

What Makes Privatization Work? The Case of China (preliminary)

Jie Gan
Hong Kong University of Science and Technology

Yan Guo
Peking University

Chenggang Xu
London School of Economics and Hong Kong University

July 2008

Abstract

Using a unique hand collected nationwide random sampling survey firm level data this paper conducts systematic studies on China's privatization. We find privatization in China leads to restructuring corporate governance and this has improved firm performance. Among many privatization approaches, management-buy-out (MBO) is the most performance-enhancing privatization approach. This is because MBO firms substantially restructuring more and deeper than other privatized firms. Selection bias problem is carefully controlled in our studies.

Introduction

Privatization of the state owned enterprises (SOEs) is the core issue of transforming centralized economies into market economies. Privatization in Central-Eastern economies (CEE) and in Russia has been studied intensively (Frydman et al., 1999; Barberis et al., 1996), which also studies the conditions that make privatization effective. Unlike the massive privatization programs in the CEE and Russia, privatizing state-owned enterprises (SOEs) in China was delayed for decades. Privatization started after almost twenty years of reform when several rounds of SOE reforms have been implemented (Groves, et al., 1995; Li, 1997) and private sector has already out-competed the state sector in the share of the economy.

Compared with Russia and CEE, China's privatization comes out with substantially different features. Opposite to Russia and CEE where privatization was pushed through as a high priority at the beginning of the transition in the early 1990s, the Chinese government tried to avoid privatization as much as they can. Reflecting due to political and ideological concerns on state-vs.-private ownerships, there have been hot debates in China on the justice of privatization. Facing those constraints, privatization in China started from regional governments' initiatives "secretly". The term "privatization" has been avoided. The privatization process started quietly and gradually, and become a large scale since the late 1990s. The process was so quiet that it was not much noticed by the outside world and there is not much research being done on the subject. Nevertheless, Chinese privatization is the largest scale privatization in the world. Between 1995 and 2005, close to 100,000 firms with 11.4 trillion RMB worth of assets were privatized, encompassing two-thirds of China's SOEs and state assets. As a result, the share of the state sector in the Chinese economy is now similar to that of some Western European economies.

Large scale loss-making and bad loans were major problems that convinced the government to start privatization. Meanwhile strong political oppositions on privatization made the development proceed in a disguised form. Although the political opposition distorts the privatization, makes it more costly, and slows it down, the "delayed" privatization may bring about some advantages. The market and legal institutional conditions for private ownership were much improved and more ready than before. Compared with those during mass privatization in other transitional economies China had much better developed markets when privatization started. Associated with the political

restrictions on privatization, in contrast to single-mode mass privatization, China adopted multiple approaches to privatizing its SOEs with different political justifications for each approach. These approaches include share issue privatization (SIP), joint ventures with foreign firms, management buy out (MBO), and sales to outsiders.

So far, despite a large literature documenting efficiency of private ownership in general, little is known about the effectiveness of China's privatization, no mention about what leads Chinese privatization work. This is an unfortunate omission. China's privatization is of great importance not only due to its sheer size, more importantly, its distinct differences from other privatization programs around the world can provide valuable insights into privatization designs in general.

The main hurdle to studying China's privatization has been a lack of systematic data. To this end, we have conducted a nationwide survey of 3065 firms. This stratified random sampling survey is based on the population of the firms with sales above 5 million RMB. Our sample well represents the national population in ownership, industry, region, and size. The sample includes privatized firms, non-privatized SOEs (also collectively-owned enterprises (COEs)), de novo private firms, and foreign firms, etc. This data enables us to address selection issues in performance evaluation. We obtained detailed information on changes in corporate governance, corporate finance, the relationship between government and firms, and law enforcement, etc. The following are the major questions to be addressed.

1. Has China's privatization brought about improved operating efficiency?
2. Which mode of privatization, joint venture, SIP, or MBO, is more effective?
3. What are the specific mechanisms, which makes privatization effective in

improving performance? Specifically,

- a. Has privatization brought about restructuring measures such as personnel changes and new business strategies?
- b. Has privatization strengthened incentives and decentralized decision making within the firms?
- c. Did privatization change corporate governance and allocation of control rights?

Our survey data shows that privatization in China has created concentrated private ownership and changed corporate governance to a great extent. Moreover, the state has retreated from being involved in the daily operations of firms; and budget constraints have been substantially hardened after privatization. All of these preliminary observations imply that privatization may have positive impacts on the performances of the firms.

Based on the survey data, we study the impacts of privatization on financial performance of the firms. We find that non-SIP privatization in China has significantly improved performance. The efficiency gain mainly comes from those firms that are sold to the private sector and especially MBOs, as opposed to public listing, leasing, and joint ventures. Our results indicate that the major channels, which improved performance, are various restructuring measures. We find that MBOs are more likely to change members of core management team and they are also more likely to introduce transparency measures, such as adopting international accounting standard and professional independent auditing. Moreover, they also establish a board of directors, probably reflect the fact that many of need to find financing at the time of MBOs. Interestingly, MBO firms do not have performance based pay. This may not be a surprise given a MBO firm has perfectly

aligned interests between the owner and the manager. Consistent with less performance improved than MBOs, other non-MBO firms that are sold to private sector only adopted performance based pay, among all the restructuring measures. Furthermore, regarding privatization selection issue, our evidence suggests that the MBO firms or those obtained most efficiency gains after privatization did not perform better than others prior to privatization.

