>* to account for this history. Our regressions take the following form:

$$\log(\text{assets}_{fy+1}) = \beta_1 \text{Prior Transfers}_{fy} + \text{Controls} + \text{Firm and year fixed effects} + \varepsilon_{fy} \quad (2)$$

In Table 7, we report results for  $\log(\text{assets})$ , *ROA*, *investment rate*, and *leverage* as outcome variables. There is evidence of higher profitability as indicated by the positive coefficient on *prior transfers* in the *ROA* regression, significant at the 5 percent level. This is consistent with the positive announcement returns reported in Tables 5 and 6, and also with the view that shifting ownership to private entities is generally better for shareholders. The coefficient on *prior transfers* is not significant in predicting any other operating measures.

However, the absence of any effect on overall listed firm performance masks significant changes in within-firm allocation. In particular, we will show that transfers are associated with significant shifts in resource allocation from parent to son.

In the analyses that follow, instead of looking at firm-level changes, we explore whether there are shifts in the *composition* of assets within the firm. In Table 8, we look at the composition of assets – son versus parent – as a function of prior transfers:

$$(\text{son assets}_{fy+1})/\text{assets}_{fy+1} = \beta_1 \text{Prior transfers}_{fy} + \text{Controls} + \text{Firm and year fixed effects} + \varepsilon_{fy} \quad (3)$$

In column (1), we observe a significant shift towards son assets. As we note in the data description, this is both from the use of parent firm resources to purchase stakes in new son

companies, and also from the direct sale (potentially at a discount) of assets from parent to son companies. The magnitude of the coefficient, 0.067, implies that a transfer of median size, 0.13, would induce an incremental increase in the son asset ratio of 0.009. Given that the median son asset ratio is 0.10, this is a large effect.

In columns (2) and (3) we present results using  $\log(\text{son assets})$  and  $\log(\text{parent assets})$  as the outcome variables. Consistent with the results reported in the first column, in the first instance there is a positive and significant effect of prior transfers on son assets and a negative (though not significant) effect on parent assets.

This represents suggestive evidence of an increase in tunneling as a result of transfers. As noted in the introduction, given that son firms are partially owned by the listed firm while the parent company is wholly owned, shifting value from parent to son may serve to transfer value to an insider that holds large, separate stakes in son companies. Further, given the dominant stake that an insider may hold in son companies, tunneling may be more easily accomplished in sons than in parents. <<ADD EXAMPLE>>

We report regressions in columns (4) – (9) that parallel our results on assets for investment and borrowing as outcome variables. As with assets, there is a shift towards both investment and borrowing in son firms and away from parent firms following transfers. Finally, in columns (10) and (11) that show the effect of prior transfers on *ROA*. In this instance, we observe a modest and significant positive effect on parent *ROA*, and an insignificant positive effect on son *ROA*. To the extent that son companies are a channel for tunneling value by insiders, we would not expect to see a positive impact on reported profits.

## **5. Conclusion**

**TO BE ADDED**

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**Figure 1: The Parent-Son Structure of Xiang Huju (stock code: 000549)**

