Political Constraints, Organizational Forms, and Privatization Performance: Evidence from China

Jianping Deng, Jie Gan[*], and Jia He[1, 2]

**Political Constraints, Organizational Forms, and Privatization Performance:
Evidence from China**

Abstract

This paper explains why China's share issue privatization (SIP), by far the largest one in history, failed to improve operating performance. As a result of political compromises and fiscal constraints, approximately three quarters of the SIP firms went through an "incomplete restructuring" process, creating a parent-subsidiary structure in which the subsidiary was listed and the parent company kept the redundant workers and debt burdens. In a country with weak property rights protection, the parent company had both the incentive and the ability to expropriate resources from the listed company, resulting in weak performance.

We present three sets of results. First, we show that when political opposition to layoffs is greater and when the government has less fiscal capacity, the firms are more likely to be incompletely restructured. Second, incompletely restructured firms have significantly lower operating performance. This result is robust to IV estimation using government incentives as instruments. Third, we present evidence of the root cause of weak performance, i.e., expropriation by large shareholders. Based on hand-collected data on 2616 related-party transactions, we document that incompletely restructured firms are more likely to engage in related-party transactions with their largest shareholders, including transfer pricing of goods and services, assets sales, and extracting trade credit. Further, these transactions are associated with inferior firm performance, confirming that they are expropriative in nature. Incompletely restructured firms also pay less dividends so that corporate resources are kept in the firm and under their control. Finally, expropriation does not seem to be fully discounted in prices ex ante and minority shareholders realize lower stock returns ex post.

Introduction

Privatization of state-owned firms has become a popular practice around the world as governments increasingly use market mechanism to allocate economic resources. Empirical studies of these privatization reforms suggest that privatization does work in the sense that privatized firms generally exhibit improved operating efficiency (Megginson et al, 2001). One outstanding exception to these successful stories, however, is the case of China. Despite its extraordinary economic achievements in the past two decades, China's share issue privatization (SIP), by far the largest privatization in human history, has turned out to be a failure. Operating efficiency of Chinese SIP firms dropped significantly during the three years after privatization (Sun and Tong, 1999). Why has China's efforts to privatize its state-owned enterprises (SOEs) through SIP produced a result so different from that in most other countries? Relying on a unique set of database which consists of hand-collected detailed information about 295 share issue privatizations in China, this paper aims to answer these important questions with an attempt to draw implications for the design of economic institutions in general. Specifically, we show how political constraints faced by the government in the process of privatization may shape the organizational forms of the privatized firms in ways that often result in mis-aligned economic incentives and therefore inferior performance.

China took a gradualist approach to its economic reform. Privatization, commonly perceived to be the biggest threat to its ideology, was initiated only after several earlier attempts at enterprise reform had failed.[3] At that point, most of the state-owned enterprises (SOEs) were unprofitable and had zero or negative equity. The government thus adopted a strategy so-called "retaining the larger

---

[3] In the initial stages of state-owned enterprises (SOE) reforms, the emphasis was placed on more autonomy and better incentives and later on long-term contracts, specifying profits, taxes, and other financial targets, between enterprises and their bureaucratic superiors. While the reform brought about improvements in productivity and innovation, without ownership reform, SOEs continue to bear many social responsibilities — such as social security, housing, and education – that make it harder for the government to establish a system of uniform market-determined prices or to impose hard budget constraints. In the end, the state acts as the residual claimant absorbing the losses. This imposes a severe stain on the country's banking system: with SOEs taking in 70% to 80% of all bank credit, banks are saddled with as much as $200 billion in uncollectible debt which accounts for, by conservative estimates, a quarter of all outstanding bank loans.

ones and letting go of the smaller ones (*zhua da fang xiao*)." The large SOEs over which the government intended to retain control were privatized through SIP in which the government retained at least 50% ownership and thus dominant control. These large SOEs typically serve the national markets and are therefore considered important. In preparing these SOEs for public listing, the biggest challenge the government faced was how to restructure money-losing SOEs. Restructuring requires layoffs of excess workers, who are a main source of inefficiency under state control, and injection of capital, to pay off bank debt accumulated from years of negative earnings. Both are politically painful and financially costly — thus only a quarter of the companies went through the necessary restructuring and became independent entities before public listing.

For the remaining firms, as a political compromise, the government introduced so called "incomplete restructuring" that was less painful and costly: the firms were organized into a parent/subsidiary structure, in which the most profitable assets were carved out for public listing while the parent companies became the largest shareholders and kept the excess workers, obsolete plants, and debt burdens. Thus, instead of solving the problems under state control, an incomplete restructuring kept and hid these problems in the parent companies. The parent companies, as the largest shareholders with close business relationships with the listed companies, had strong incentive and ability to expropriate corporate resources at the expense of outside minority shareholders. Moreover, for ideological reasons the government retained controlling shares and made all government shares non-tradable so that control would not be transferred to the private sector through future trading. Non-tradability of government-owned shares further intensified the large shareholders' incentive to expropriate because they could not benefit directly from high share prices.

Given that incompletely restructured firms account for three-quarters of all SIP firms and that SIP firms represent more than 80% of market capitalization of the Chinese stock market[4], the expropriation problem inherent in the listed firms is wide spread. This has discouraged the development of well-functioning capital markets (La Porta et al., 1997) and poses a big challenge to the country's overall economic prospects.

To systematically document and quantify the role of political incentives in the privatization process and the impact of such process on incentives and performance, we perform three sets of analyses. First, we examine how political incentives shape the choice of restructuring methods and the organization forms of the SIP firms. We find that, consistent with the stated goal of social and political stability, the government is more likely to incompletely restructure the SOEs when it does not have sufficient fiscal resources and when redeployment of laid-off workers is likely to be difficult because of the under-development of the private sector in the region. These results highlight that the design of economic institutions is critically shaped by political factors. They also provide guidance in interpreting our later results on privatization performance.

Second, we demonstrate that incomplete restructuring is associated with significant efficiency loss. Incompletely restructured firms under-perform completely restructured firms based on various performance measures. Their operating efficiency is 5.1 percentage points lower as measured by return on assets (ROA) and 6.2 percentage points lower as measured by return on sales (ROS). This underperformance is not likely to be explained by endogenous selection and is robust to IV estimation using government incentives as instruments. Moreover, minority shareholders realized inferior ex post stock returns during the three years after privatization, suggesting that expropriation was not fully anticipated by the shareholders in this emerging market.

---

[4] The share of SIP firms in total stock market capitalization changes over time. In the 1990s and early 2000s, it was more than 90%. It declined gradually as more non-SOEs went public, although the number fluctuated over recent years as large state-owned banks went public. In 2010 Q3, the number was 83%.

Finally, we provide evidence of the root cause of weak performance by incompletely restructured firms, that is, expropriation by large shareholders. Based on 2616 filings of related-party transactions during the three years after SIP, we show that incompletely restructured firms have significantly more related-party transactions with their largest shareholders (i.e., the parent companies), which includes purchases of goods and services, purchases of assets, and provision of generous trade credits. Since we do not observe the terms of related-party transactions, we confirm that these transactions are expropriative in nature by showing that the extent of related-party transactions is associated to worse operating performance. As further evidence of expropriation, we find that the large shareholders holding non-tradable shares have incentive to push for dividends, because this is the only way for them to earn a return on their holdings. Dividends, however, must be shared proportionally with minority shareholders. Thus in incompletely restructured firms where the large shareholders can expropriate, their marginal incentive to push for dividends is reduced so that corporate resources are kept in the firm and under their control.

A broader message of this paper is that, contrary to the conventional wisdom, large shareholders and their incentives to expropriate can significantly reduce the effectiveness of privatization in countries with weak property rights. It is common for privatization to result in concentration of ownership. For example, Boycko, Shleifer, and Vishny (1994) discuss the creation of large shareholders during mass privatization often with the intention of promoting blockholding as a governance mechanism to monitor managers, which, according to Frydman et al., (1999), results in concentrated ownership as high as 50 percent or more of the shares.[5] More generally, Jones, Megginson, Nash, and Netter (1999) document that privatizing governments around the

---

[5] Estrin, Hanousek, Kocenda, and Svejnar (2009) provide an excellent survey of recent studies on the effect of concentrated ownership. In the Czech Republic and Bulgaria, there is evidence of improved performance, in terms of profitability (Miller, 2006) and in terms of productivity. The evidence, however, is not clear-cut. Some studies find insignificant effects. In the case of the Czech Republic there is no effect of concentrated ownership in the initial large scale privatization; the performance gain comes from ownership changes after privatization. Moreover, the effect of concentrated ownership is often negative in Russia. These inconsistencies highlight the importance of understanding the conditions under which the incentives of large shareholders are aligned with performance improvements.

world consistently use share allocation to further their political and economic objectives during privatization, resulting in concentration of ownership in the hands of favored interest groups. While concentrated ownership has the benefit of mitigating the free-rider problem in monitoring managers and, in the case of insider ownership, aligning managerial interests with those of shareholders, it comes with a well-known cost. That is, a large shareholder can expropriate the outside minority shareholders. This expropriation problem is potentially strongest in countries with weak property rights protection, where much privatization occurs. Despite the extensive literature on the conflicts of interest between large shareholders and outside minority investors in corporations in general,[6] there is little empirical work on how such conflicts play out in privatized firms and how these conflicts influence privatization outcomes.[7] The findings in this paper highlight the importance of property rights institutions as the precondition for privatized firms to take advantage of improved monitoring from larger shareholders.

This paper also adds to a growing literature that examines the relationship between corporate governance and firm performance in China's share issue privatization. For example, Sun and Tong (2003) show that the composition of state-owned shares affects firm performance. Fan and Wong (2007) find that CEOs who are former or current government officials are associated with less professionalized boards and worse firm performance. We control for these factors in our analysis. More importantly, our paper differs from previous studies in that we examine how sub-optimal choices made during privatization due to political constraints affect corporate governance and *how* weak governance worsens the performance of China's privatized firms.

---

[6] See, for example, Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000), La Porta et al. (1997), Dyck and Zingales (2004) and Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2006), Claessens, Djankov, Fan, and Lang (2002), Bertrand, Mehta, and Mullainathan (2002), and Cheung, Rau, and Stouraitis (2006). None of the previous studies, however, has directly examined how expropriation may play out in privatized firms.

[7] In an earlier theory paper, Cornelli and Li (1997) recognize the possibility of high bids in privatization auctions by large shareholders with private benefit of control.

The rest of this paper proceeds as follows. The next section describes the background of China's share issue privatization. Section III presents the empirical analysis. Section IV discusses the implications of our results and presents robustness checks. Finally, Section V concludes the paper.

I. Institutional Background of China's Share Issue Privatization

1.1 Historical Background

China has taken a gradualist approach to its economic reforms (see e.g. Jefferson and Rawski, 1994 and Naughton, 1994). Privatization, commonly considered the largest threat to the socialist ideology, was initiated only after several earlier attempts at enterprise reform had failed. By 1994, close to half the state-owned enterprises (SOEs) were already hugely unprofitable and had zero or negative equity. It is against this background that the government ushered in a new phase of more fundamental enterprise reform. In 1993, the Third Plenum of the Fourteenth Chinese Communist Party Congress endorsed the creation of a modern enterprise system and approved the development of diversified forms of ownership through privatization. In 1995, the central government introduced the policy of retaining the control of large SOEs while fully privatizing the smaller SOEs. The Fifteenth Communist Party Congress in 1997 further approved a broadening and an acceleration of this initiative.

In privatizing the SOEs, China adopted a strategy so-called "retaining the larger ones and letting go the smaller ones." In implementing this strategy, SIP became the main vehicle for privatizing the large SOEs over which the government intended to retain control – we describe, in the subsequent sub-section, how the government ensured its control of SIP firms in privatization design. These large SOEs typically compete (or are monopolies) in national product markets and thus are considered important. Two stock exchanges, the Shanghai Stock Exchange and the

Shenzhen Stock Exchange, were established in the early 1990s and large scale SIP started in 1997. By 2002, the total value of SIP offerings reached US$100 billion, making China by far the largest SIP in history.

Given the prospects of new financing, cash-constrained SOEs were eager for public listings. Competition for listing approvals was so fierce that the State Council imposed a quota system. It assigns listing quotas to provinces and central ministries, which in turn allocate the quota to individual firms. Since most of the SOEs were supervised by provincial and local goverments, the provincial government played a prominent role in allocating SIP quotas.[8]

To ensure the stability of the newly developed capital markets, the State Council and the Chinese Security Regulatory Committee (CSRC), which regulates the securities markets, imposed profitability and capital requirements on SOEs that were planning IPOs. For example, IPO firms had to have a history of positive profit for three years and the total debt ratio could not exceed 70 percent at the time of IPO.