There is a growing empirical literature that studies implementation and performance of China's privatization (Liu and Liu, 2005; IFC report, 2003). However, very few studies what makes privatization effective; and none of the existing studies are based on nationwide data to enable the possibility of getting the full picture of privatization in China. Li and Rozelle (2000) study 88 privatized township enterprises in Jiangsu and Zhejiang provinces. Song and Yao (2004) and Garnault, Song and Yao (2005) use firm-level data covering 683 firms in 11 cities from 1995-2001. The study by Liu and Lu (2005) is based on survey data collected from 451 firms in five cities and four sectors during the 1994-1999. Yusuf et al. (2005) reported on a survey of 736 firms from five cities and seven sectors from 1996 to 2001. All of these papers find that privatization has improved profitability, but the impact of privatization on other performance measures is ambiguous. The only work based on nationwide data is that by Su and Jefferson (2006). However, they did not have direct information about privatization. They inferred that privatization had occurred by changes in the legal registration of the firms.

The rest of this paper is organized as follows. Section 1 documents China's privatization. Section 2 describes the survey and reports descriptive statistics of the survey data. Section 3 conducts empirical analysis and reports discoveries. Finally, Section 4 concludes the paper.

I. Privatization in China

More than twenty years of reforms in China are marked by the government's piecemeal and gradual approach. The reform of the state-owned enterprises is no exception. Instead of outright privatization, China concentrated first on productivity improvement by initiating enterprise governance structures that stressed autonomy and better incentives and then later by adopting long-term managerial contracts with pre-specified financial targets (such as profits and taxes). Instead of introducing markets and liberalizing prices overnight, China first created markets at the margin, parallel to the planned economy, by introducing the "dual-track system" in the state industrial sector and by lowering bureaucratic barriers to entry to the once state-monopolized industries. Admittedly, the reforms brought about fundamental improvements in output and productivity. The marginal productivity of labor increased by 54 percent and the growth in total factor productivity (TFP) was 4.68-6 percent per year during 1980-89 (Li, 1997; Groves, Hong, McMillan, and Naughton, 1994).

This gradual reform approach, however, had its limits. When the reforms started in 1979, most SOEs were profitable at least on paper. Since the reforms began, despite significant output expansion and productivity gains, the profitability of the SOEs declined substantially and most of them were losing money in the early 1990s. As a result, many SOEs were deeply in debt and, by 1994, close to half of the SOEs had zero or negative equity. The decline in profitability was due to two reasons. First, without clear allocation of property rights, the SOEs' obligations were on the profit side but not on the loss side, which reduced the SOEs' incentives to improve their operating efficiencies. Second, SOEs operated under unfavorable conditions due to both their many social

responsibilities (e.g., social security, housing, and education) and external price controls imposed by the dual-track system. These policy burdens put the SOEs in a disadvantaged position in their competition with the rapidly growing private sector. Policy burdens also made it difficult for the state to impose hard budget constraints via bankruptcy of money-losing enterprises. Meanwhile, the dual-track system created enormous opportunities for corruption. In the end, the state acted as the residual claimant, absorbing the losses and the consequences of the diversion of state assets. This imposed a severe strain on the country's banking system. With SOEs relying on 70-80 percent of all bank credit, the banks were saddled with as much as US\$200 billion in uncollectible debt, which accounted for, by conservative estimates, a quarter of all outstanding bank loans (USA Today, Sept. 8, 1997).

These problems ushered in a new stage of more fundamental reforms. In 1993, the Third Plenum of the Fourteenth Chinese Communist Party Congress endorsed the creation of a modern enterprise system. In particular, it approved the development of diversified forms of ownership through privatization, which would allow SOEs to compete on equal terms in the marketplace. In 1995, the central government decided on the policy of "retain the large, release the small" (juada fangxiao). That is, the state was to keep the largest 300 SOEs in strategic industries and allow smaller firms to be leased or sold. The Chinese Communist Party's 15th Congress (1997) gave a green light to privatizing the majority of SOEs nationwide. Regional governments were granted de jure ownership of SOEs within their jurisdictions and were allowed to sell their assets. Large scale privatization began in the late 1990s. At this time, market and legal institutional conditions for privatization were partially in place: both product and labor

markets were developed; the newly established social security system (esp. unemployment benefits) was partially functioning; and new legal institutions and new laws were partially in place. These conditions are in sharp contrast to privatization programs in other transitional economies. Indeed, a common lesson from many former communist countries is that they pushed privatization too hard too soon and the lack of proper institutional conditions hindered potential efficiency gains from privatization. In addition to the institutional environment, regional governments played an important role in privatization. They often were the initiators of privatization. They also acted as a (imperfect) substitute for institutions (Pistor and Xu, 2005). Since there was no constitutional protection for private property rights until April 2004, ad hoc government protection (promises) was crucial to firm development. Close relationships with regional governments were important for firms to acquire resources like land, credit and energy, etc. during privatization.