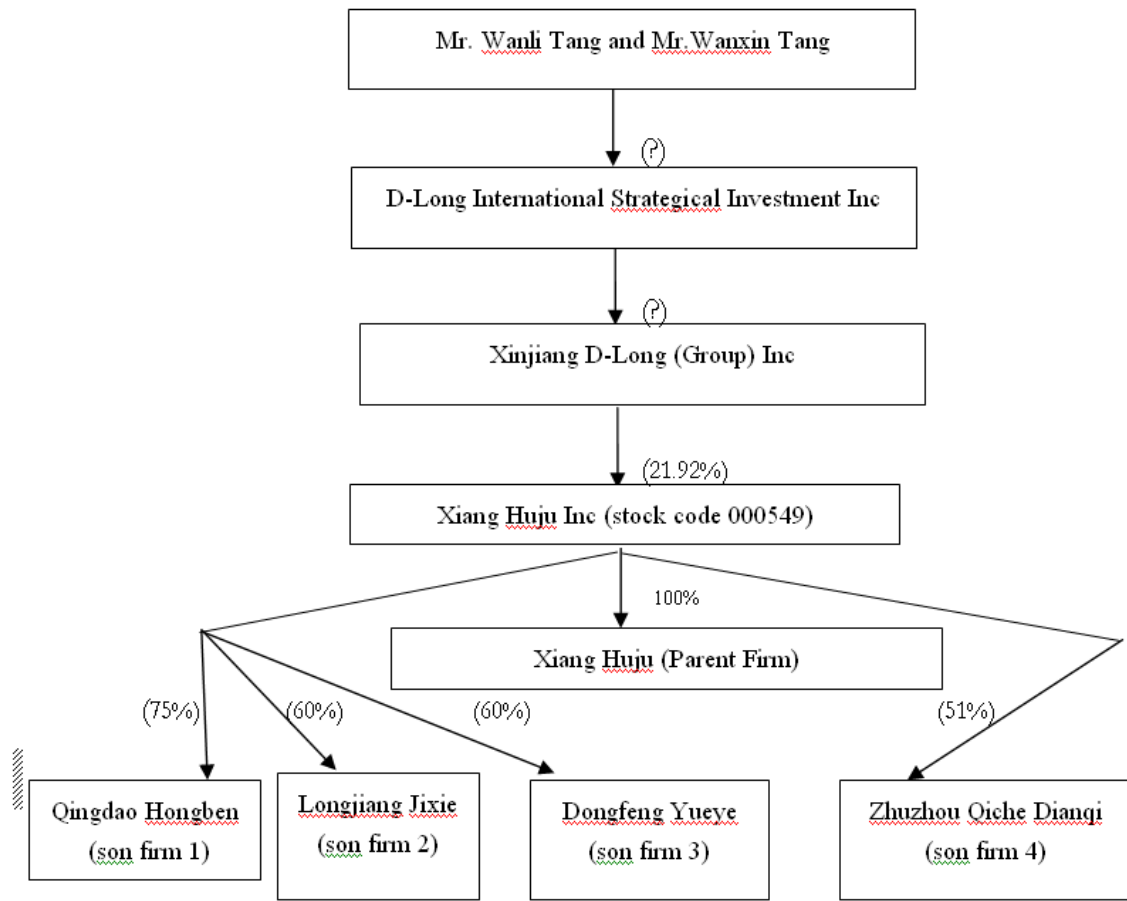


Figure 1 outlines the ownership structure of the listed firm Xiang Huju (stock code: 000549) which is ultimately controlled by the Tang Brothers through an extended ownership chain in 2002. Although in 2003, the SEC in China required the listed firm to give details on the controlling structure of the listed firm, Tang Brothers did not provide such disclosure. As can be seen in the figure, this listed firm has many son firms where the listed firm itself has partial ownership (To save space, we do not listed all the son companies under this listed firm), where Xianghuju (Parent Firm) is the core firm within the listed firm and is 100% owned by the listed firm.