1.2 Privatization Design: Political Constraints, Pre-privatization Restructuring, and Organizational Forms

The government faced two major challenges in preparing the SOEs to meet the listing requirements. The first was how to restructure money-losing SOEs. Restructuring (Gaizhi) meant laying off excess labor, upgrading of plants and machinery, and injecting new capital — all of which were very costly both socially and financially. The second challenge facing the government was — due to its ideological aversion to capitalism — how to ensure state control.

---

[8] From 1993 to 1998, there was an explicit listing quota system, in number of shares before 1995 and in number of firms afterwards. The State Council assigned listing quotas to provinces and ministries. The provincial governments then allocated their quota to locally supervised firms. For the minority of centrally controlled SOEs, the quota came from the corresponding ministries. After 1998, the quota system was abandoned and CSSR now plays a more important role in approving new listings. Under this new scheme, IPO firms must be recommended by an underwriting securities firm and then approved by a committee and CSSR. Because most securities firms are controlled by provincial governments, however, many analysts pointed out that the new system does not differ significantly from the old quota system.

In restructuring SOEs, as the result of political compromises and fiscal constraints, only about one-quarter of the SOEs were completely restructured and went public as an independent entity. As an example, Harbin Air Conditioning Shareholding Company Limited (Stock code: 600193) was the result of a complete restructuring of Harbin Air Conditioning Company – Figure 1 illustrates this process. The productive assets of Harbin Air Conditioning Company, valued at 41.2 million, formed the listed company, Harbin Air Conditioning Shareholding Company Limited. Its non-productive assets, including the transportation unit, kindergarten, gas station, canteen, motel, public bathing facility, and associated 318 workers formed Harbin Air Conditioning Industrial Company, 100% owned by the government. All 440 retired workers in the former Harbin Air Conditioning Company were also kept in Harbin Air Conditioning Industrial Company. After the restructuring, the original Harbin Air Conditioning Company was dissolved. The listed company and Harbin Air Conditioning Industrial Company were independent entities. The government shares of the listed company were held by Harbin State Asset Management Bureau, which were further deposited in Harbin Metal Industrial Asset Management Company, an investment company under Harbin State Asset Management Bureau. After the IPO, the government, through Harbin Metal Industrial Asset Management Company, owned 59% of listed company. The public market and employee shares accounted for 27% and 14% of the ownership.[9]

In contrast, about three-quarters of the firms went through an incomplete restructuring process. That is, they were organized into a parent/subsidiary structure, where the most profitable part of the firm was carved out for public listing while the parent company kept the excess workers, obsolete plants, and the financial and social liabilities. Figure 2 illustrate a typical example of incomplete restructuring – Sichuan Chemical Company Limited (Stock code 000155). In 1997, Sichuan Chemical Group, one of the leading firms in the chemical industry in China, carved out its

---

[9] The employee shares were not acquired through IPO, rather they were purchased at a price with market to book of 1 prior to IPO.

relatively more profitable assets including fertilizer and chemical factories and related marketing and R&D units to form Sichuan Chemical Company Limited for public listing. The non-productive assets and retired workers stayed in the Sichuan Chemical Group, which became the parent company of the listed firm. After the IPO, the parent company owned 72% of listed company, whereas the public market owned the remaining 28%.[10] The chairman of Sichuan Chemical Group also served as the chairman of Sichuan Chemical Company Limited. In addition, Sichuan Chemical Group appointed the manager of its No. 1 Fertilizer Factory to become the CEO of Sichuan Chemical Company Limited. Thus, rather than solving the problems under state ownership, an incomplete restructuring kept and hid these problems in the parent companies. Although the parent companies later would be found to expropriate the listed subsidiaries, carving out the better assets for public listing received much criticism at the time for "draining of state assets."[11] Indeed, it is important to note that the listed entities were not typically weaker or non-performing firms, even compared with completely restructured firms. Later, we provide more statistical evidence on this point.

The two approaches to pre-privatization restructuring created very different incentives and abilities for the controlling shareholders to expropriate. As in most of SIP around the world, China's share issue privatization was partial, with government retaining majority ownership (e.g., Jones et al., 1999 and Gupta, 2005). In a complete pre-privatization restructuring, these government-owned

---

[10] In this example, there is one company contributing all the assets of the listed company. It is also possible for multiple companies to contribute assets to form the listed company. For example, in the case of Beiqi Foton Motor Company (stock code: 600166), Beijing Automobile and Motorcycle Company contributed most of the productive assets totaling 92.5 million Yuan of net assets and became the parent company the listed entity. The non-productive assets of the three factories as well as liabilities of pension and medical care of retired workers remain in the Beijing Automobile and Motorcycle Company. Several other companies also contributed cash or assets. They are Changchai Group (15 million of cash), Wujing Diesel Engine Company (7.5 million of cash and assets), Shandong Huayuanlai Internal-Combustion Engine Company (5 million assets), Anhui Quanjiao Diesel Engine (1million of assets), and other 95 companies (23 million cash).

[11] A case in point is China Nonferrous Metal Limited Co. The restructuring process led to a parent-subsidiary structure and the subsidiary was listed on Shenzhen Stock Exchange. During the restructuring, the assets in terms of book value were split roughly equally between the parent and the subsidiary. However, the subsidiary kept higher quality assets. Only 600 out of the 20,000 people were placed in the listed subsidiary; among them were the better educated ones – most of the workers put in the subsidiary had collage degrees. The remaining workers were kept at the parent company.

shares were typically deposited in the State Assets Management Bureau or in other SOEs that did not have close business relationships with the listed company and that tended to be passive shareholders. In contrast, in incomplete restructuring, the government-owned shares were in the hands of the SOE parent company that became the controlling shareholder and had strong incentives to expropriate resources from their listed subsidiaries to solve their own problems under state ownership. Moreover, it was common (in 86% of the cases) for the parent SOE to send its own managers to be the CEO or chairman of the listed company. Such personnel connections further facilitated the ability of the parent companies to expropriate.

To deal with the second challenge during SIP, i.e, to ensure state control, the government retained majority ownership and sold only non-controlling shares. It then defined share classes based on their relationship to the state and declared all government shares non-tradable so that control would not be transferred to the private sector through future trading. Thus, the broadest categories of shares in China are non-tradable shares left in the hands of the state and tradable shares sold to the public. Non-tradable government-owned shares are further classified into state shares and legal person shares, depending on who contributed assets to the listed firms, rather than ultimate ownership or control.[12] Tradable shares consist of individual shares (shares held by retail investors or institutions), employee shares, and foreign shares.

The non-tradability of government shares further intensified the large shareholder's incentive to expropriate, because they could not cash out at a higher price. It also had important implications on dividend policy, which facilitates an additional test of expropriation. Specifically,

---

[12] Classification of state share vs. legal person shares can be confusing to Western economists. State shares represented assets owned by a government agency – for example a ministry or a provincial/local goverment – that were contributed to the listed company. Legal person shares represented the contribution by state-owned enterprises of their legally owned assets. It is important to note that assets owned by SOEs rather than owned *directly* by the state were a consequence of the contract-responsibility system in the early days of the economic reform. The contract-responsibility system allowed SOEs to retain profits over a certain guaranteed level. These profits were then used to invest in assets that later became the basis for legal-person shares of various types. Therefore, unlike in the West, the division between state and legal shares is based on the shares' relation to the state, rather than on the ultimate ownership or control.

when the government shares held by the large shareholders are not tradable, the only way for them to earn a return on their holdings is through dividends, resulting in an incentive to push for dividends. However, if large shareholders can expropriate, their marginal incentive to push for dividends is reduced, because 100 percent of the expropriated corporate assets goes to the large shareholders themselves whereas they get only part of the cash disbursed as dividends (minority shareholders get the rest).

As in many emerging markets, the almost non-existence of corporate governance in China further made it possible for large shareholders to expropriate. It is well known that China's gradual approach to reform has not brought about strong legal protection of property rights. Regulatory enforcement, which could have been an alternative to judicial enforcement, was lacking as well. Take the example of corporate boards. It was not until 2001 that the CSRC established the requirement that each listed company should have two independent directors on its board of directors.[13] In practice, however, it is no secret that companies frequently twist the rules and place related persons on their boards. Although in recent years the CSRC has initiated new regulations to protect small investors, it does not have the necessary investigative and prosecuting power and resources to enforce the rules.[14]

Expropriation of incompletely restructured firms by their parent companies is well recognized in China. For example, a news article dated October 31, 2006 in one of the largest Chinese business newspapers, *21st Century Business Herald*, writes

---

[13] Following the German two-tier board structure, Chinese company law requires firms to have a supervisory board. However, like boards of directors, supervisory boards are not independent either and have little authority to monitor firm behavior or to protect minority shareholders.

[14] Even in the cases where the rules are enforced, the penalty for violation of rules that CSRC can impose seems to be negligible. For example, Triple Nine Pharmaceutical Company (Sanjiu Yaoye) offered its parent company net trade credits as high as 50% of its pre-IPO assets. The parent company was fined a 500K Yuan, a little more than US$60K by the exchange rate at the time. The chairman was fined 100K Yuan, or US$12K; a few other top officers were fined 30-50K Yuan, about US$4K-6K (CSRC, July 4, 2002).

At a time when the non-ferrous metal industry is booming, Yunnan Tin Co.'s net income was down by 83 percent... The company sold its copper to the parent company. Mid-year revenue was 185 million Yuan, at the reported price of 37,114 Yuan per ton, suggesting it produced 4,983 tons of copper. [translation ours]

The article further estimated, based on past disclosure of new projects and acquisition of other copper companies, that

···the company's copper production should have been 11,097 tons... Moreover, the market price of copper increased by 84% to 63,000 Yuan per ton, much higher than the reported transfer price... Taken together, 514 million Yuan disappeared. [translation ours]

Moreover, such expropriation does not seem to be a pure transfer. Reports of how normal business operations are interrupted are also common. A Xinhua News article on Jinan Motorcycle dated July 6, 2001, describes,

The listed company accumulated 2.6 trillion Yuan in receivables owed by the parent company, about the sum of capital raised through the IPO plus all profits since the IPO ... Due to shortage in cash, the company could not support R&D to develop new products. Working capital was extremely tight. It sometimes could not even produce enough to meet demands. [translation ours]

Similar reports show up in management discussions in company annual reports. For example, in the 2001 Annual Report of Chundu Foodstuff Co. (which used to have 70% market share of the processed meat market), the company's management, in its discussion of the deteriorated operating results, duly reports,

Due to trade credits owed by the parent company, the company is extremely tight for cash, which has seriously affected its daily operations… Due to the shortage of cash, the sales network could not be properly maintained and new markets could not be developed. As a result, the company has lost market share significantly. [translation ours]

1.3   Summary: Key Features of China's SIP as Guidance for Empirical Analysis

We now highlight a few distinctive features of China's SIPs that guide our subsequent empirical investigation. First, in privatizing its SOEs, China adopted a strategy of "retaining the larger ones and letting go of the smaller ones," in which the large SOEs were privatized through public listing and the government retained at least 50% ownership of the listed firms. To ensure that the ownership and control would not be transferred to the private sector through future trading, the government decided that state-related shares are not tradable.

Second, due to its gradualist approach to economic reform, by the time the government privatized the SOEs, most were money-losing with negative equity. Thus they need to be restructured prior to SIP, which required layoffs and capital injection, both were politically and financially costly. As the result of political compromises and fiscal constraints, about three quarters of SOEs went through an incomplete restructuring, in which one or several subsidiaries were carved out for public listing and the redundant workers and debt burden were kept in the parent company. The remaining firms went through the necessary restructuring so that the whole firm was listed. In our later analysis, we use regional fiscal capacity and private sector development to measure government incentives in choosing pre-privatization restructuring methods.

Third, in incomplete restructuring, the parent companies became the largest shareholder with business and personnel connections with the listed companies. In a country with weak legal protection of outside minority shareholders, the parent companies holding non-tradable shares had strong incentives and ability to expropriate the listed firms. In our later analysis, we measure the extent of expropriation using hand-collect data on related-party transaction and explicitly evaluate the impact of expropriation on post-privatization performance. We also examine, how the large shareholder's incentives to expropriate, when their shares are not tradable, affect the firm's dividend policy.

Finally, as the SIP firms were large firms selling to the national markets, it is unlikely that their performance would be affected by regional economic and fiscal conditions. Thus, when we examine performance differences between completely and incompletely restructured firms, we use our measures of government incentives as instruments.