Due to political constraints, privatization in China has been in a camouflaged form. The term “privatization” is officially disguised as “transforming the system” or “*gaizhi*” in Chinese. More precisely, *gaizhi* means changing ownership structures of SOEs. It includes partial privatization and full privatization, also ownership restructurings without involving privatization. Specifically, it covers *public offering*, *internal restructuring*, *bankruptcy and reorganization*, *joint ventures or merger*, *employee shareholding* (limited liability companies or cooperatives), *open sales* (to management, employees, outside private firms, or another SOE), and *leasing* (to management, employees, outside private firms, or other SOEs) (Garnaut et al., 2005).

Public offering involves partial privatization since by the Chinese law the state retains the majority of the shares after public offering. *Internal restructuring*, including incorporation, spinning off, introducing new investors, and debt–equity swaps, as well as bankruptcy/reorganization, often involves partial privatization but may also involves no privatization in the case that a structuring is among state-owned firms. The latter case is concentrated in super large scale SOEs owned by the central government and they enjoy monopolistic powers in markets, such as oil, electricity, telecommunication, etc. Similarly, *joint venture* or *merger* involve privatization in the cases where a SOE forms a joint venture with or merge with a private domestic or foreign firm. Indeed these cases occurred a lot.

One of the most important *gaizhi* measures deployed was *Employee shareholding*, which often involves full privatization or nearly full privatization. It was particularly popular at early stages of *gaizhi* due to the rule of the central government that each privatization plan must be approved by employees before implementation. In addition, closely associated with privatization, to pave roads for restructuring (layoff) it is critical to remove employees’ ‘tenured’ state-employee status. For this purpose, shares were often offered as part of the compensation schemes. At later stages of *gaizhi* when conditions were ready for managers to take over they bought majority shares from employees. This explains a large part of the MBOs in China. In recent years, as privatization proceeds, *open sale* becomes a popular approach. Under *open sale*, the firm is openly sold to insiders, mostly managers, or outsiders, such as other firms or outside managers, through auctions or negotiations between local government and potential buyers.

The last major category of privatization approaches in *gaizhi* is *Leasing*. Lessee can be outsiders, who are owners other firms, and insiders. In terms of use rights of the assets of a firm, leasing is very similar to those of MBO. Indeed some of the MBO owner-managers were lessees at early stages of privatization.

There are no official statistics on the number of firms or the value of the assets that have been sold off. In our surveyed sample, 62.8% of the SOEs and COEs were privatized by the end of 2004. Given our sample is constructed to match the population in ownership, size, location and industry (for further discussions, see next section) we infer that in China 92,493 initially state-owned firms had been privatized with total assets of 11.4 trillion RMB.

II. The Survey and the Sample

The main data used in this paper is from our survey in all the Chinese provinces across all the industries in early 2006. To our knowledge, this is the first nationwide random sampling survey designed to investigate privatization in China. The survey is based on a “population” of nationwide industrial census dataset by the National Bureau of Statistics (NBS). All the firms in that dataset had sales of 5 million RMB or more in 2004. We started with a random sample of 11000 firms stratified by firms’ location, industry, size, and ownership type. Representing the population, our sample covers privatized, non-privatized and *de novo* private firms.

The questionnaires were designed through an interactive process. We conducted several rounds of pilot surveys through on-site interviews and telephone interviews in nine cities with 720 samples. Our pilot survey locations include Beijing, Laizhou

(Shandong), Taizhou and Changxing (Zhejiang), Changchun and Jilin (Jilin Province), Shijiazhuang, Pingshan and Tangshan, (Hebei). Questions asked in the questionnaires and our way of conducting the survey is evolved through the pilot surveys. Moreover, some important questions raised in the questionnaires, such as the role of lands to firms, use of legal system, specific changes of governance structures during privatization, are based on observations from interview.

The major survey was conducted through telephone interviews. We hired a professional survey company that had a close relationship with the National Bureau of Statistics and had previously helped NBS to conduct its own surveys. We spent a week to train the staff of the survey company to understand each question. Throughout the survey, we worked closely with the staff and supervised the progress carefully.

Two sets of questionnaires are designed for privatized firms (Questionnaire A) and for other firms (Questionnaire B). The Questionnaires A and B are identical except questions related to privatization. This enables us to distinguish the effect of privatization. In the survey, every randomly selected firm was first asked about whether it was privatized and a corresponding questionnaire will be applied.

Our overall response rate was about 18.6%. In our respondent sample, we had a total of 3,065 firms including 900 privatized firms in Sample A and 2165 non-privatized firms in Sample B. One third of Sample B is non-privatized SOEs and COEs (non-privatized SOEs hereafter) and the rest are *de novo* non-state firms (*de novo* firms hereafter). Our Sample A and Sample B are designed to be more focused on privatization of SOEs whereas reflecting the nationwide population closely. Thus, although match the industry and regional distribution of the population fairly well, initially state-owned firms

are over represented in Sample A and Sample B. To represent the population more accurately in all major dimensions, including ownership and size, we obtained Sample C through randomly deducting 500 initially state-owned firms from Sample A and Sample B.