**Figure 2: Number of negotiated transfer deals by type of seller**

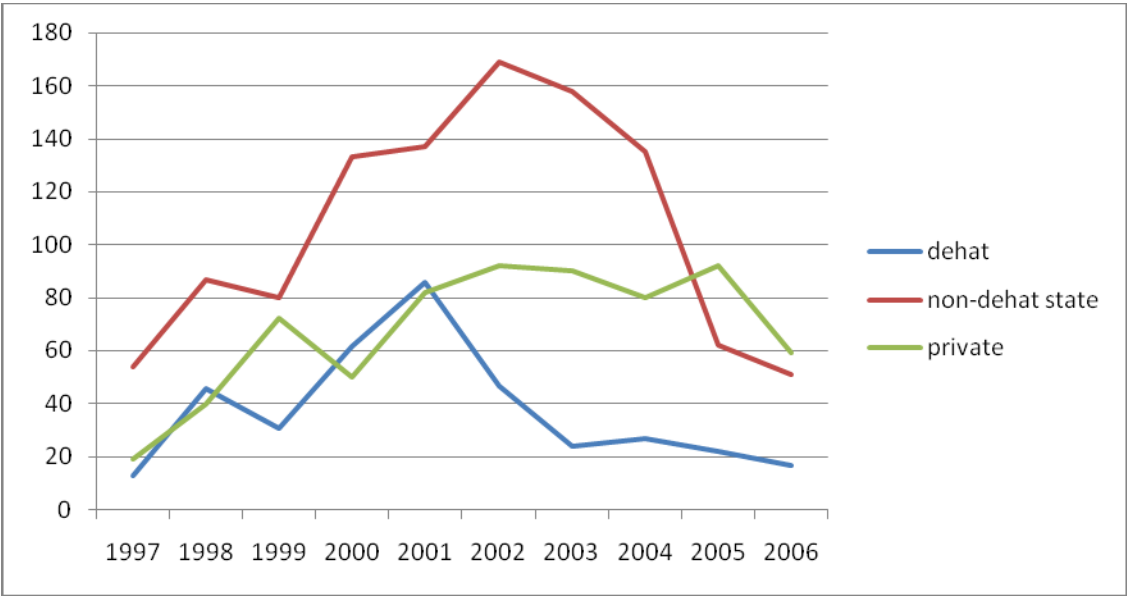


Figure 2 shows the frequency of deals of each seller type, and how this has evolved over time.

**Figure 3: Mean Value loss of negotiated transfers, by seller type**

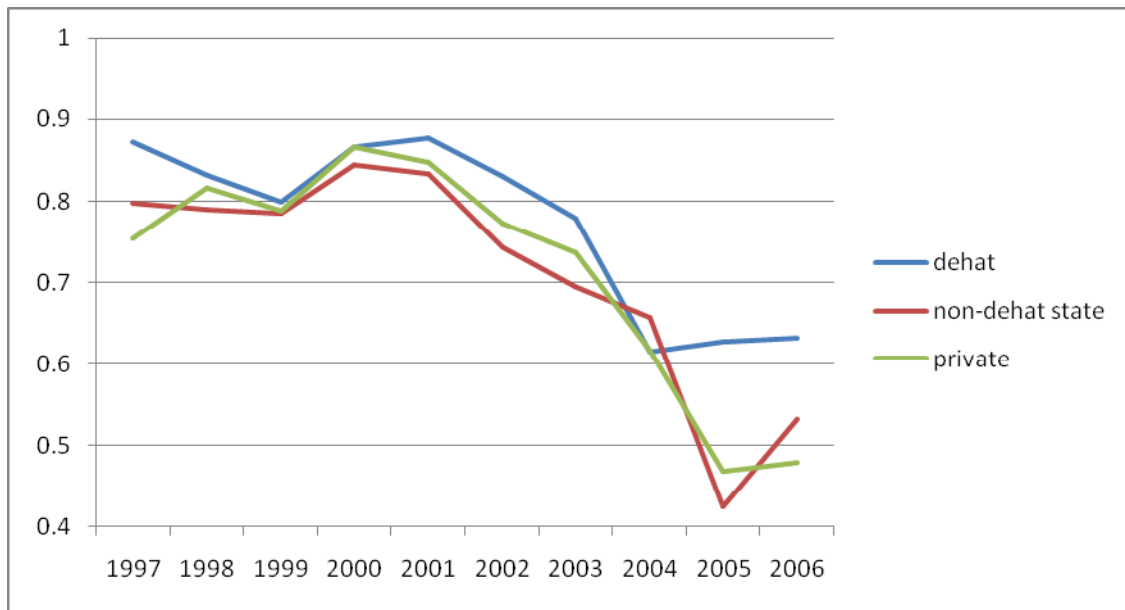


Figure 3 shows *value loss* for each seller type.