II. Sample and Descriptive Statistics

2.1   Sample

Our sample includes all the 295 former SOEs that went public between 1997 and 2000. The choice of the sample period is based on several considerations. First, firms started to report, in their IPO prospectuses, detailed information on pre-privatization restructuring and the resulting organizational form only in 1997. Second, large-scale privatization through SIP occurred after the Fifteenth Communist Party Congress in 1997 and therefore our sample is representative of China's privatized SOEs. Third, our sample ends in 2000 because in 2001 the CSRC regulators started to encourage complete restructuring of SOE firms that are preparing for IPOs and in 2002 they started to strengthened restrictions on related-party transactions. While anecdotal evidence suggests that these rules are not effectively enforced and expropriation remained severe in many companies, firms may have incentive to overstate the extent of restructuring and may become less willing to report related-party transactions.[15] Since we require three years of data after IPO, focusing on SIP up to 2000 is likely to increase the power to our tests.

---

[15] In 2001 the CSRC issued "Guidance on Pre-IPO Restructuring," which required carved-out firms to follow the "principle of complete restructuring" and to ensure its independence in operation, assets, staff, organization, and finance. The carved-off companies are also required to have at least one to two years of independent operation and accounting depending on the circumstances. In 2002 the CSRC issued "Disclosure Requirements of Significant Related Party Transactions," which requires independent board of directors to comment on fairness and procedural appropriateness of the transactions. In 2003 the CSRC and State Asset Management Bureau issued "Rules on Trade Credits between Listed Companies and their Related Parties and Rules on Loan Guarantees Provided by Listed Companies to Their Related Parties." These rules prohibited payment from the listed company to cover the related parties' operating cost or to give loans to related parties.

Data on pre-privatization restructuring are manually collected from each firm's IPO prospectus. The IPO prospectus gives information on the history of the firm: on how it evolved from a former SOE into a shareholding company, on the firm's controlling shareholder and, in case of a carve-out, on the parent company that contributed assets to the firm. In the few cases for which the IPO prospectus does not give sufficient information about the pre-privatization restructuring, we search the companies' websites.

Related-party transactions are manually collected from annual reports. Chinese listed firms are required to report transactions with parties controlled by its largest shareholders separately from those with parties not controlled by its largest shareholders.

Financial data, stock returns, and information on ownership structure are obtained from the China Stock Market and Accounting Research (CSMAR) database compiled by GTA Technology Company. Among the 295 firms that went public between 1997 and 2000, there were ten firms that did not report detailed accounting information for the three years prior to IPO. Thus, our final sample contains 285 firms and 2616 filings of related-party transactions with controlling shareholders.

Local fiscal, economic, and demographic data are manually collected from China Compendium of Statistics (1949−2004).

2.2   Descriptive Statistics

Table 1 reports the summary statistics of firm characteristics at the time of IPO. Among the 285 firms, 213 firms (75%) went through incomplete restructuring prior to privatization. Incompletely restructured firms tend to be significantly larger in terms of total assets, sales, and market capitalization. We report two measures of profitability. One is return on assets (ROA), defined as operating income (EBIT) over assets. Because China's SIP is through primary offerings,

capital raised during IPO is kept in the firm, resulting in a mechanical increase in total assets. Therefore we adjust the total assets after the privatization based on the method proposed by Aharony, Lee, and Wong (2000). Given the noise in the ROA measure, we also report return on sales (ROS) (defined as operating income over sales). Incompletely restructured firms are significantly more profitable by the ROA measure (at the 5% level for the mean and the 10% level for the median) but not by the ROS measure.

Since many firms were listed shortly after the restructuring, they did not operate as separate entities. Thus they provide what is called "virtual accounting" for the three years before the IPO during the IPO filing. It is not surprising that incompletely restructured firms, which are carve-outs of parent SOEs, are significantly more likely to submit virtual accounting (at the 1% level).[16] Virtual accounting allows leeway for window dressing to boost pre-listing performance, which may mechanically lower performance after IPO. However, as we show later, virtual accounting does not drive the performance differences between the two types of firms.

Ownership is highly concentrated in partially privatized Chinese SOEs: the largest shareholders (holding government-owned shares) own more than half of the shares (a mean of 54% and a median of 57%). Their ownership is greater in incompletely restructuring firms (at the 1% significance level). Moreover, in incompletely restructured firms, the largest shareholders are much more likely to appoint their own personnel as the chairman (in 86% of the cases vs. 46% in completely restructured firms) or CEO (51% vs. 16%) of the listed firms.[17]

Next we examine the breakdown of share classes. Consistent with partial privatization, the state has dominant control rights and on average owns 66% of the shares (the median is 67%).

---

[16] The need for virtual accounting is not limited to firms with incomplete restructuring. Many completely restructured firms are former SOEs with their less efficient parts being combined into separate (albeit independent) entities and thus they also do not have independent operating histories.

[17] 17 firms provide no information on the provenance of the CEO or chairman in their IPO prospectuses. For one other firm we could not determine whether the CEO is from the controlling shareholder. We exclude these firms in calculating the relevant summary statistics.

While incompletely restructured firms have significantly higher government ownership than completely restructured firms, the difference is less than 5%, which, given that the government owns close to or more than half of the shares, does not make any economic difference in terms of control rights.[18] Among the two types of government shares (i.e., state share and legal person shares), the incompletely restructured firms have significantly more state shares, implying that their assets are directly owned by the state rather than acquired by the parent SOEs using retained profits. Although foreign shares are found to be related to better post-privatization performance in other emerging economies, foreign ownership is tiny in Chinese SIP – less than 1% on average with a median of zero – and the two types of firms do not differ in their foreign ownership. Employee ownership is also small, although incompletely restructured firms have significantly less employee shares, possibly reflecting that they are carve-outs of assets and workers.

Finally, we report the proportion of firms under the supervision of the central vs. local governments (i.e., provincial and city governments). About 21% of SIP firms are under the direct control of the central government. 31% and 48% of firms are supervised by provincial and city governments respectively. Note that since SIP firms are relatively large firms, the percent supervised by central and high-level local government (i.e., provincial governments) are higher than the national average.

III. Empirical Analysis

In this section, we present three sets of analysis. We first show how political incentives determine the choice of restructuring methods. We then show that incompletely restructured firms significantly underperform completely restructured firms and that this result is not likely to be

---

[18] Indeed, later in (unreported) regressions, we do not find this variable to be statistically significant in explain firm behavior or performance.

driven by self-selection. We next identify the mechanism of underperformance in incompletely restructured firms, that is, expropriation by large shareholders.

3.1 Government Incentives and Restructuring Choices

In this sub-section, we show how governments' political incentives shape the restructuring process during privatization. Restructuring money-losing SOEs entails layoffs and injection of capital, which are both politically and financially costly. Thus the ability of provincial and local goverments to bear these costs determines their incentives for restructuring.[19] One measure of such ability is the government's fiscal revenue as a percent of GDP: the higher the revenue, the greater ability the government has to inject capital or to pay for the layoffs.[20] The other measure is the share of SOE employment in total urban employment. A greater share of SOE employment indicates slower development of the private sector, which makes it harder for the laid-off workers to find new jobs and political opposition to layoffs stronger. Moreover, by late 1990s, most of the SOEs could not pay their workers or give their workers enough work (this "no work" status without being formally laid off is called *xia gang)*. This implicit unemployment problem is most severe in areas dominated by SOEs, again resulting in stronger political pressure against layoffs during the restructuring.[21]

We estimate the following logit model:

Prob(Incomplete Restructuring =1) = Λ(Y), where
Y = a + b Government Incentives + c Controls + Industry Dummies
     + IPO-Year Dummies,   (4)

---

[19] Bai, Lu, and Tao (2006) discuss the importance of unemployment in Chinese governments' privatization decisions.
[20] The results are robust to an alternative measure of fiscal revenue per capita – not surprisingly since the two variables have a raw correlation of 77% (with a p-value of 0.000).
[21] The extent of this implicit unemployment problem is alarming. According to various estimates, surplus workers ranged from 23.5% to 44% of the SOE labor force during 1993−96 (Li and Xu, 2001, and Dong and Putterman, 2003). According to a World Bank survey in 1994, one-third of firms reported a labor redundancy rate exceeding 20% (Bai et al., 2006).

and *Λ(.)* is the logistic cumulative distribution function. *Incomplete Restructuring* is a dummy variable indicating incomplete restructuring during privatization. *Government Incentives* is measured as government revenue as a percent of GDP and the share of SOE employment in total urban employment. Given the importance of provincial government in SIP decisions, we measure both of the two government-incentive variables at the provincial level in the year prior to privatization.[22] We include two sets of control variables. One is the province-level economic environment in the year prior to privatization, including GDP growth and population growth. The other set of controls is at the firm-level, including profitability (EBIT over sales), size (log of assets), and leverage – all are averaged in the three years prior to privatization to smooth out noise.

Column (1) of Table 2 shows that a higher share of SOE employment significantly increases the chance for the government to incompletely restructure the firm (at the 1% level). The impact of fiscal revenue as a percent of GDP is negative as expected, though not significant. In column (2) of Table 2, we include an interaction term between *Fiscal revenue/GDP* and a dummy variable indicating high share of SOE employment (defined as *% of SOE employment* greater than the sample median). The idea is that the impact of greater government fiscal capacity is likely to be more important in regions where unemployment is a bigger concern because greater fiscal capacity allows the government to provide better support for redeployment of laid-off workers in a complete restructuring. Consistent with this hypothesis, the interaction term is significantly negative (at the 1% level).

---

[22] We note that, while provincial level variables may not perfectly match the jurisdiction of the SOEs, this is not likely to be a big concern. For the centrally supervised SOEs, to the extent that unemployment is a "local" problem, its burden would be born at the local level and, given the size of centrally supervised SOEs, it is likely to be shouldered by the provincial government. For city-level SOEs, it is not even clear ex ante that city-level measurements are the best strategy. This is because within-province labor mobility is easier than cross-province migration and there is high correlation between cities within the province. Moreover, there is likely to be inter-government transfer of resources from the provincial government to the city government to deal with restructuring of large SOEs. Indeed when we experiment using city government fiscal variables, we find that the estimation becomes noisier although the qualitative results remain the same.

It is worth discussing an alternative interpretation of the above results. That is, the choice of pre-privatization restructuring method reflects provincial government's political preferences supporting or opposing private ownership. If the government distrusts private ownership, then it might prefer incomplete privatization, obtaining tighter control through the parent company. These distrustful governments may provide a more hostile business environment for incompletely restructured firms, explaining their weak performance. These governments would also likely have a smaller private sector and poorer economic performance generally so they receive lower tax revenue. Taking together, government incentives for incomplete restructuring may influence ex-post performance of these firms, raising questions of the validity of instruments. This explanation, while seemingly plausible, is not what actually happened. In interpreting the results, one needs to take into consideration several aspects of the institutional background discussed earlier. First, the provincial governments were enthusiastic about public listing of SOEs in their jurisdictions, to the point that a national quota system has to be implemented. Contrary to the above view, the governments were known to be supportive of listed firms in the region, even to the point of bailing them out to avoid de-listing. Second, in both complete and incomplete restructuring, the state retained at least 50% ownership and thus dominant control. Hence it is not true that incomplete restructuring implies stronger state control. Rather, the key difference lies in where the state-related shares are deposited. In incomplete restructuring, they are in the parent company, whereas in the case of complete restructuring, they are in a "third-party" SOE and/or State Asset Management Bureau, which are passive shareholders. Third, as discussed earlier, the SIP firms are large firms selling in the national market and thus are not likely to be affected by our measures of government incentives, which are based on regional characteristics.

In column (3) of Table 2, we further add firm-level variables at the time of IPO including size, profitability and leverage. Firm size is significantly positively related to incomplete

restructuring, which is not surprising because the cost of restructuring tends to be higher for larger firms, and such a large cost would be difficult for the government to absorb. Notably, profitability is not statistically significant in determining the restructuring choices. Thus it is not true that less profitable firms are chosen to be incompletely restructured.

Finally, we add two dummies indicating whether the SOE is supervised by the central government or by a provincial government. Neither of the two dummies is significant, suggesting that the level of government supervising the firms does not have any independent power in explaining the choice of restructuring methods.

As a summary, the choice of restructuring methods is mainly driven by political and fiscal considerations, particularly the impact of unemployment and government's fiscal ability to inject capital to loss-making SOEs. Economic factors, such as firm profitability, do not play a significant role in restructuring decisions. These findings demonstrate the importance of political economy factors in shaping the design of economic institutions. They are also useful in interpreting our later results on post-privatization performance.