By excluding firms without valid financial information in the NBS financial database, Sample A included 808 privatized firms, Sample B included 1908 firms (non-privatized SOEs and private firms), and Sample C had 535 privatized and 1772 non-privatized firms. Table 1 compares the distribution of our survey samples with that of the full population.

As shown in Table 1 our samples represent the population very well in distributions of industries and regions. Concerning distributions of ownership and size, let us focus on Sample C since Sample A and Sample B are designed not to reflect the population. The percentage of the SOEs and COEs in Sample C is 24% compared with 20% in the population. For private, joint ventures and foreign owned companies, we have 37%, 17% and 22%, respectively, corresponding to 43%, 21% and 17% in the population. With respect to the size distribution, Sample C has 2% of large firms, the same as the population; and Sample C has 14% medium and 84% small firms while population has 22% medium and 76% small firms.

Table 2 reports the summary statistics of the main variables used in our empirical analysis.

III. Empirical Analysis

3.1 Does Privatization Matter?

A common concern about performance comparison in the privatization literature is that which firm is to be privatized is endogenized. Thus, unobserved firm characteristics may simultaneously determine privatization decision (which firm to privatize and what privatization method to use) and firm performance. It was argued that government may have incentives to privatize better firms to show their performance of privatization policy. Thus, a better post-privatization performance may be expected from this policy choice, instead of driven by privatization per se. Alternatively, it is also contended that expecting management-buy-out or similar privatization schemes, firm managers may manipulate the performance of their firms to lower the stock value of the firms at the eve of privatization. In this case a seemingly improving performance after privatization may be only a returning-to-normal performance. Again, privatization may not play any role in improving firm performance.

In Table 3, we take a first look at the performance of Chinese SOEs. We use three performance measures, including operating profits (earnings before interest, tax, and depreciation, EBITDA) over assets, sales, and the number of employees. The sample includes both privatized SOEs and non-privatized SOEs. In all estimation, we include year dummies to control for macroeconomic shocks and 46 industry dummies based on NSB industry classification, which is similar to 2-digit SIC codes, to control for industry influences such as technology and competition.

We start from investigating the hypothesis SB (Selection Bias) that privatized firms perform differently than non-privatized firms. The first three columns of Table 3 show that overall privatized firms are not significantly different from non-privatized

firms in any of the three performance measures. That is, the null hypothesis SB can not be accepted.

Next we examine the hypothesis PE (Privatization is effective) that performance is improved after privatization. The columns (4)-(6) of Table 3 indicate that after privatization firm performance was significantly improved based on profits over assets and profits over number of employees (at the 10% and the 5% levels, respectively); whereas at the same time the performance of privatized firms is statistically no difference from non-privatized SOEs. These results suggest that it was privatization, which improved firm performance. That is, the hypothesis PE cannot be rejected.

As we discussed earlier, China deployed a variety of methods to privatize its state owned enterprises, such as selling assets and share-issue privatization, etc. In the following we will explore which method works better. As a first cut, we examine the outcome of asset selling strategy. Here, asset selling is defined as selling an SOE's assets to any party except to other SOEs or to the government. Therefore, it includes selling the firm's assets to managers (MBO), to employees, to other private firms and to foreign investors etc. We will study further detailed privatization strategies, such as MBO, in subsequent subsections.

In the investigation, we introduce the following variables into the regression model: Post Privatization, Asset Selling, and the interaction term between Post Privatization and Asset Selling. If asset selling has no impact on performance, then Asset Selling, and the interaction term between Post Privatization and Asset Selling should all be insignificant. If many privatization approaches, including asset selling, have impact on performance then all the variables should be significant, The results presented in columns

(7)-(9) of Table 3 show that both Post Privatization and Asset Selling are insignificant; whereas the interaction between the two has significant impacts to performance.

Moreover, the impact magnitudes of the interaction are larger than those of the Post Privatization when Asset Selling was not controlled for. This suggests that the performance improvement after privatization is completely driven by ownership changes through asset selling.

In the following analysis, we will examine further which privatization method is successful in improving efficiency. Any time-invariant firm characteristics that might be related to privatization decisions will be completely controlled for. Moreover, we will include in our regressions time-varying firm control variables that could potentially affect return synchronicity, such as size, leverage, lagged profitability. Furthermore, and more importantly, we will examine the mechanism that drives better performance and effectiveness of privatization methods.

3.2 Management Buy Out

This subsection examines variation of performance for different privatization methods. We include firm fixed effects in our estimation and thus fully control for time-invariant firm characteristics that might affect choice of privatization method. Since different privatization methods do not apply to non-privatized firms, the estimation relies on the variation among those privatized firms. Thus in the following analysis we use only privatized firms.

Table 4 reports how different privatization method affects performance. Selling to the private sector and especially management buyouts are most successful in improving

all three measures of performance (columns (1)-(6)). However, in columns (1)-(3) of Table 4, the sum of the coefficients between *Post Privatization* dummy and *Selling to the Private Sector * Post Privatization* is positive but not significantly different from zero at conventional levels, suggesting that it is not clear that these privatization programs actually improve performance in a statistical sense. Thus in columns (7)-(9) of Table 4, we estimate post privatization performance of firms sold to the private sector but not bought by management and MBOs separately. The results suggest that MBOs significantly improves performance; whereas the impacts of other approaches of asset selling are ambiguous.