Table 1 - Summary Statistics

Panel 1 - Full sample

	Mean	Std Dev	Min	Max	Observations
Value Loss	0.73	0.21	-2.17	0.99	2121
Fraction Transferred	0.13	0.12	0.00	0.75	2121
Control	0.22	0.41	0.00	1.00	2121
log(Sales)	19.35	1.35	11.67	24.42	2121
Dividend Ratio (*100)	0.40	0.85	0.00	8.24	2121
Turnover	4.18	2.56	0.39	17.77	2121
Private Seller	0.32	0.47	0.00	1.00	2121
Face-value LP seller	0.32	0.47	0.00	1.00	2121
Private Buyer	0.69	0.46	0.00	1.00	2121
State Seller	0.14	0.34	0.00	1.00	2121
Dehat	0.23	0.42	0.00	1.00	2121

Panel 2 - Summary statistics of Face-value LP firms and Dehat firms

	Face-value LP seller=1	Dehat=1
Value Loss	0.730	0.801
Fraction Transferred	0.156	0.099
Control	0.254	0.121
log(Sales)	19.494	19.191
Dividend Ratio (*100)	0.398	0.314
Turnover	4.149	4.554
Observations	674	480

Notes: *Value loss* is equal to 1 minus the ratio of the negotiated transfer price of non-tradable shares to the average stock price of corresponding tradable shares in the month prior to the deal; *Fraction Transferred* is the ratio of shares transferred in this deal to all outstanding shares; *Control* is a dummy indicating whether this deal leads to a change in the ultimate controller of the listed firm; *Log(sales)* is the log value of total sales of the listed firm in the last year; *Divident Ratio* is the ratio of dividends over price in the year prior to the deal; *Turnover* is average daily turnover in the past year; *Private Seller* is a dummy variable indicating whether the seller is actually a private firm instead of a state firm; *Face-value LP seller* is a dummy variable indicating the state seller honestly states his shareholdings as state-owned shares in the deal document; *Private Buyer* is a dummy indicating the buyer in this deal is a private firm instead of a state firm; *State Seller* is a dummy indicating the seller is selling state shares; *Dehat* is a dummy variable denoting whether the negotiated transfer seller is a state legal person that has registered its holdings in deal documents as general legal person shares.

Table 2 - Dehat effect on Value loss

	(1)	(2)	(3)	(4)
Dehat	0.045*** (0.012)	0.047*** (0.011)	0.043*** (0.012)	0.044*** (0.011)
State Seller	-0.023 (0.015)	-0.014 (0.015)	-0.008 (0.015)	-0.003 (0.014)
Face-value LP Seller	-0.009 (0.012)	-0.002 (0.011)	-0.003 (0.011)	
Private Buyer	0.004 (0.010)	-0.001 (0.010)	-0.001 (0.011)	-0.003 (0.012)
Dividend Ratio		-1.110 (0.730)	-1.245* (0.745)	-2.310*** (0.790)
Turnover		0.009*** (0.002)	0.008*** (0.002)	0.007*** (0.002)
log(Sales)		-0.019*** (0.006)	-0.020*** (0.007)	-0.029*** (0.005)
Fraction Transferred		-0.027 (0.036)	-0.037 (0.038)	-0.024 (0.038)
Sample	Full	Full	Full	State sellers
Fixed Effects	Year	Year	Ind & Year	Ind & Year
Observations	2121	2121	2121	1439
R-squared	0.35	0.38	0.42	0.47

Notes: The dependent variable in all specifications is *Value Loss*, equal to 1 minus the ratio of the negotiated transfer price of non-tradable shares to the average stock price of corresponding tradable shares in the month prior to the deal; *Dehat* is a dummy variable denoting whether the negotiated transfer seller is a state legal person that has registered its holdings in deal documents as general legal person shares; *State seller* is a dummy denoting the seller is selling state shares; *Face-value LP seller* is a dummy variable indicating the state seller honestly states his shareholderings as state-owned shares in the deal document; *Private Buyer* is a dummy indicating the buyer in this deal is a private firm instead of a state firm; Divident Ratio is the ratio of dividends over price in the year prior to the deal; *Turnover* is averate daily turnover in the past year; *Private Seller* is a dummy variable indicating whether the seller is actually a private firm instead of a state firm; *Log(sales)* is the log value of total sales of the listed firm in the last year; *Fraction Transferred* is the ratio of shares transferred in this deal to all outstanding shares. In all cases, the columns report the results of a linear regression with standard errors clustered at the firm level included in parentheses. In specifications with industry fixed effects, the industry is defined at the 2-digit SIC level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 3 - Private firms: RPT effect on Valueloss