3.2 Incomplete Restructuring and Firm Performance

This sub-section quantifies the marginal impact of pre-privatization restructuring on firm performance. We examine the change in average performance three years before and after the privatization, following the standard approach in existing literature (e.g., Megginson, Nash, and Randenborgh, 1994; Boubakri and Cosset, 1998; Dewenter and Malatesta, 2001; D'Souza and Megginson, 1999; and Sun and Wong, 2003). We estimate the following model:

$$\Delta Performance = a + b\ Incomplete\ Restructuring + c\ Firm\ Controls + Industry\ Dummies + IPO\text{-}Year\ Dummies, \qquad (2)$$

where ΔPerformance is the difference between the three-year average of performance measures before and after privatization. Incomplete Restructuring is a dummy variable indicating the incomplete pre-privatization restructuring process. Firm controls include size (defined as the natural log of total assets), leverage (defined as the book value of debt over total assets), and a set of ownership variables as in the literature, including the percentage of foreign ownership, employee ownership, and legal-person shares.[23] To be consistent with the dependent variable, the independent variables are also averaged across the three years after IPO. We include industry dummies to control for government regulation and industry-wide shocks, as well as dummies indicating the IPO years to control for macroeconomic shocks.[24]

Before we report our regression results, Table 3 provides the summary statistics of privatization performance. Consistent with Sun and Tong (2003), we find that privatization in China has not brought about improvements in profitability. For both the ROA and ROS measures, profitability is significantly lower after privatization (columns (1) and (2) in Panel A of Table 3). Further, incompletely restructured firms experience significantly larger profitability drops (columns (3)-(6) of Table 3).

Table 4 presents the multivariate analysis. Columns (1) and (4) of Table 4 demonstrate that Incomplete Restructuring has a significantly negative impact on privatization performance, for both ROA and ROS measures (at the 1% levels). The effect is economically important: incompletely restructured firms under-perform the control group by 5.3 percentage points in ROA and 6.2 percentage points in ROS. Consistent with our earlier discussion that the share classes in China do not reflect ultimate ownership and control, the ownership variables generally do not have a

---

[23] In a robustness check, we also controlled the percentage of state shares and total tradable shares. They are not significant and their inclusion does not change the main results or significance levels. In the interest of brevity, we do not report these results; but they are available upon request.

[24] While some Chinese studies (e.g., Sun and Tong, 2003) use a 14-industry classification, which is roughly comparable to the one-digit SIC industry classification, we adopt a more refined classification, which is comparable to two-digit SIC, to better control for industry-wide effects. We have a total of 29 industries in our sample. All our results are robust to one-digit industry dummies.

significant impact on performance. We also experiment with an interaction between largest shareholder's ownership and *Incomplete Restructuring* – to capture the effect that as ownership increases its incentive is more aligned with profit maximization, it is not significant statistically (unreported). This could be due to two reasons. First, as the ownership becomes higher, the largest shareholder tends to have dominant control which makes expropriation easier. Second, the largest shareholders' ownerships for SIP firms are all quite high (with the average above 50%) and there is not enough variation in this measure.

In columns (2) and (5) of Table 4, we further control for whether the firms conducted virtual accounting at the time of IPO. This variable is not statistically significant. When we interact virtual accounting with the *Incomplete Restructuring* dummy, the interaction term is still not significant (unreported). Finally, when we add a dummy variable indicating whether the CEO or president is from the largest shareholder as an additional control, it is not statistically significant (columns (3) and (6) in Table 4). Moreover, the interaction between this variable and *Incomplete Restructuring* is not significant either (unreported).[25] These findings confirm our early discussion that, while these managers may appear "politically connected" due to their past or current affiliations with the parent SOEs, such political connection is a by-product of the privatization process and thus does not have any independent explanatory power in explaining privatization performance.

One concern about performance comparison is the selection issue: for example, better firms may have been chosen to be completely restructured. Our earlier findings that political incentives, rather than economic considerations, determine the choice of restructuring method guard against this possibility. To provide further evidence that the performance results are not driven by selection, we use the government incentives, namely *%SOE Employment* and *Fiscal Revenue/GDP*, both

---

[25] If we include only *CEO/President from Large Shareholder* and drop the *Incomplete Restructuring* dummy, the former is significantly negative for the ROA measure but not for the ROS measure, which further supports the point that *CEO/President from Large Shareholder* is a by-product of the pre-privatization restructuring and, as a result, its explanatory power comes from the information it contains about the restructuring choice.

measured at the time of privatization, as instruments to estimate the effect of restructuring on performance. As discussed earlier, the SIP firms are large SOEs competing in national product markets. Thus their performance is not likely to be affected by our measures of government incentives, which are regional variables.

We employ two IV estimation methods. One is a two-step treatment model as in Wooldridge, in which the first step is a probit model and the second step is an IV estimation using predicted probability and its interactions with demeaned exogenous variables as instruments.[26] The second-step results are presented in columns (1) and (3) of Table 5. Similar to the OLS estimation, incomplete restructuring has a significantly negative impact on post-privatization performance for both ROA and ROS measures (at the 5% level). Given the potential concerns about weak instruments in IV estimation, our second approach is the limited information maximum likelihood (LIML) estimation, which is more robust to weak IV problems.[27] The results are presented in columns (2) and (4) of Table 5. It is reassuring that LIML estimators of the effect of *Incomplete Restructuring* remain statistically negative (at the 10% level).

3.3   Identifying the Mechanism: Expropriation through Related-Party Transactions

In this subsection, we present evidence on the mechanism of weak post-privatization performance of incompletely restructured firms, that is, expropriation by the parent companies through related-party transactions. We first demonstrate that related-party transactions are much more prevalent among incompletely restructured firms, thereby offering opportunities for expropriation. We then show that the extent of related-party transactions is associated with

---

[26] In the first step, we estimate the probit model $P(w=1|\mathbf{x},\mathbf{z})=G(\mathbf{x},\mathbf{z})$ by maximum likelihood, where w is the endogenous choice variable, $\mathbf{x}$ is the vector of exogenous variable, $\mathbf{z}$ is the vector of instruments. We then obtain the fitted probability Ghat. In the second step, estimate the equation: $y_i = \gamma+\alpha w_i+\mathbf{x}_i\beta+w_i(\mathbf{x}_i-\bar{x})\delta+e_i$ by IV, using instruments 1, Ghat, $\mathbf{x}_i$ and Ghat$(\mathbf{x}_i-\bar{x})$.

[27] Note that there are not readily available statistics for the weak IV test for the treatment model. However, when we run a TSLS, the Cragg-Donald statistics are below the critical value as in Stock and Yogo (2007), suggesting weak IVs.

significantly lower operating performance, confirming that these transactions are expropriative in nature.

3.3.1 Prevalence of Related Party Transactions in Incompletely Restructured Firms

We identify three types of potentially expropriative transactions. The first is transfer pricing for goods and services provided by the largest shareholders, such as the sale of products, the purchase of raw materials, and the rental of plants and equipment. The second is sales of assets to the listed companies.[28] Lastly, large shareholders can force listed firms to provide generous trade credits for business transactions in the form of accounts receivables and advanced payments. In fact, related-party transactions will show up as trade credits unless there is an immediate cash payment. It has been frequently reported by the media (including the stories we quote earlier) that in expropriative transactions the parent company never paid back the trade credits owed. Thus this variable in many ways captures the overall extent of related-party transactions.

Table 6 presents the descriptive statistics of related party transactions during the three years post privatization. As shown in Panel A of Table 6, incompletely restructured firms have significantly more transactions involving transfer pricing for goods and services − including product sales, raw material purchases and rental payments − than do completely restructured firms (all at the 1% level for both the mean and the median). Each of the three measures is about three times greater than for the control group. Incompletely restructured firms on average purchased assets from largest shareholders that amounted to 12.1% (with a median of 8.7%) of their total assets, whereas the control group purchased 6.4% of total assets (the median is 0.6%). The differences in both the mean and the median are statistically significant at the 1% level. Finally, incompletely restructured firms have on average 4.7% (with a median of 1.0%) of their assets tied up in accounts receivables from

---

[28] Eight firms (among which two are completely restructured and six are incompletely restructured) reported asset purchases from related parties but did not disclose the amounts of the transactions. We do not include them in calculating the corresponding summary statistics.

related parties, which is four times more than for the control group. When we calculate the net trade credit (by subtracting account payables), we obtain very similar results.

While we emphasize the impact of incomplete restructuring on related-party transactions, it should be noted that completely restructured firms also have considerable related transactions with their controlling shareholders. This could contribute to the overall failure of privatization to improve operating efficiency in China.

In our multivariate analysis, we estimate the following model:

$$RPT = a + b \text{ Incomplete Restructuring} + \text{Firm Controls} + \text{Industry Dummies} + \text{IPO-Year Dummies} + \varepsilon, \tag{1}$$

where *RPT* is related-party transactions during the three years after IPO. *Incomplete Restructuring* is a dummy indicating incomplete restructuring. Firm controls include size and the percentage ownership of the largest shareholder (*%Ownership*). Because we use the three-year sum of related-party transactions to reduce noise, both *Size* and *%Ownership* are taken as the three-year average after SIP. The main coefficient of interest is *b*, which is expected to be positive. The impact of *%Ownership* is, however, not clear ex ante. On one hand, greater ownership means more control rights, thus making expropriation easier. In the Chinese setting, however, as discussed earlier, the largest shareholder's ownership is almost always close to or above 50%, which means that incremental ownership may not have any significant impact. On the other hand, a greater ownership also means that larger shareholders have greater cash flow rights, which generally reduces the incentive to expropriate. Some firms in our sample do not have related-party transactions in the form of asset purchases and payments for goods and services. Therefore, we estimate a Tobit model for these two dependent variables.

Columns (1)-(4) in Panel B of Table 6 demonstrate that incompletely restructured firms have significantly more of each type of related party transactions than do completely restructured firms

(at the 1% or 5% levels)[29] In column (5) in Panel B of Table 6, related party transaction is measured by net trade credits with the largest shareholders, which indicates the overall extent of these transactions. As expected, *Incomplete Restructuring* is significantly positive (at the 1% level).

In sum, we show that related-party transactions are prevalent in China's partially privatized firms, especially in incompletely restructured firms, which is consistent with large shareholder expropriation. However, since we do not observe the exact terms of these related-party transactions, one cannot be certain that these transactions are expropriative in nature. Thus, in the next sub-section, we explicitly show that related-party transactions are associated with weaker operating performance, confirming that these transactions are priced at unfavorable terms for the listed firms.

3.3.2 *Evidence of the Expropriative Nature of Related-Party Transactions*

We now provide evidence that related-party transactions are expropriative in nature by showing that these transactions are associated with significantly lower operating performance.

Since we have six different measures of related-party transactions that are closely correlated, the estimation would be too noisy if we include them all in the regression. On the other hand, to the extent that different related-party transactions are substitutes, including each transaction separately would not capture the *full* effect of expropriation on performance. As discussed earlier, trade credits reflect the overall extent of related-party transactions. Thus we rely on net trade credits owed by the largest shareholders in making our inference of the quantitative impact of related party transactions on performance. In columns (1) of Table 7, we add net trade credits owed by the large shareholders,

---

[29] Firms may lease under capital leases or operating leases. In the case of operating leases, leasing and paying fixed rent resemble purchases financed by debt. In this sense, it may be a substitute for debt financing. In the case of capital leases, the firm has to book the value of the leased item as debt. In both cases, leasing could be affected by the debt choices of the firms. Therefore, in an unreported regression, we control for leverage. The debt ratio turns out to be statistically insignificant, probably reflecting the fact that we do not observe whether the lease contract is a capital lease or an operating lease. Our main results (and their statistical significance) remain unchanged.

to the performance equation (Equation (2)). It is significantly negatively related to performance at the 1% level for both ROA and ROS measures.

To further support the above findings, we examine how each type of transaction affects performance, keeping in mind that each individual measure does not capture the full impact of expropriation. Here we focus on return on sales, because many related-party transactions, at the same time as they transfer profits out of the firms, also have an effect on the size of their assets. Specifically, when a firm purchases its raw materials from related parties, it does not need to own the facilities related to materials purchases (e.g., offices for locating suppliers). Or if a firm can rent facilities from its largest shareholders, it does not have to own these facilities as part of its assets.[30] All these reduce asset size and increase performance measured by ROA, which lowers the power of the tests.

In columns (2)-(4) of Table 7, we include each type of the related-party transaction in the regression − except for product sales because it reduces sales, the denominator of our performance measure. Even though each individual transaction does not capture the full effect of expropriation, the results support the view that large shareholders expropriate through related-party transactions. Both raw material purchases and rental payments are significantly negatively related to performance (at the 10% level). In column (4) of Table 7, the coefficient on asset purchases is not statistically significant, probably reflecting that firms may not expense asset purchases but treat them as acquisitions of capital goods.

In all these regressions, the effect of the *Incomplete Restructuring* dummy on performance is weakened: both the point estimates and their statistical significance levels are lower. Thus, expropriation through related-party transactions is at least partially responsible for the lower performance of incompletely restructured firms. Note that the coefficient on *Incomplete*

---

[30] It is true that this also reduces earnings due to an increase in rental costs. However, as long as the "rental yield" on the facility is lower than ROA under the owning scenario, the ROA under renting will be higher.