Consistent with Deng, Gan, and He (2008), concentrated ownership in an economy with weak property rights may hurt firm performance due to expropriation, the other methods of privatization are related to significantly worse performance, as reflected in the negative coefficient of *Post Privatization Dummy* itself.

3.3 Impacts of State Control

A common feature of privatization programs around world is that they are partial privatization, i.e., the government retains significant ownership in privatized firms. In our survey, government on average retains close to 20% of ownership in privatized firms.¹ The distribution of government ownership is uneven, however, with close to 80% of firms have zero government ownership.

We examine the impact of state control on the effectiveness of privatization. We measure state control in two ways. The first is whether the state shares are above 20%.

¹ The firms report two types of state ownership. One is direct government ownership; the other is (indirect) ownership through other SOEs. As discussed in detail in Deng, Gan, and He (2008), the latter is common in share issue privatization. In the survey sample, most state ownership is reported to be direct ownership.

We choose 20% both because it is the sample mean and also because with this ownership the government is likely to exert influence on the firms to achieve its political goals.

Our second measure of state control is based on our survey question on state intervention in corporate decision making. We ask explicitly the allocation of control rights among government, party committees, CEOs, corporate boards, and shareholder meetings in making key corporate decisions. The corporate decisions include the appointment of top managers, employment/layoffs and wages/compensation, corporate financial issues, production, and operations. These control rights are rated with scores ranging from 0 to 5 in the order of greater importance.² We calculate the average influence on the corporate decisions for each party. After the privatization, the government has almost completely retreated from daily operations of companies, with its control rights dropping from 1.9 to 0.4. The control rights of party committees are also substantially weakened, from 2.0 to 1.2. Since the government control of the firms can come both through direct government intervention and through its influence on firm-level party committees, we use the max of these two as the score for overall state influence. Despite that the overall state influence drops from 2.8 to 1.4 after privatization, state influence is still quite important in a significant proportion of firms, with 39% firms having a score above 2 (*Somewhat Important*) and 15% above 3 (*Moderately Important*). We define our second measure of state control as overall state influence above 2 and the results are robust to the alternative cutoff of 3. Table 5 shows that state control hinders performance of privatized firms by all three measures.

² 0 is zero influence, 1 is slightly important, 2 is somewhat important, 3 is moderately important, 4 is important, 5 is absolutely important.

3.4 Restructuring Measures after Privatization

We now examine the mechanism through which selling to the private sector and especially MBOs improve firm performance. There are two potential channels through which privatization may improve efficiency, as outlined in Barberis, Boycko, Shleifer, and Tsukanova (1996). The first is an incentive theory (Holmstrom, 1979), that is, private owners have greater incentives than government appointees to improve profits since they bear the financial consequences of their decisions. The other is the human capital theory; that is, privatization selects managers who are better at running the firms efficiently. While these two channels are not mutually exclusive, it is useful to understand to what extent each one leads to the success of China's privatization.

The fact that selling to the private sector is more successful than other methods of privatization (such as leasing, joint venture, etc.) suggests the importance of incentives of private owners. On the one hand, since among firms sold to the private sector only MBOs leads to significantly improve operating performance, it is not clear equity incentive alone leads to the success of privatization. Thus in the following analysis, we explicitly examine to what extent the successful privatization methods introduce new human capital by changing the core member of the management team. We also examine some whether restructuring measures are implemented. Our data provide at least two of such measures. One is performance-based pay, which could provide incentive if equity ownership is not fully in place. The other is adoption of international accounting standard. Since international accounting standards emphasize more on measuring performance than does the Chinese standard, adopting international standards is likely to reflect managerial objectives of improving performance, rather than political objectives under state

ownership. Finally, since board of directors can potentially help professionalization of the firm, we also examine the likelihood of establishing a board.

As reported in Table 6, non-MBO selling to the private sector is not associated to change of core member of management team, although it is more likely to use performance-based pay. It is not related to adoption of international accounting standard, nor is it likely to establish board of directors.

On the other hand, MBOs are more like to change members of core management team. They are also more likely to adopt international accounting standard and professional independent auditing, and to establish a board of directors, probably reflect the fact that many of need to find financing at the time of MBOs. Interestingly, consistent with perfectly aligned interests between principle and agents,³ MBO firms do not have performance-based pay.

Noticeably, both adopting international accounting standard and a formal board of directors at MBO firms are ways to professionalized the firm and prepare the firm for public listing. Thus, it is possible that managers of MBO firms are considering eventually listing the firms and thus use the public capital market as an exist strategy. This can be part of the reasons why, in contrast to the failure of insider privatization in Eastern Europe and Russia (Boycko et al. , xxxx) MBOs in China are successful. At the time of mass privatization, the countries have not established product markets, labor markets, or financial markets. Private ownership is an unfamiliar phenomenon. Under this situation, managers or private owners may not have sustained interest in running the firms, nor do they have a clear exit strategy. In contrast, when the delayed privatization in China

³ Among 471 MBOs, except for 2 firms, managers are the largest shareholder. In the remaining two firms, one has the government and the other has workers as the largest shareholder.

happens, market institutions have developed and, equally importantly, the private sector has become a big part of the economy. From the measures that they MBO firms have taken after privatization in improving efficiency and to professionalize the firms, it is clear that incentives are perfectly aligned and the managers could fully capitalize the efficiency gain in the eventual sale of the market.