	(1)	(2)	(3)	(4)	(5)
Dehat	0.045*** (0.012)	0.048*** (0.011)	0.044*** (0.012)		0.043*** (0.011)
State	-0.022 (0.015)	-0.011 (0.015)	-0.004 (0.015)		-0.002 (0.014)
Face-value LP	-0.008 (0.012)	0.000 (0.011)	0.000 (0.011)		
Private Buyer	0.004 (0.010)	-0.002 (0.010)	-0.002 (0.011)	0.004 (0.023)	-0.002 (0.011)
Dividend Ratio		-1.172 (0.713)	-1.331* (0.733)	0.092 (1.227)	-2.319*** (0.794)
Turnover		0.009*** (0.002)	0.008*** (0.002)	0.008 (0.006)	0.007*** (0.002)
log(Sales)		-0.020*** (0.006)	-0.022*** (0.007)	-0.007 (0.019)	-0.029*** (0.005)
Fraction Transferred		-0.033 (0.037)	-0.045 (0.038)	-0.090 (0.111)	-0.027 (0.039)
RPT	0.019 (0.020)	0.039** (0.019)	0.045** (0.019)	0.069** (0.027)	0.020 (0.026)
Sample	Full	Full	Full	Private Seller	State Seller
Industry Fixed Effects	Year	Year	Ind & Year	Ind & Year	Ind & Year
Observations	2121	2121	2121	682	1439
R-squared	0.36	0.39	0.42	0.43	0.47

Notes: The dependent variable in all specifications is *Value Loss*, equal to 1 minus the ratio of the negotiated transfer price of non-tradable shares to the average stock price of corresponding tradable shares in the month prior to the deal; *RPT* is a dummy variable indicating whether the seller and the buyer are related parties according to China accounting rules. *Divident Ratio* is the ratio of dividends over price in the year prior to the deal; *Turnover* is average daily turnover in the past year; Private Seller is a dummy variable indicating whether the seller is actually a private firm instead of a state firm; *Log(sales)* is the log value of total sales of the listed firm in the last year; *Fraction Transferred* is the ratio of shares transferred in this deal to all outstanding shares. In all cases, the columns report the results of a linear regression with standard errors clustered at the firm level included in parentheses. In specifications with industry fixed effects, the industry is defined at the 2-digit SIC level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 4: Characteristics of deals - size and control

Dependent Variable	(1)	(2)	(3)	(4)
	Fraction transferred		Control	
Dehat	0.004 (0.007)	0.004 (0.007)	-0.040 (0.026)	-0.033 (0.027)
State Seller	0.103*** (0.010)	0.099*** (0.010)	0.183*** (0.036)	0.173*** (0.035)
State LP Seller	0.056*** (0.007)	0.051*** (0.007)	0.079*** (0.026)	0.071*** (0.027)
Private Buyer	-0.020*** (0.007)	-0.017** (0.007)	-0.036 (0.024)	-0.030 (0.025)
Dividend Ratio		-0.604 (0.405)		-4.928*** (1.532)
Turnover		0.001 (0.002)		0.008 (0.007)
log(Sales)		-0.004 (0.003)		-0.006 (0.010)
Fixed Effects	Year	Ind & Year	Year	Ind & Year
Observations	2121	2121	2121	2121
R-squared	0.11	0.19	0.07	0.14

Notes: The dependent variable in column (1) and (2) is *Fraction Transferred*, the ratio of shares transferred in this deal to all outstanding shares; the dependent variable in column (3) and (4) is *Control*, a dummy indicating whether this deal leads to a change in the ultimate controller of the firm. *Dehat* is a dummy variable denoting whether the negotiated transfer seller is a state legal person that has registered its holdings in deal documents as general legal person shares; *State seller* is a dummy denoting the seller is selling state shares; *Face-value LP seller* is a dummy variable indicating the state seller honestly states his shareholderings as state-owned shares in the deal document; *Private Buyer* is a dummy indicating the buyer in this deal is a private firm instead of a state firm; *Divident Ratio* is the ratio of dividends over price in the year prior to the deal; *Turnover* is average daily turnover in the past year; *Private Seller* is a dummy variable indicating whether the seller is actually a private firm instead of a state firm; *Log(sales)* is the log value of total sales of the listed firm in the last year; In all cases, the columns report the results of a linear regression with standard errors clustered at the firm level included in parentheses. In specifications with industry fixed effects, the industry is defined at the 2-digit SIC level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 5 - Event Studies: Summary Statistics