Restructuring is lowest and least significant for trade credits, our "catch all" measure of related-party transactions, further supporting the validity of this measure. In this case, the *Incomplete Restructuring* dummy is close to 40% lower, suggesting that at least 40% of inferior performance of incompletely restructured firms is attributable to tunneling by their parent SOEs.

That the *Incomplete Restructuring* dummy remains significantly negative suggests that there are other channels through which this type of restructuring affects performance. For example, expropriation may weaken the incentive of listed firms to improve efficiency and to make risky investments in positive-NPV projects, because they cannot keep all the upside gains but they must bear all the costs. While pinning down exactly what these other channels are is beyond the scope of this paper, their very existence suggests that incomplete restructuring has other influences on post-privatization performance through managers' misaligned interests.

3.4. Further Evidence of Expropriation: Dividend Policies

We now present another perspective on expropriation, that is, dividend policies. As discussed earlier, non-tradability of shares owned by the large shareholders creates incentives to push for dividends. However, the marginal incentive to push for dividends is reduced in incompletely restructured firms due to large shareholders' ability to expropriate.

We examine four measures of payout ratios. The first is the most commonly used measure, the dividend-earnings ratio, where earnings are measured after interest and taxes but before extraordinary items (La Porta et al., 2000 and Faccio et al., 2001). Chinese regulators examine the dividend-over-net-income ratio when the firms request to issue seasoned equity, so our second measure is dividend-over-net-income. Earnings-based payout ratios, however, can be noisy both

because earnings are affected by expropriation and because earnings can be easily manipulated.[31] To guard against these problems, we use two other measures, namely, the dividend-sales ratio and the dividend-market-capitalization ratio. We note that reported sales may be affected by expropriation through sales of final products to related parties, whereas market capitalization is subject to the volatile price movements in the stock market. While there is no perfect measure of payout ratios, the diversity of our measures should help prevent us from drawing incorrect conclusions due to biases in individual measures.

Panel A of Table 8 presents the average dividend payout ratios during the three years after IPO. A median firm pays out about 36% of its earnings, which is in line with the 30% payout ratio around the world as reported in La Porta et al. (2000).[32] Consistent with our conjecture, incompletely restructured firms appear to pay fewer dividends for most of the measures (six out of eight), although the difference is not statistically significant.[33]

To capture the marginal impact of expropriation on dividend policy, we estimate the following model:

$$Payout = a + b\ \%Ownership + c\ Incomplete\ Restructuring + d\ Firm\ Controls$$
$$+ Industry\ Dummies + IPO\text{-}Year\ Dummies + \varepsilon, \tag{4}$$

where *Payout* is the dividend payout ratio; *%Ownership* is the percentage ownership of the largest shareholder, and *Incomplete Restructuring* is a dummy indicating incomplete restructuring. Similar to Faccio et al. (2001), we average the payout ratios over the three post-IPO years to smooth out the noise; as a result, the independent variables are also taken as averages. Coefficient *b* is expected to

---

[31] The literature also uses the dividend-cash-flow ratio. Probably reflecting diversion of cash by the controlling shareholders, cash flow of many firms is negative (even if net income is positive), rendering this measure of payout ratio meaningless. Therefore, we only report the dividend-net-income ratio. Cases of negative dividend-earning (9 firm-years) or dividend-net-income (2 firm-years) are excluded from our analysis.

[32] Despite a lack of investor protection, privatized Chinese firms have higher payout ratios than do the median of civil law countries (25%). There are several possible reasons. The obvious one is the controlling shareholders' preference for dividends since their shares are not tradable. Second, share repurchases are not allowed in China, which makes dividends the only means of payout. Finally, as discussed earlier, the regulators require at least three years of dividend history for seasoned equity offerings, which creates an additional incentive to pay dividends.

[33] When we compute industry adjusted dividend measures, the difference is still not significant (unreported).

be positive, reflecting the large shareholder's preference for dividends when their shares are non-tradable. Coefficient c is expected to be negative, due to the reduced marginal incentive to push for dividends when the large shareholder can expropriate. In our sample, about 10% (26) of the firms do not pay dividends. Thus, our dependent variable is truncated at zero and we estimate a Tobit model.[34]

Following the literature, we include, as firm controls, size, leverage, and annual sales growth. Leverage is expected to have a negative effect on dividends because higher leverage results in higher interest payments and more restrictive debt contracts that prevent dividend payments because dividends would be a wealth transfer to shareholders. The effect of annual sales growth on dividends is generally negative in the literature because higher growth calls for retention of profits to finance future investment projects (e.g., La Porta et al., 2000 and Faccio et al., 2001). In the Chinese setting, however, the impact of growth is not clear ex ante, for several reasons. First, Chinese state-owned banks lend to SOEs with few questions asked, which makes internal financing less important. Second, higher sales growth is likely to be associated with a firm's cash-generating ability. When large shareholders holding non-tradable shares push for dividend payments, they tend to press harder when the firm has more cash. Third, the Chinese regulators require firms making seasoned equity offerings to have at least three-years of dividend history and they demand explanations for low payout ratios. Thus, high growth firms may have higher payouts because they are more likely to issue additional equity.

As reported in Panel B of Table 8, the results across different measures of payouts are remarkably similar. *Incomplete Restructuring* enters with a negative sign, as expected, and is statistically significant at the conventional levels (columns (1), (3), (5), and (7) in Panel B of Table 8). The effect is economically large: for example, in the case of the dividend-earnings ratio, our

---

[34] An OLS model yields similar results (and significance levels).

estimates imply that incompletely restructured firms tend to have a payout ratio that is 12 percentage points higher in unconditional expected value.[35] Consistent with the non-tradability of the shares held by the large shareholders, *%Ownership* is significantly positively related to the payout ratio at the 1% level. The coefficients on size and leverage have signs consistent with the previous literature. The coefficient on sales growth is positive although sometimes insignificant, which is consistent with our earlier discussions. Lastly, to further capture the reduced incentive to push for dividends when expropriation is possible, we include an interaction term between the large shareholder's ownership and the *Incomplete Restructuring* dummy and find that this term is significantly negative, at either the 1% or the 10% level (columns (2), (4), (6), (8) in Panel B of Table 8).[36]

IV. Discussions and Robustness Checks

So far, we have documented the importance of the largest shareholders' incentives to expropriate in determining privatization outcome. A question that naturally arises is that if expropriation is so widespread, perhaps investors already discount the price when they first buy the shares. We doubt, however, that this is the case in China. With the market being a totally new concept in China merely 15 years ago, there is likely to be a learning process for investors. Indeed, when the firms went public, there was a craze for subscription of their shares. In fact the government did not seem to have anticipated the expropriation problem either: as discussed earlier, over the years it introduced various new rules to prevent related-party transactions and to push firms

---

[35] Incomplete restructuring lowers the likelihood of paying dividends by 6 percentage points and, conditional on paying dividends, it lowers dividend payment by 10 percentage points.

[36] We find that this interaction term is highly correlated with the ownership variable (0.75 correlation with a *p*-value of 0.001) and the *Incomplete Restructuring* dummy (0.86 correlation with a *p*-value of 0.001). As a result, when we include all three variables in the regression, the estimation is noisy and only ownership is significant. Since we intend to examine the non-linear effect of ownership due to the opportunity to tunnel provided by incomplete pre-privatization restructuring, we do not include the *Incomplete Restructuring* dummy in this estimation.

to pay out dividends. Finally in 2005, they banned the listing of incompletely restructured firms. Thus we expect that the outsider shareholders suffered financially from expropriation ex post.

The literature has used Tobin's Q as a valuation measure. Tobin's Q, however, may not be applicable in the current setting, for two reasons. First, government shares, which generally account for 50% or above of total shares outstanding, are not tradable. Thus it is not clear how their market value should be computed. Second, as discussed earlier, incomplete restructuring, at the same time as it make expropriation easier, also has implication on asset size. For example, if a firm rent facilities from the parent company, it does not need to own the facilities. This would, as long as Q is larger than one, mechanically increase Q when the rental payment is priced fairly, which biases against finding a valuation effect for incomplete restructuring.[37]

An alternative approach is to test long-run market returns, which we adopt here. We note several practical issues in our setting. The first is a benchmarking problem as pointed out by Sun and Tong (1999). Since almost all listed stocks in China are from privatized SOEs, there are no valid benchmarks of market portfolios to make return adjustments. Second, the irrationality that prevented investors from recognizing the expropriation problem *ex ante*, may hinder them from discounting the price appropriately *ex post*. Both problems would reduce the power of our test. This is why in this paper we rely on accounting performance to make our inferences. In view of these issues, we estimate robustness regressions and, because the market returns are skewed (the median is 25% lower than the mean),[38] we also use median regressions to reduce the impact of noise in the stock returns.[39]

---

[37] Suppose, without renting, the firm has assets of $100 and a Q of 1.5. Now it rents its office building and the value of the building is $10. If rental is fairly priced, capitalized future rentals should be $10. Thus, the new Q = (150-10)/(100-10) > 1.5.

[38] Koener and Bassett (1978) show that the regression median is more efficient than the least squares estimator in the linear model for any distribution for which the median is more efficient than the mean in the location model.

[39] If we use OLS, the main coefficient estimates have the same sign but are not statistically significant.

We employ two measures of stock returns performance three years after post-SIP. The first is a simple market-adjusted return. This measure, however, does not explicitly account for risk. Thus we also use a second measure: the abnormal return based on a simple market model to account for beta risk, which is essentially firm-level alpha. Both measures are calculated based on monthly stock returns starting from the first month after the IPO date. We note that there is a fairly large literature on the difficulty in measuring long-run stock returns (e.g., Lyon, Barber, and Tsai, 1999, Fama 1998). In our setting, the SIP firms do not even have the necessary trading history to implement some of the proposed strategies, which strengthens our earlier argument that we use market returns only as a robustness check of performance.

Columns (1) and (3) of Table 9 show that incompletely restructured firms have significantly lower stock returns during the three years post-SIP (at the 5% level), for both measures of stock performance. The results are robust to median regression estimation (columns (5) and (7) of Table 6). In columns (2), (4), (6), and (8), we control for virtual accounting and whether the CEO or president is from the parent company. Similar to our earlier analysis of operating performance, these variables are not statistically significant.[40] Meanwhile, the main results remain qualitatively the same.

It is important to note that even if prices are fully discounted ex ante, expropriation can cost significant economic efficiency. Our earlier evidence suggests that expropriation is not a pure transfer but has implications for privatized firms' incentive to improve efficiency. Further, discounted prices may also make it difficult for good firms to raise external financing. Indeed, earlier work has shown that weak corporate governance and the resulting expropriation discourages the development of well-functioning capital markets (La Porta et al., 1997) and makes equity markets more prone to financial crises (Johnson, Boone, Breach, and Friedman, 2000). Finally,

---

[40] Their interactions with the *Incomplete Restructuring* dummy are not significant either.

although our results suggest that Chinese investors did not recognize the expropriation problem at the time of IPO, they seemed to have realized this problem later. After 10 years of a bull market and a share frenzy, the market had been low since 2001, despite the country's rapid economic growth and overall confidence about its future growth. The market started to recover only after the reform of non-tradable shares in 2006, which gave the large shareholders the option to cash out by selling their shares and thus better aligned their incentives with those of the outside minority shareholders.

V. Conclusion

By examining the world's largest share issue privatization taking place in the world's largest emerging economy, China, we attempt to illustrate a general proposition, namely, political factors critically shape the design of economic institutions and their performance. In particular, we show that political constraints determine the choice of organizational forms of the privatized firms, which in turn influences the corporate governance and performance in privatized firms.[41]

In the Chinese case, when the government faced stronger opposition to layoffs and did not have sufficient fiscal resources to pay for costly and painful restructuring, it tended to let the firms go through an "incomplete restructuring" process. In this process, a parent-subsidiary structure was created, in which the most productive parts of the firms were carved out for public listing, leaving the parent SOEs to keep all the policy burdens under state ownership. As the controlling shareholders in a country with weak property rights protections, the parent SOEs had both the incentive and the ability to transfer resources out of the listed firms to solve their own problems. They did so by engaging in a wide range of related transactions with the listed companies, ranging

---

[41] There has been a growing empirical literature on the political economy of market reforms. In the privatization context, some scholars show that governments adopt terms of sale to further their political objectives (Jones et al., 1999); others show that privatization is delayed in democracies with proportional electoral systems (Bortolotti and Pinotti, 2006) or in regions with strong political competition from opposition parties (Dinc and Gupta, 2008). In the related context of banking reform, Kroszner and Strahan (1999) find that interest groups may influence the pattern of banking deregulation; Sapienza (2004) and Brown and Dinç (2005), respectively, document that governments tend to pressure state-owned banks to charge lower interest rates and are less likely to take over failing banks prior to an election.

from transfer pricing to working capital financing (through generous trade credits). They also facilitated these transactions by paying fewer dividends so that corporate resources were kept in the firm and under their control. As a result of expropriation, incompletely restructured firms significantly under-performed completely restructured firms.