3.5 Choice of Privatization Methods

This subsection provides additional evidence that firms sold to the private sector, MBOs or not, are not better performers prior to privatization. As shown in Table 7, choices of privatization method are not related to operating performance. This further confirms that the results are not due to selection of good firms for these two privatization methods.

Overall, we document that non-SIP privatization in China has significantly improved performance. The efficiency gain mainly comes from those firms that are sold to the private sector and especially MBOs, as opposed to public listing, leasing, and joint ventures. The results show that performance improves come from various restructuring measures and professionalization of the firms. Our results are obtained after controlling for firm fixed effect, which account for unobserved firm heterogeneity that may drive privatization choices. Further, there is no evidence that privatized firms or firms with most efficiency gains are better performers prior to privatization.

IV Conclusion

Although no explicit privatization program, although privatization has been postponed until several rounds of other reforms have been carried out, China's privatization shares a major feature with those in the CIS and Central-Eastern European countries. That is the popularity of privatizing to employees; and the result of management control of the privatized firms. Either transferring ownership to employees or to managers is treated as two competing privatization strategies and is debated hotly in the literature.⁴ Empirical evidence suggest that selling firms to insiders will slow down restructuring since they may be less capable to do so (Barberis, et al., 1996); privatization to foreign rather than domestic investors improve productivity more (Brown et al., 2006); privatization has no beneficial effect on performance in the case of firms controlled by insider owners (managers or employees), and that it has a very pronounced effect on firms with outsider owners (Frydman, et al., 1999).

Using a unique hand collected nationwide random sampling survey firm level data covering all privatization approaches we find MBO is so far the most effective privatization method in China. Privatized firms under MBO scheme systematically restructured their corporate governance more and deeper. As a result these firms performed better. To summarize, our major discoveries are the following:

- a) Privatization in China has improved firm performance;

⁴ It is argued that privatizing firms to managers would result in unmonitored managerial control and unfettered asset-stripping (Stiglitz, 1999; Black, Kraakman, and Tarassova, 2000; Kornai, 2000; and Roland, 2001). On the other hand, it is also contended that management buy out would be beneficial (Frydman and Rapaczynski, 1994; and Boycko, Shleifer, and Vishny, 1994).

- b) Privatized firms did not perform differently from those which were not privatized, i.e. there is no statistically identifiable selection bias in determining which firm was to be privatized;
- c) Only asset selling strategy had impacts in improving performance, whereas other privatization strategies failed to make a difference;
- d) So far management-buy-out (MBO) is the most performance-enhancing privatization approach in China;
- e) MBO firms substantially restructuring more and deeper than other privatized firms;
- f) MBO firms did not perform differently from those which were privatized through other approaches, i.e. there is no statistically identifiable selection bias in determining which firm was privatized through MBO.

References

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.

Black, Bernard, Reiner Kraakman, and Anna Tarassova, "Russian Privatization and Corporate Governance: What Went Wrong?" *Stanford Law Review*, Vol. 52(6): 1731–1808, July 2000.

Boycko, Maxim, Andrei Shleifer, and Robert W. Vishny, "Voucher Privatization." *Journal of Financial Economics*, Vol. 35(2): 249–266, April 1994.

Brown, J. David, John Earle and Almos Telegdy, 2006. "The Productivity Effects of Privatization: Longitudinal Estimates from Hungary, Romania, Russia, and Ukraine," *Journal of Political Economy*, 2006.

Deng, Jianping, Jie Gan, and Jia He, 2008. "The Dark Side of Concentrated Ownership in Privatization: Evidence from China," *Hong Kong University of Science and Technology Working Paper*.

Frydman, Roman, and Andrzej Rapaczynski, *Privatization in Eastern Europe: Is the State Withering Away?* Budapest: Central European University Press, 1994.

Frydman, Cheryl Gray, Marek Hessel and Andrzej Rapaczynski, 1999, “When Does Privatization Work? The Impact of Private Ownership on Corporate Performance in the Transition Economies,” *Quarterly Journal of Economics*, November 1999.

Garnaut, Ross, Ligang Song, Stoyan Tenev, and Yang Yao, 2005. *China’s Ownership Transformation: Process, Outcomes, Prospects*, Washington, D.C.: The World Bank. 2005.

Groves, Theodore, Yongmiao Hong, John McMillan, and Barry Naughton. 1994. “Autonomy and incentives in Chinese state enterprises,” *Quarterly Journal of Economics*, Vol.109, 1994, pp.183–209.

Johnson, Simon, John McMillan, and Christopher Woodruff. 2002. “Property Rights and Finance,” *The American Economic Review*, Vol. 92, No. 5, December 2002, pp.1335-1356.

Kornai, Janos, “Ten Years after ‘The Road to a Free Economy’: The Author’s Self-Evaluation.” *Economic Systems*, Vol. 24(4): 353–359, December 2000.