	CAR[-1,1]	CAR[-15,1]	CAR[-30,1]	Sample
Proportion of Positive CAR	0.513	0.582	0.550	Full
Proportion of Positive CAR	0.507	0.603	0.540	25 percentile (ValueLoss<0.657)
Proportion of Positive CAR	0.445	0.512	0.529	75 percentile (ValueLoss>0.869)
Mean Value of CAR	0.003	0.018	0.022	Full
Mean Value of CAR	0.005	0.027	0.036	25 percentile (ValueLoss<0.657)
Mean Value of CAR	-0.003	0.001	0.001	75 percentile (ValueLoss>0.869)

Notes: CAR[-1,1], CAR[-15,1] and CAR[-30,1] are cumulative event returns over window [-1,1], [-15,1] and [-30,1] around the announcement of transfers, respectively. Value Loss is equal to 1 minus the ratio of the negotiated transfer price of non-tradable shares to the average stock price of corresponding tradable shares in the month prior to the deal.

Table 6 - Relationship between cumulative abnormal event returns, value loss and dehat

	CAR[-15,1]	CAR[-15,1]	CAR[-30,1]	CAR[-30,1]
Dehat	-0.015** (0.007)	-0.013* (0.007)	-0.012 (0.009)	-0.008 (0.009)
State Seller	-0.000 (0.008)	-0.000 (0.008)	-0.004 (0.010)	-0.004 (0.010)
Face-value LP Seller	-0.006 (0.007)	-0.006 (0.007)	-0.004 (0.009)	-0.004 (0.009)
Private Buyer	-0.008 (0.007)	-0.008 (0.007)	-0.008 (0.008)	-0.008 (0.008)
Dividend Ratio	-0.223 (0.290)	-0.288 (0.289)	-0.251 (0.422)	-0.351 (0.423)
Turnover	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.003)	-0.001 (0.003)
log(Sales)	-0.007** (0.003)	-0.009*** (0.003)	-0.006 (0.004)	-0.008** (0.004)
Fraction Transferred	0.062*** (0.022)	0.059*** (0.022)	0.104*** (0.028)	0.100*** (0.028)
Value loss		-0.056*** (0.014)		-0.084*** (0.019)
Sample	Full			
Fixed Effects	Ind & Year			
Observations	2069	2069	2085	2085
R-squared	0.10	0.11	0.11	0.12

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Notes: The dependent variables are cumulative event returns over [-15,1] and [-30,1] windows around the announcement of transfers. *Value Loss* is equal to 1 minus the ratio of the negotiated transfer price of non-tradable shares to the average stock price of corresponding tradable shares in the month prior to the deal; *Dehat* is a dummy variable denoting whether the negotiated transfer seller is a state legal person that has registered its holdings in deal documents as general legal person shares; *State seller* is a dummy denoting the seller is selling state shares; *Face-value LP seller* is a dummy variable indicating the state seller honestly states his shareholderings as state-owned shares in the deal document; *Private Buyer* is a dummy indicating the buyer in this deal is a private firm instead of a state firm; Divident Ratio is the ratio of dividends over price in the year prior to the deal; *Turnover* is averate daily turnover in the past year; *Private Seller* is a dummy variable indicating whether the seller is actually a private firm instead of a state firm; *Log(sales)* is the log value of total sales of the listed firm in the last year; *Fraction Transferred* is the ratio of shares transferred in this deal to all outstanding shares. In all cases, the columns report the results of a linear regression with standard errors clustered at the firm level included in parentheses. In specifications with industry fixed effects, the industry is defined at the 2-digit SIC level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 7 - Relationship between listed firm level financials and prior transfers