Our paper highlights that, before property rights institutions are established, it is difficult for privatized firms to benefit from improved monitoring from large shareholders. Rather, large shareholders created during the privatization process and their incentive to expropriate can be detrimental to privatization outcomes. Given that privatization typically leads to concentration of ownership, our findings have implications for privatization design in general. Moreover, our paper demonstrates the importance of the privatization process in determining privatization outcome (e.g., Barberis et al., 1996, Frydman et al, 1999, and La Porta and Lopez-de-Silanes, 1999).

Our analysis also suggests that there is a loss of economic efficiency as a result of expropriation: expropriation is not a zero-sum game and incompletely restructured firms under-perform beyond expropriation itself. Moreover, expropriation is likely to discourage development of well-functioning capital markets (La Porta et al., 1997) and cause equity markets to be more prone to financial crises (Johnson, Boone, Breach, and Friedman, 2000). Thus, given the importance of privatized firms in transitional economies – in the Chinese case it is 80% of the stock market capitalization − preventing future expropriation through privatization design is of vital importance to resource allocation, economic efficiency, and ultimately long-run economic growth and stability.

References

Aharony, J., Lee, C. W. J., Wong, T. J., 2000. "Financial Packing of IPO in China." *Journal of Accounting Research* 38(1): 103–126.

Bai, C., J. Lu, and Z. Tao, 2006. "The Multitask Theory of State Enterprise Reform: Empirical Evidence from China." *American Economic Review Papers and Proceedings:* 353-356.

Barberis, N., M. Boycko, A. Shleifer, and N. Tsukanova, 1996. "How Does Privatization Work? Evidence from the Russian Shops." *Journal of Political Economy* CIV: 764–790.

Bertrand, M., P. Mehta, and S. Mullainathan, 2002. "Fretting Out Tunneling: An Application to Indian Business Groups." *Quarterly Journal of Economics:* 121-148.

Bertrand, M., F. Kramarz, and A. Schoar, and D. Thesmar, 2005. "Politically Connected CEOs and Corporate Outcomes: Evidence from France." Unpublished Working Paper.

Boubakri, N. and J. Cosset, 1998. "The Financial and Operating Performance of Newly-Privatized Firms: Evidence from Developing Countries." *Journal of Finance* 53: 1081-1110.

Boycko, M., A. Shleifer, and R. Vishny, 1994. "Voucher Privatization." *Journal of Financial Economics* 35: 249-266.

Brown, C. O., and I. S. Dinç, 2005, "The Politics of Bank Failures: Evidence from Emerging Markets." *Quarterly Journal of Economics* 120(4):1413–44.

Claessens, S., S. Djankov, J. Fan, and L. Lang, 2002. "Disentangling the Incentive and Entrenchment Effects of Large Shareholdings." *Journal of Finance* 57: 2741-2771.

Cornelli, F., and D. Li, 1997, "Large Shareholders, Control Benefits and Optimal Schemes for Privatization." *RAND Journal of Economics* 28: 585-604.

Cheung , S. Y. L., R. Rau, A. Stouraitis, 2006, "Tunneling, Propping and Expropriation: Evidence from Connected Party Transactions in Hong Kong." *Journal of Financial Economics* 82: 343-386.

Dewenter, K., and P. Malatesta, 2001. "State-Owned and Privately Owned Firms: An Empirical Analysis of Profitability, Leverage, and Labor Intensity." *American Economic Review* 91: 320-334.

Dinc, I. S. and N. Gupta, 2010, "The Decision to Privatize: Finance, Politics, and Patronage." forthcoming in *Journal of Finance* .

Djankov, S., R. La Porta, F. Lopez-de-Salines, and A. Shleifer, 2005. "The Law and Economics of Self-Dealing." *NBER Working Paper* W11883.

Dong, X. Y., and L. Putterman, 2003, "Soft budget constraints, social burdens, and labor redundancy in China's state industry." *Journal of Comparative Economics, Elsevier* 31(1):110-133.

D'Souza, J., and Megginson, W., 1999. "The Financial and Operating Performance of Newly Privatized Firms in the 1990s." *Journal of Finance* 54: 1397–1438.

Dyck, A. and L. Zingales, 2004. "Private Benefit of Control: An International Comparison." *Journal of Finance*: 537-600.

Estrin, S., J. Hanousek, E. Kočenda, and J. Svejnar, 2009, "Effects of Privatization and Ownership in Transition Economies." *Journal of Economic Literature* 47(3): 1–31.

Faccio, M., Lang, L. H. P., Young, L., 2001. "Dividends and Expropriation." *American Economic Review* 90(1): 54-78.

Fama, E., 1998, "Market Efficiency, Long-term Returns, and Behavioral Finance." *Journal of Financial Economics* 49: 283-306.

Fan, J. and T. J. Wong, 2007. "Politically-connected CEOs, Corporate Governance and Post-IPO Performance of China's Newly Partially Privatized Firms." *Journal of Financial Economics* 84: 330–357.

Frydman, R., C. Gray, M. Hessel, and A. Rapaczynski, 1999. "When Does Privatization Work? The Impact of Private Ownership on Corporate Performance in the Transition Economies." *Quarterly Journal of Economics* 114: 1153–1191.

Gupta, N., 2005. "Partial Privatization and Firm Performance." *Journal of Finance* 60: 987-1015.

Jefferson, G. H., and T. G. Rawski, 1994, "Enterprise Reform in Chinese Industry." *Journal of Economic Perspectives,* American Economic Association 8(2):47-70.

Johnson, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000. "Tunneling." *American Economic Review (Papers and Proceedings)*.

Johnson, S., P. Boone, A. Breach, and E. Friedman, 2000. "Corporate Governance in the Asian Financial Crisis." *Journal of Financial Economics*.

Jones, S. L., Megginson, W. L., Nash, R.C., and Netter, J.M., 1999. "Share Issue Privatizations as Financial Means to Political Ends." *Journal of Financial Economics* 53: 217–253.

Koenker, R., and G. Bassett Jr., 1978, "Regression Quantiles." *Econometrica* 46(1): 33-50.

Kroszner, R. S., and P. E. Strahan, 1999, "What Drives Deregulation? Economics and Politics of the Relaxation of Bank Branching Restrictions." *Quarterly Journal of Economics* 114(4):1437-67.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1997. "Legal Determinants of External Finance." *Journal of Finance* 52, 1131-1150.

La port R., Lopez-de-Silanes, F., 1999. "The Benefits of Privatization: Evidence from Mexico." *Quarterly Journal of Economics*, 1193–1242.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000. "Agency Problems and Dividend Policies Around the World." *Journal of Finance* 55: 1-33.

Li, W., and L. C. Xu, 2002, "The Political Economy of Privatization and Competition: Cross-Country Evidence from the Telecommunications Sector." *Journal of Comparative Economics, Elsevier* 30(3):439-462.

Lyon, J.D., B. Barber, and C. L. Tsai, 1999, "Improved Tests of Long-Run Abnormal Returns.", *Journal of Finance* 54:165-201.

Megginson, W., R. C. Nash and M. V. Randenborgh, 1994. "The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis." *Journal of Finance* 49: 403-452.

Megginson, W. L., J. M. Netter, 2001. "From State to Market: A Survey of Empirical Studies on Privatization." *Journal of Economic Literature* 39: 321–389.

Miller, J., 2006. "Evaluation of Mass Privatization in Bulgaria." *William Davidson Institute Working Paper* 814.

Naughton, B., 1994, "What is Distinctive about China's Economic Transition? State Enterprise Reform and Overall System Transformation*." Journal of Comparative Economics* 18(3): 470-90.

Sun, Q., Tong, W. H. S., 2003. "China Share Issue Privatization: The Extent of Its Success." *Journal of Financial Economics* 70: 183–222.

Wooldridge, Jeffrey M., "Econometric analysis of cross section and panel data." *Cambridge, Mass.: MIT Press*, c2002.

Figure 1. Complete Restructuring of Harbin Air Conditioning Company
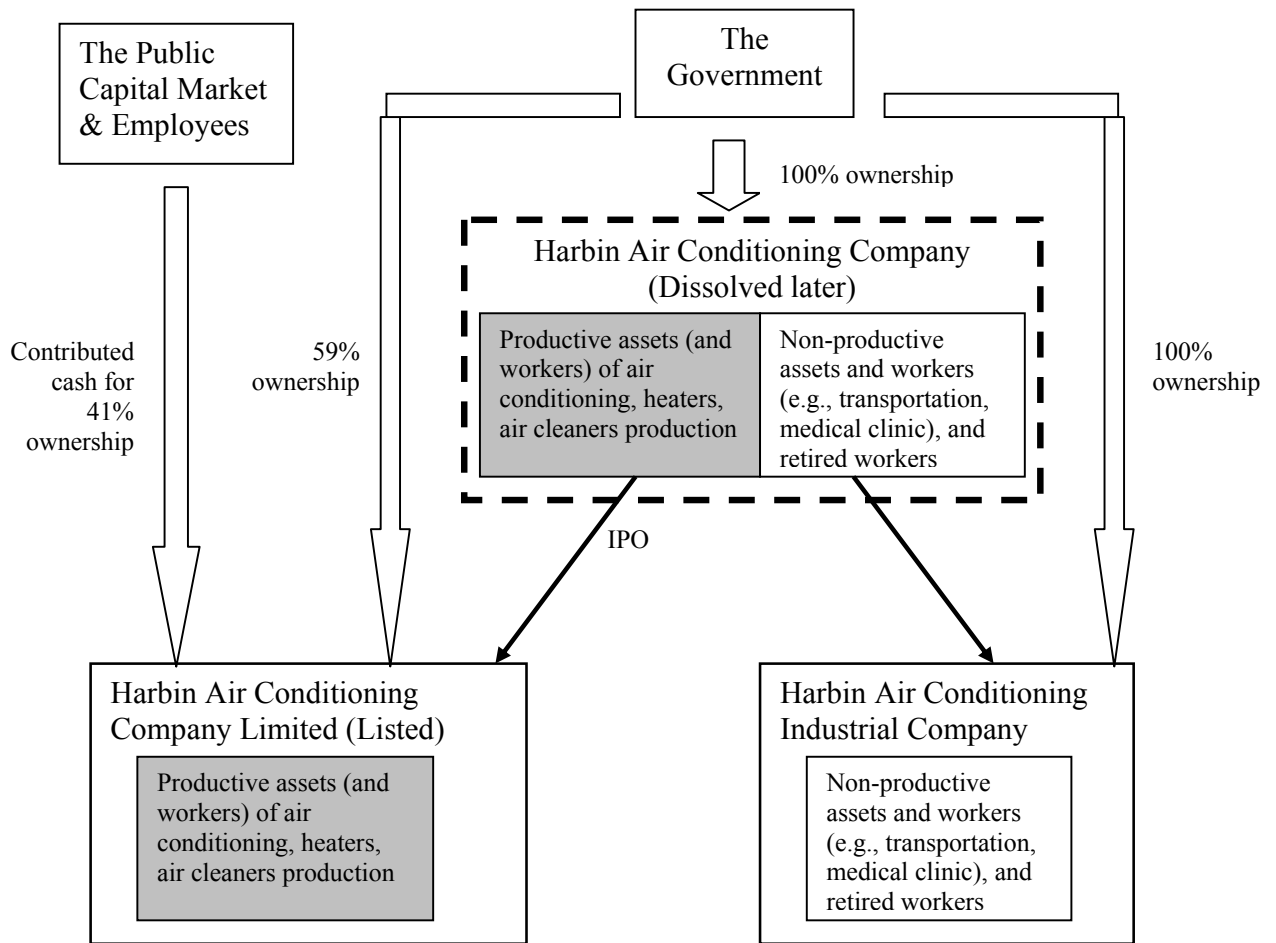
Note: The box in dashed line indicates the SOE to be restructured and grey boxes contain assets for publicly listing. Arrows in solid lines indicate restructuring of assets and block arrows indicate ownership relations.