Li, Hongbin, and Scott Rozelle. 2000. “Savings or Stripping Rural Industry: An Analysis of Privatization and Efficiency in China,” *Agricultural Economics*, Vol. 23 (3), 2000, pp. 241–252.

Li, Wei. 1997. “The impact of economic reform on the performance of Chinese state enterprises, 1980-1989.” *Journal of Political Economy*, Vol. 105, 1997, pp.1080-1106.

Liu, Guy S. and Xiaoxuan Liu. 2005. “Report on The 2004 Enterprise Survey Project of Ownership Transformation and Enterprise Reorganization in China,” *The World Bank and The Institute of Enterprise Research The Development Center of Research Of State Council of China*, 2005.

Liu, Xiaoxuan, and Ting Lu. 2005. “Formality of SOEs Transformation Reform and Firms’ Performance,” (“qiye gaizhi moshi he gaizhi jixiao”), *Journal of Economic Research (jingji yanjiu)*, Vol. 40, 2005, pp. 94-103.

Meggison, William L., and Jeffrey M. Netter, “From State to Market: A Survey of Empirical Studies on Privatization.” *Journal of Economic Literature*, Vol. 39(2): 321–389, June 2001.

Pistor, Katharina, and Chenggang Xu. 2005. “Governing Stock Markets in Transition Economies Lessons from China,” *American Review of Law and Economics*, Vol. 7, No. 1, 2005, pp. 184-210.

Roland, Gerard, "Corporate Governance and Transition Economies: Lessons from Transition." In Boris Pleskovic and Nicholas Stern, eds., *Annual World Bank Conference on Development Economics 2000*, pp. 331–352. Washington, D.C.: World Bank, 2001.

Song, Ligang and Yang Yao. 2004. "Impacts of Privatization on Firm Performance in China," *CCER Working Paper Series*, No. E2004005, 2004.

Su, Jian, and Gary H. Jefferson. 2006. "Privatization and Restructuring in China: Evidence from Shareholding Ownership, 1995–2001.", *Journal of Comparative Economics*, vol. 34, 2006, pp. 146-166.

Sun, Qian, and Wilson Tong, 2003. "China Share Issue Privatization: The Extent of Its Success." *Journal of Financial Economics*, Vol. 70, pp. 183–222.

Yusuf, Shahid, Nabeshima Kaoru, and Dwight H Perkins. 2005. "Under New Ownership: Privatizing China's State-Owned Enterprises." *Stanford Univ. Press and the World Bank*, 2005.

Table 1. Sample Distribution of Ownership, Size, Location, and Industry

This table compares the distribution of our survey sample with that of the population by ownership, size, location, and industry. The NSB database does not have information on ownership; thus we infer ownership based on registration type. North China includes Beijing, Tianjin, Hebei; North-East: Heilongjiang, Jilin, Liaoning; North-West: Xinjiang, Qinghai, Ningxia, Gansu, Shaanxi, Innermongolia; North-Central: Shanxi, Henan, Shandong; South-West: Xizang, Yunan, Guizhou, Sichuan, Chongqing; East: Shanghai Jiangsu, Zhejiang; South: Guangxi, Guangdong, Fujian, Hainan; South-Central: Hubei, Hunan, Jiangxi, Anhui.

	Sample A & B		Sample C		Population	
	Number	%	Number	%	Number	%
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Ownership Distribution</i>						
SOEs & COEs	706	26%	556	24%	54,789	20%
Private	956	35%	851	37%	119,538	43%
Joint Venture and Foreign	453	17%	396	17%	57,284	21%
Others	601	22%	504	22%	47,481	17%
Total	2,716	100%	2307	100%	279,092	100%
<i>Panel B. Size Distribution</i>						
Large	159	6%	42	2%	5,580	2%
Medium	792	29%	328	14%	60,182	22%
Small	1,765	65%	1937	84%	213,330	76%
Total	2,716	100%	2307	100%	279,092	100%
<i>Panel C. Regional Distribution</i>						
North	271	10%	219	10%	22,717	8%
North-East	209	8%	148	6%	18,254	7%
North-West	121	5%	98	4%	10,013	4%
North-Central	435	16%	371	16%	40,724	15%
South-West	162	6%	125	5%	15,242	6%
East	952	35%	821	36%	98,034	35%
South	360	13%	344	15%	51,076	18%
South-Central	206	8%	181	8%	23,032	8%
Total	2,716	100%	2307	100%	279,092	100%
<i>Panel D. Industry Distribution</i>						
Mining	239	9%	206	9%	31,064	11%
Food, Beverage & Tobacco	225	8%	205	9%	23,862	9%
Textiles	330	12%	309	13%	42,852	15%
Timber and Paper Products	245	9%	217	9%	24,268	9%
Petroleum & Chemical	450	17%	385	17%	42,799	15%
Metals	598	22%	505	22%	58,530	21%
Machine and Electronics	463	17%	383	17%	46,900	17%
Electricity, Gas and Water	166	6%	97	4%	8,817	3%
Total	2,716	100%	2307	100%	279,092	100%

Table 2. Summary Statistics

This table presents the summary statistics used in the empirical analysis. Profits are defined as earnings before interest, tax, and depreciation.