Dependent Variable	(1) Log(Assets)	(2) ROA	(3) Investment Ratio	(4) Leverage
Prior transfers	0.022 (0.067)	0.018** (0.008)	0.008 (0.006)	0.009 (0.018)
log(Sales)	-0.697*** (0.044)	0.059*** (0.005)	0.028*** (0.004)	-0.068*** (0.008)
Log(1+Tobin's Q)		0.008*** (0.002)	0.004*** (0.002)	0.003 (0.003)
Kaplan-Zingales Index			-0.001** (0.000)	
Fixed Effects	Firm & Year			
Observations	9149	8694	7516	8901
R-squared	0.88	0.42	0.51	0.66

Notes: The dependent variables are log value of total assets, ROA which is defined as the ratio of net profits (after tax) over total assets, the ratio of investment over total assets, the ratio of total borrowings over total assets of the listed firm respectively; Kaplan-Zingales Index is calculated using Kaplan-Zingales (1997) coefficients for each listed firm in our sample; Prior transfers is the total shares transferred up to that year, divided by total shares outstanding. In all cases, the columns report the results of a linear regression with standard errors clustered at the firm level included in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Table 8 - Relationship between firm size and Prior transfers

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	Son Assets Ratio	Log(Son Assets)	Log(Parent Assets)	Son Investment Ratio	Log (Parent Investment)	Log(Son Investment)
Prior transfers	0.067*** (0.020)	0.448** (0.214)	-0.049 (0.064)	0.142*** (0.045)	-0.307 (0.296)	1.348** (0.573)
log(Sales)	0.020*** (0.005)	0.343*** (0.054)	0.234*** (0.020)	0.012 (0.012)	0.321*** (0.079)	0.534*** (0.159)
Log(1+Tobin's Q)	-0.011 (0.010)	-0.543*** (0.117)	-0.430*** (0.041)	-0.030 (0.026)	0.414*** (0.152)	-0.041 (0.330)
Kaplan-Zingales Index					-0.016 (0.025)	-0.014 (0.022)
Fixed Effects	Firm & Year					
Observations	7140	6931	7616	5823	5801	5649
R-squared	0.68	0.74	0.91	0.65	0.72	0.58

Table 8 - Relationship between firm size and Prior Transfers (cont'd)

Dependent Variable	(7) Son Borrowing Ratio	(8) Log(Parent borrowing)	(9) Log(Son borrowing)	(10) Parent ROA	(11) Son ROA
Prior transfers	0.079** (0.040)	0.059 (0.157)	0.321 (0.243)	0.022** (0.010)	0.011 (0.012)
log(Sales)	0.030*** (0.010)	0.183*** (0.040)	0.423*** (0.059)	0.008*** (0.003)	0.001 (0.002)
Log(1+Tobin's Q)	0.022 (0.021)	-0.793*** (0.089)	-0.366*** (0.124)	0.064*** (0.006)	0.002 (0.007)
<b>Fixed Effects</b>					
Observations	7275	6961	5659	7267	7223
R-squared	0.61	0.70	0.70	0.41	0.25

Notes: The dependent variable (henceforth DV) in column 1 is the ratio of son firms' total assets over the listed firm's total assets; the DV in column 2 is the log value of son firms' total assets, the DV in column 3 is the log value of parent firm's total assets. The DV in column 4 is the ratio of investment by son firms over total investment by the listed firm; the DV in column 5 is the log value of parent firm's investment; the DV in column 6 is the log value of son firms' investment; the DV in column 7 is the ratio of total borrowings by son firms over total borrowings by the listed firm; the DV in column 8 is the log value of parent firm's total borrowings; the DV in column 9 is the log value of son firms' total borrowings; the DV in column 10 is the parent firm's ROA, defined as the ratio of parent firm's net profits (after tax) over parent firm's assets; the DV in column 11 is the son firms' ROA, defined as the ratio of son firms' net profits (after tax) over son firms' assets; Kaplan-Zingales Index is calculated using Kaplan-Zingales (1997) coefficients for each listed firm in our sample; Prior transfers is the total shares transferred up to that year, divided by total shares outstanding. Data are trimmed at 1% and 99% for son assets ratio. In all cases, the columns report the results of a linear regression with standard errors clustered at the firm level included in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