Figure 2. Incomplete Restructuring of Sichuan Chemical Company
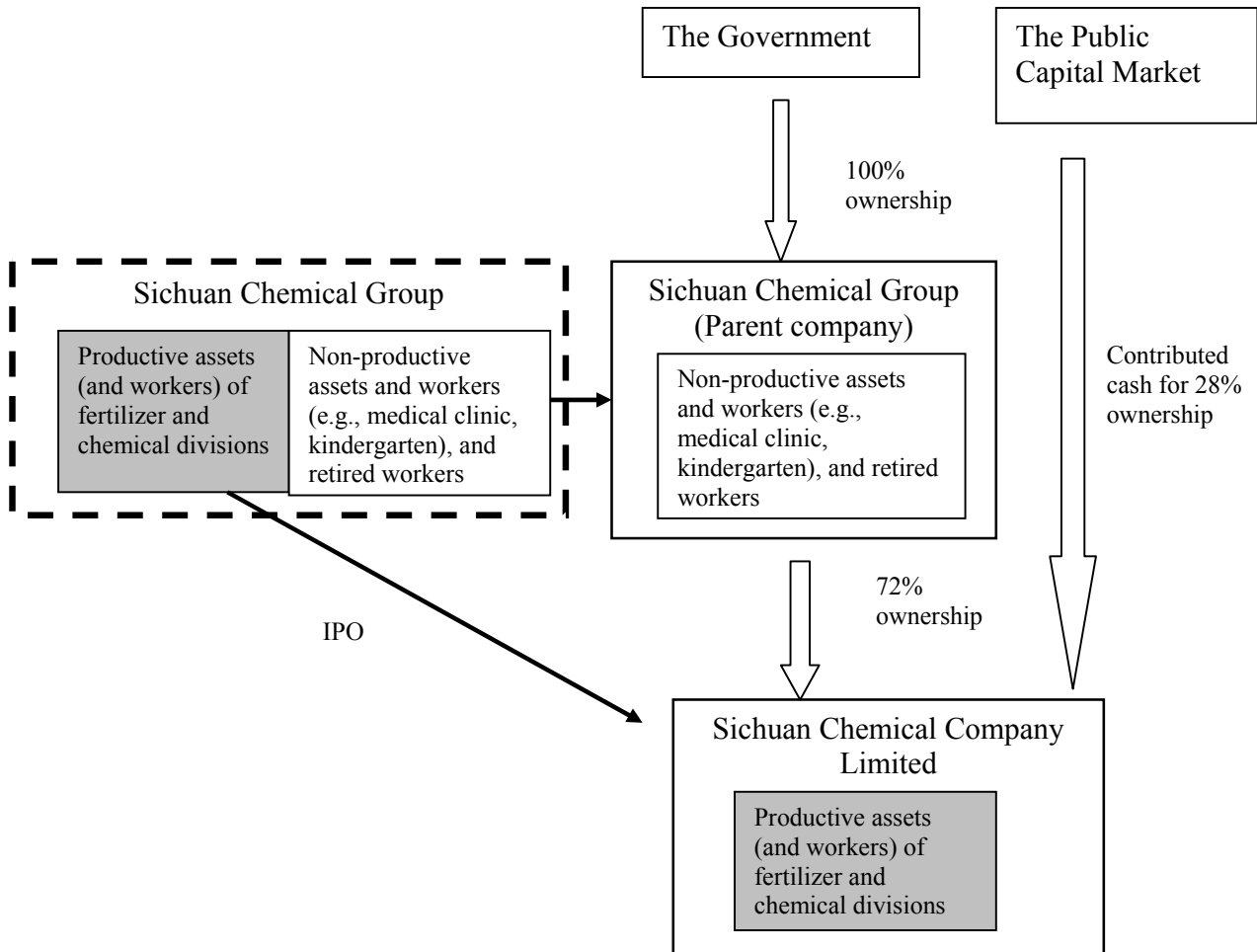
Note: The box in dashed line indicates the SOE to be restructured and grey boxes contain assets for publicly listing. Arrows in solid lines indicate restructuring of assets and block arrows indicate ownership relations.

Table 1 Summary Statistics of SIP Firms at the Time of IPO

This table presents a summary of the main characteristics of SIP firms in the year of IPOs. *Total market capitalization* is calculated as the total share outstanding (tradable and non-tradable) multipled by share prices. *Return on assets (ROA)* is defined as operating income before extraordinary items (EBIT) over total assets, where assets are adjusted by the increase in assets due to share offerings. *Return on sales (ROS)* is defined as operating income before extraordinary items (EBIT) over total sales. Significance levels are based on two-tailed tests of differences between the two sub-samples of firms with complete restructuring and with incomplete restructuring during privatization; significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Whole Sample		Incomplete Restructuring		Complete Restructuring	
	Mean	Median	Mean	Median	Mean	Median
Panel A. Financial Variables						
Total assets (millions of Yuan)	1,390	950	1510***	973**	1,040	796
Total sales (millions of Yuan)	811	401	931***	428**	454	354
Total market capitalization	3,750	2,860	3940**	2,960	3,190	2,710
Leverage ratio	0.353	0.347	0.354	0.345	0.349	0.368
Return on assets (ROA)	0.097	0.088	0.101*	0.092*	0.088	0.074
Return on sales (ROS)	0.167	0.139	0.165	0.134	0.173	0.149
% Firms submitting virtual accounting at IPO	64.9%	n.a.	79.8%***	n.a.	20.8%	n.a.
Panel B. Ownership and Governance Variables						
% Ownership of the largest shareholders	53.7%	56.5%	57.2%***	60.1%***	43.4%	43.7%
% Chairman holding positions in the controlling shareholders	76.1%	n.a.	86.4%***	n.a.	46.4%	n.a.
% CEO holding positions in the controlling shareholders	41.9%	n.a.	51.0%***	n.a.	15.9%	n.a.
Breakdown of share classes:						
% Government (non-tradable) shares	66.1%	67.3%	67.3%***	68.1%***	62.6%	63.6%
of which: % State share	51.2%		53.3%**		44.5%	
% Legal person share	48.8%		46.7%		55.5%	
% Tradable individual shares	29.7%	29.2%	29.4%	29.0%	30.9%	29.3%
% Foreign share	0.8%	0.0%	0.5%	0.0%	1.5%	0.0%
% Employee share	3.4%	0.0%	2.8%**	0%***	5.1%	2.5%
% Firms under supervision of the central government	20.7%		22.5%		15.3%	
% Firms under supervision of provincial governments	31.2%		33.8%		23.6%	
% Firms under supervision of city governments	48.1%		43.7%		61.1%	
Number of Observations	285		213		72	

Table 2. Determinants of Restructuring Choices

This table presents logit regressions of choices of restructuring methods. The dependent variable is a dummy variable indicating incomplete restructuring. Measures of government incentives and regional economic and demographic variables are measured at the provincial level and one year prior to SIP. Firm-level financial variables are the three-year average prior to SIP. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and * respectively.

	(1)	(2)	(3)	(4)
Government Incentives				
Fiscal revenue/GDP	-1.194	2.752	2.11	1.572
	(6.818)	(6.938)	(7.073)	(7.573)
% of SOE employment	7.086***	12.370***	12.785***	12.473***
	(2.623)	(3.437)	(3.371)	(3.474)
Fiscal revenue/GDP * High SOE employment		-20.074***	-17.863**	-18.828**
		(7.434)	(7.799)	(7.849)
Regional Economic and Demographic Variables				
Growth of GDP per capita	20.865**	13.078	9.163	9.152
	(9.102)	(8.452)	(7.703)	(7.756)
Population growth	-0.566	1.522	-0.25	-0.39
	(3.728)	(3.814)	(5.475)	(5.445)
Firm Characteristics				
Log (Sales)			0.887***	0.851***
			(0.239)	(0.236)
Earnings before interest and tax / Sales			0.036	0.035
			(0.027)	(0.028)
Leverage			-0.67	-0.78
			(1.691)	(1.693)
SOE supervised by a central ministry				0.059
				(0.478)
SOE supervised by the provincial government				0.323
				(0.407)
IPO Year Dummy	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes
Observations	255	255	255	255
Pseudo R-square	0.103	0.128	0.181	0.183

Table 3. Univariate Analysis of the Effect of China's Share Issue Privatization on Firm Performance

This table presents the profitability measures in the three years before and after share issue privatization. All numbers are calculated as the three-\year average. *ROA* and *ROS* are defined in Table 1. Significance levels are based on two-tailed tests of differences between the two sub-samples of firms with complete restructuring and with incomplete restructuring during privatization; significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Whole Sample		Incomplete Restructuring		Complete Restructuring		Difference	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
	(1)	(2)	(3)	(4)	(5)	(6)	(3)-(5)	(4)-(6)
Panel A: Performance Measures								
ROA as the performance measure:								
3-Year Average before SIP	13.5%	12.0%	14.7%	13.1%	10.0%	9.7%	4.7%	3.4%
3-Year Average after SIP	6.0%	5.5%	5.7%	5.3%	7.0%	6.7%	-1.3%	-1.4%
Change after SIP	-7.5%***	-6%***	-9%***	-7.3%***	-3.2%***	-3%***	-5.8%***	-4.3%***
ROS as the performance measure:								
3-Year Average before SIP	17.2%	14.5%	17.0%	14.2%	17.8%	14.5%	-0.8%	-0.3%
3-Year Average after SIP	9.4%	9.6%	8.0%	8.7%	13.7%	11.0%	-5.7%	-2.3%
Change after SIP	-7.8%***	-3.8%***	-9%***	-4.4%***	-4%***	-2%***	-5.0%***	-2.4%***
Panel B: Industry-Adjusted Performance Measures								
ROA as the performance measure:								
3-Year Average before SIP	7.6%	6.5%	8.7%	7.3%	4.4%	4.3%	4.3%	3.0%
3-Year Average after SIP	1.5%	1.3%	1.0%	1.2%	2.6%	2.6%	-1.6%	-1.4%
Change after SIP	-6.1%***	-4.7%***	-7.6%***	-6.2%***	-1.8%***	-1.9%***	-5.8%***	-4.3%***
ROS as the performance measure:								
3-Year Average before SIP	6.0%	4.0%	5.7%	3.7%	7.1%	4.3%	-1.4%	-0.6%
3-Year Average after SIP	1.1%	1.9%	-0.5%	0.9%	5.8%	4.3%	-6.3%	-3.4%
Change after SIP	-5.0%***	-1.5%***	-6%***	-2.0%***	-1.2%	0.0%	-4.8%**	-2.0%***
	285		213		72			

Table 4. The Effect of Restructuring Methods on Post-Privatization Performance

This table presents the regression analysis of the effect of pre-privatization restructuring on post privatization performance. *ROA* and *ROS* are defined in Table 1. *% Foreign Ownership* is the share of ownership of foreigners. *% Employee Ownership* is the share of ownership of employees. *Virtual Accounting* is a dummy variable indicating whether the firm provided virtual accounting at the time of IPO due to an operating history less than three years. Robust standard errors are presented in parentheses. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and * respectively.

	Dependent Variable					
	Return on Assets (ROA)			Return on Sales (ROS)		
	(1)	(2)	(3)	(4)	(5)	(6)
Incompete Restructuring	-0.053***	-0.045***	-0.041***	-0.062***	-0.061**	-0.057**
	(0.011)	(0.013)	(0.014)	(0.023)	(0.026)	(0.028)
Log(assets)	0.01	0.012	0.013	0.043***	0.043***	0.045***
	(0.008)	(0.008)	(0.008)	(0.016)	(0.016)	(0.017)
Leverage	0.062	0.056	0.053	-0.171**	-0.172**	-0.174**
	(0.040)	(0.041)	(0.041)	(0.081)	(0.082)	(0.082)
% Foreign Ownership	-0.074	-0.1	-0.111	-0.107	-0.109	-0.119
	(0.122)	(0.124)	(0.124)	(0.244)	(0.249)	(0.250)
% Employee Ownership	0.163*	0.078	0.068	0.038	0.032	0.023
	(0.088)	(0.114)	(0.114)	(0.177)	(0.229)	(0.230)
% Legal Person Ownership	-0.018	-0.022	-0.021	-0.05	-0.05	-0.049
	(0.018)	(0.018)	(0.018)	(0.036)	(0.036)	(0.036)
Virtual Accoutning		-0.019	-0.02		-0.001	-0.002
		(0.016)	(0.016)		(0.033)	(0.033)
CEO/President from the Largest Shareholder			-0.013			-0.012
			(0.012)			(0.024)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
IPO Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	285	285	285	285	285	285
R-square	0.270	0.280	0.280	0.210	0.210	0.210

Table 5. Intrumental-Variable Estimation of the Effect of Restructuring Methods on Post-Privatization Performance
This table presents the IV estimation of the effect of restructuring methods on post privatization performance. Measures of government incentives and regional economic and demographic variables as defined in Table 2 are used as instruments. *ROA* and *ROS* are defined in Table 1. *% Foreign Ownership* is the share of ownership of foreigners. *% Employee Ownership* is the share of ownership of employees. *Virtual Accounting* is a dummy variable indicating whether the firm provided virtual accounting at the time of IPO due to an operating history less than three years. In columns (1) and (3), estimates are from the treatment model as described in the paper; in columns (2) and (4), estimates are based on LIML IV regressions. Robust standard errors are presented in parentheses. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and * respectively.

	Dependent Variable			
	Return on Assets (ROA)		Return on Sales (ROS)	
	(1)	(2)	(3)	(4)
Incompete Restructuring	-0.157**	-0.703*	-0.25**	-0.400*
	(0.079)	(0.420)	(0.128)	(0.236)
Log(assets)	0.017	0.040	0.013	0.038
	(0.042)	(0.037)	(0.078)	(0.024)
Leverage	0.063	-0.046	0.289	-0.164
	(0.233)	(0.153)	(0.435)	(0.109)
% Foreign Ownership	-1.457*	-1.054	-2.005	-0.713
	(0.882)	(0.837)	(2.137)	(0.528)
% Employee Ownership	-0.382	-0.859	(0.163)	-0.414
	(0.454)	(0.692)	(0.867)	(0.418)
% Legal Person Ownership	-0.183	-0.104	-0.23	-0.0505
	(0.115)	(0.078)	(0.202)	(0.052)
Industry Dummies	Yes	Yes	Yes	Yes
IPO Year Dummies	Yes	Yes	Yes	Yes
Number of Observations	285	285	285	285
R-square	0.350	0.398	0.356	0.371

Table 6. Incomplete Restructuring and Related-party Transactions with the Largest Shareholders

This table presents the related-party transactions between listed firms and their largest shareholders in the three years after IPO. In Panel A, all numbers are calculated as the three year average except *% Occurance* which is calculated as the occurance of the transactions in the three years after SIP. Significance levels are based on two-tailed tests of differences between the two sub-samples of completely restructured and incompletely restructured firms. Incomplete Restructuring is a dummy variable indicating whether the firm went through an incomplete restructuring process. % Ownership is the share of ownership of the largest shareholder. COGS is cost of goods sold. In columns (1)-(4) of Panel B, coefficient estimates are obtained via Tobit estimation and p-values for log likelihood ratio tests are presented in the last row. In columns (5) of Panel B, coefficient estimates are obtained via OLS and R-square is presented in the last row. In both Panels, significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

Panel A: Univariate Analysis of Related Party Transactions

	Incomplete Restructuring				Complete Restructuring			
	Mean	Median	Max	Min	Mean	Median	Max	Min
Panel A.1 Transfer pricing of goods and services								
Sales of final products to related parties / Sales	9.3%***	1%***	98.8%	0.0%	3.1%	0.0%	60.9%	0.0%
% Occurance	58.7%***				35.6%			
Purchases of raw materials from related parties / COGS	11.9%***	0.6%***	98.8%	0.0%	3.3%	0.0%	54.6%	0.0%
% Occurance	54.6%***				31.5%			
Rental payment to related parties / Total costs	0.3%***	0.0%***	16.9%	0.0%	0.1%	0.0%	9.1%	0.0%
% Occurance	44.8%***				14.4%			
Panel A.2 Assets purchased from related parties								
Asset purchases from related parties / total firm assets	12.1%***	8.7%***	61.4%	0.0%	6.4%	0.6%	18.3%	0.2%
% Occurance	38.5%***				9.7%			
Panel A.3 Trade credits								
Total account receivables / assets	4.7%***	1%***	87.3%	0.0%	1.1%	0.0%	15.7%	0.0%
Total account payable / assets	1.4%***	0.1%	26.2%	0.0%	1.1%	0.0%	34.5%	0.0%
Net working capital / assets	3.3%***	0.4%***	86.4%	-22.5%	0.0%	0.0%	12.8%	-21.5%
% Occurance	71.8%***				38.9%			
Total number of firms	213				72			
Total number of transactions disclosed	2187				429			

Panel B. Regression Analysis of Related-party Transactions

	Measures of Related-Party Transactions				
	Payment for Goods and Services				
	%Product sales to largest shareholder	Rent payment/COGS	Raw material purchases / COGS	Asset purchases / Assets	Net trade credit / Assets
	(1)	(2)	(3)	(4)	(5)
Incompete Restructuring	0.088***	0.006**	0.070**	0.173***	0.036***
	(0.028)	(0.002)	(0.030)	(0.049)	(0.008)
Log(assets)	0.027	0.000	0.080***	-0.011	-0.001
	(0.018)	(0.001)	(0.019)	(0.024)	(0.014)
% Ownership	0.153**	0.021***	0.313***	0.141	-0.004
	(0.076)	(0.006)	(0.084)	(0.109)	(0.028)
Industry Dummies	Yes	Yes	Yes	Yes	Yes
IPO Year Dummies	Yes	Yes	Yes	Yes	Yes
Number of Observations	285	285	285	285	285
p-value for loglikelihood ratio test / R-square	0.000	0.010	0.000	0.001	0.110

Table 7. Evidence of the Expropriative Nature of Related-Party Transactions

This table links the extent of related-party transactions to firm performance. The dependent variable is return on sales. The results are presented separately in columns for different measures of related-party transactions. *Incomplete Restructuring* is a dummy variable indicating whether the firm went through an incomplete restructuring process. Related-Party Transactions are measured based the first column in the table. *% Foreing Ownership* is the share of ownership of foreigners. *% Employee Ownership* is the share of ownership of employees. *Virtual Accounting* is a dummy variable indicating whether the firm provided virtual accounting at the time of IPO due to an operating history less than three years. Robust standard errors are presented in parentheses. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *.

	Measures of Related Party Transactions			
	Catch-all Measure of	Individual Measure of Related Party Transactions		
Dependent variable: Return on sales	Related Party Transactions: Net trade credit / Assets	Rent payment / COGS	Purchases of raw materials / COGS	Asset purchases / Assets
	(1)	(2)	(3)	(4)
Measures of Related Party Transactions	-0.671***	-1.759*	-0.123*	-0.016
	(0.121)	(1.019)	(0.069)	(0.119)
Incompete Restructuring	-0.040*	-0.058**	-0.053**	-0.060**
	(0.025)	(0.026)	(0.027)	(0.027)
Log(assets)	0.034**	0.044***	0.052***	0.043***
	(0.016)	(0.016)	(0.017)	(0.017)
Leverage	-0.115	-0.174**	-0.178**	-0.173**
	(0.078)	(0.081)	(0.081)	(0.082)
% Foreign Ownership	-0.053	-0.116	-0.133	-0.102
	(0.235)	(0.248)	(0.248)	(0.255)
% Employee Ownership	0.108	0.018	0.004	0.031
	(0.217)	(0.228)	(0.228)	(0.230)
% Legal Person Ownership	-0.034	-0.047	-0.047	-0.050
	(0.034)	(0.036)	(0.036)	(0.036)
Virtual Accoutning	0.011	0.000	-0.004	-0.001
	(0.031)	(0.033)	(0.033)	(0.033)
Industry Dummies	Yes	Yes	Yes	Yes
IPO Year Dummies	Yes	Yes	Yes	Yes
Number of Observations	285	285	285	285
R-square	0.300	0.220	0.220	0.210

Table 8 Incomplete Restructuring and Dividend Policy

This table presents univariate (Panel A) and multivariate (Panel B) analysis of dividend payouts in the three years after IPO. In Panel A, *Earnings* are operating earnings before interest and taxes (EBIT). *Market Capitalization* is calculated as the number of shares outstanding (tradable and non-tradable) multipled by share prices. Significance levels are based on two-tailed tests of differences between the two sub-samples of completely restructured and incompletely restructured firms. In Panel B, estimates from a Tobit model are presented. Incomplete Restructuring is a dummy variable indicating whether the firm went through an incomplete restructuring process. % Ownership is the share of ownership of the largest shareholder. % Ownership*Incomplete Restructuring is an interaction term between % Ownership and Incomplete Restructuring. Robust standard errors are presented in parentheses. In both Panels, significance at the 1%, 5%, and 10% levels is indicated by ***, **, and * respectively.

Panel A: Univariate Analysis of Dividend Payouts

	Whole Sample		Incomplete Restructuring		Complete Restructuring		Difference	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
	(1)	(2)	(3)	(4)	(5)	(6)	(3)-(5)	(4)-(6)
Dividends / Earnings	41.5%	35.8%	40.8%	35.8%	43.4%	32.1%	-2.6%	3.8%
Dividends / Net Income	35.8%	31.1%	35.5%	32.2%	36.4%	30.1%	-0.9%	2.1%
Dividends / Sales	4.3%	2.8%	4.2%	2.6%	4.4%	3.4%	-0.2%	-0.8%
Dividends / Market Capitalization	0.9%	0.7%	0.9%	0.6%	0.9%	0.7%	-0.0%	0.0%
Number of observations	275		204		71			

Panel B. Regression Analysis of Dividend Policies

	Dividend-Earnings Ratio		Dividend-Net Income Ratio		Dividend-Sales Ratio		Dividend-Market Capitalization Ratio	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Incompete Restructuring	-0.130***		-0.084**		-0.011*		-0.003***	
	(0.046)		(0.038)		(0.007)		(0.001)	
% Ownership	0.455***	0.651***	0.334***	0.486***	0.050***	0.065***	0.012***	0.017***
	(0.132)	(0.162)	(0.110)	(0.135)	(0.019)	(0.023)	(0.003)	(0.004)
% Ownership * Incomplete Restructuring		-0.283***		-0.207***		-0.022*		-0.007***
		(0.096)		(0.079)		(0.014)		(0.002)
Log(assets)	0.062*	0.069**	0.071**	0.076***	0.007	0.008*	0.006***	0.006***
	(0.033)	(0.033)	(0.028)	(0.028)	(0.005)	(0.005)	(0.001)	(0.001)
Sales Growth	0.125	0.115	0.150**	0.141**	0.031***	0.030**	0.006***	0.006***
	(0.083)	(0.083)	(0.069)	(0.069)	(0.012)	(0.012)	(0.002)	(0.002)
Leverage	-0.567***	-0.580***	-0.484***	-0.494***	-0.164***	-0.165***	-0.019***	-0.020***
	(0.151)	(0.151)	(0.126)	(0.126)	(0.022)	(0.022)	(0.004)	(0.004)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPO Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	275	275	275	275	275	275	275	275
p-value for loglikelihood ratio test	0.000	0.000	0.006	0.004	0.000	0.000	0.000	0.000

Table 9. Incomplete Restructuring and Stock Market Performance

This table links expropriation to post-privatization stock market performance. To reduce the impact of noices in measuring stock returns for SIP firms as discussed in the paper, columns (1)-(4) are estimated using robust regressions; columns (5)-(8) are estimated using median regression where the standard error are computed using bootstrapping. Incomplete Restructuring is a dummy variable indicating whether the firm went through an incomplete restructuring process. *% Foreign Ownership* is the share of ownership of foreigners. *% Employee Ownership* is the share of ownership of employees. *Virtual Accounting* is a dummy variable indicating whether the firm provided virtual accounting at the time of IPO due to an operating history less than three years. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, *.

	Estimates from Robust Regressions				Estimates from Median Regressions			
	Market-adjusted Return		Alpha		Market-adjusted Return		Alpha	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Incompete Restructuring	-0.115**	-0.147**	-0.132**	-0.105*	-0.099*	-0.175**	-0.148**	-0.135*
	(0.053)	(0.067)	(0.053)	(0.067)	(0.060)	(0.072)	(0.057)	(0.069)
Log(assets)	-0.055	-0.061	-0.065*	-0.059	-0.079*	-0.082**	-0.025	-0.04
	(0.036)	(0.037)	(0.035)	(0.037)	(0.040)	(0.040)	(0.049)	(0.043)
Leverage	0.005	-0.002	-0.172	-0.194	0.055	0.02	-0.244	-0.203
	(0.182)	(0.184)	(0.181)	(0.184)	(0.182)	(0.195)	(0.205)	(0.209)
% Foreign Ownership	-0.037	-0.051	-0.414	-0.497	-0.096	0.049	-0.236	0.047
	(0.555)	(0.562)	(0.551)	(0.562)	(0.847)	(0.857)	(1.134)	(1.150)
% Employee Ownership	-0.680*	-0.77	-0.740*	-0.988**	-0.820*	-0.771	-0.931***	-0.724
	(0.403)	(0.502)	(0.400)	(0.502)	(0.475)	(0.628)	(0.322)	(0.491)
% Legal Person Ownership	-0.012	-0.026	-0.173**	-0.184**	0.053	0.048	-0.109	-0.102
	(0.076)	(0.078)	(0.076)	(0.078)	(0.093)	(0.095)	(0.097)	(0.090)
Virtual Accoutning		-0.024		-0.062		-0.002		0.044
		(0.072)		(0.072)		(0.084)		(0.073)
CEO/President from the Largest Shareholder		0.091		-0.011		0.115		0.015
		(0.061)		(0.061)		(0.080)		(0.065)
R-squared	0.23	0.23	0.07	0.07	0.03	0.03	0.03	0.03
Observations	285	285	285	285	285	285	285	285