Panel A: Summary Statistics

	Whole Sample	State-Owned Enterprises (SOEs)		Non-SOEs
		Privatized	Non-Privatized	
Log (Sales)	10.042	10.017	10.309	9.918
Leverage	0.003	0.043	0.051	0.000
Profit/Assets	0.067	0.038	0.048	0.079
Profit/Sales	0.075	0.063	0.077	0.074
Profit/#Employee	9.400	4.726	7.142	10.989
Number of Firms	3061	899	477	1685

Panel B: Financial Variables Before and After Privatization

	Privatized SOEs		Selling to Private Sector		MBOs	
	Before	After	Before	After	Before	After
Log (Sales)	10.131	10.454	9.868	10.231	9.859	10.264
Leverage	0.072	0.035	0.001	0.024	0.000	0.023
Profit/Assets	0.038	0.061	0.078	0.069	0.082	0.074
Profit/Sales	0.069	0.085	0.074	0.088	0.073	0.090
Profit/#Employee	5.043	10.293	9.946	10.164	10.839	10.453
Number of Firms	899		607		406	

Table 3. A First Look at the Effect of Privatization

This table presents the OLS estimates of the effect of privatization on firm performance, based on the sample containing both privatized and non-privatized SOEs. Performance measures are calculated as operating profits (earnings before interest, tax, and depreciation) over assets, sales, and number of employees, respectively. Robust standard errors are in parentheses. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Performance Measures			Performance Measures			Performance Measures		
	Profits / Assets	Profits / Sales	Profits / #Employee	Profits / Assets	Profits / Sales	Profits / #Employee	Profits / Assets	Profits / Sales	Profits / #Employee
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lag of Performance	0.658*** (0.017)	0.806*** (0.054)	0.425*** (0.011)	0.656*** (0.017)	0.806*** (0.054)	0.424*** (0.011)	0.650*** (0.017)	0.806*** (0.054)	0.424*** (0.011)
Log (sales)	0.010*** (0.002)	-0.011 (0.079)	5.005*** (0.334)	0.010*** (0.002)	-0.011 (0.079)	4.976*** (0.334)	0.010*** (0.002)	-0.009 (0.080)	5.076*** (0.335)
Leverage	-0.031** -0.015	1.338** -0.681	0.512 -2.776	-0.031** -0.015	1.338** -0.681	0.604 -2.775	-0.028* -0.015	1.351** -0.683	1.011 -2.778
Privatized Firms	0.000 (0.006)	-0.096 (0.282)	-0.652 (1.165)	-0.007 (0.007)	-0.098 (0.325)	-2.027 (1.344)	-0.011 (0.010)	-0.177 (0.421)	-3.072* (1.739)
Post Privatization				0.014* (0.008)	0.004 (0.362)	3.061** (1.493)	-0.015 (0.013)	0.05 (0.595)	0.174 (2.441)
Selling to Private Sector * Post							0.045*** (0.016)	-0.063 (0.699)	4.469* (2.872)
Selling to Private Sector							0.008 (0.010)	0.129 (0.438)	1.72 (1.809)
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4016	4010	3961	4016	4010	3961	4016	4010	3961
R-squared	0.3	0.07	0.47	0.3	0.07	0.47	0.31	0.07	0.47

Table 4. The Influence of Privatization Method

This table presents the influence of different privatization methods on firm performance, based on the sample of privatized firms. Performance measures are calculated as operating profits (earnings before interest, tax, and depreciation) over assets, sales, and number of employees, respectively. Robust standard errors are in parentheses. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Performance Measures			Performance Measures			Performance Measures		
	Profits / Assets	Profits / Sales	Profits / #Employee	Profits / Assets	Profits / Sales	Profits / #Employee	Profits / Assets	Profits / Sales	Profits / #Employee
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lag of Perfmance	0.049** (0.024)	-0.013 (0.029)	0.074** (0.030)	0.047* (0.024)	-0.012 (0.029) 0.298*	0.073** (0.030)	0.048* (0.024)	-0.012 (0.029)	0.073** (0.030)
Log (sales)	0.090*** (0.008)	0.299*** (0.017)	11.458*** (1.114)	0.089*** (0.008)	** (0.017)	11.440*** (1.113)	0.090*** (0.008)	0.299*** (0.017)	11.449*** (1.113)
Leverage	0.001 (0.035)	-0.019 (0.076)	4.85 (4.942)	0.002 (0.035)	-0.016 (0.076)	4.891 (4.941)	0.001 (0.035)	-0.02 (0.076)	4.827 (4.940)
Post Privatization Dummy	-0.070*** (0.025)	-0.116** (0.053)	-8.148** (3.430)	-0.040** (0.019)	-0.057 (0.041)	-5.653** (2.684)	-0.070*** (0.025)	-0.118** (0.053)	-8.203** (3.428)
Selling to Private Sector * Post	0.111*** (0.027)	0.134** (0.058)	10.358*** (3.751)				0.069* (0.035)	0.134* (0.076)	5.77 (4.955)
MBO * Post				0.096*** (0.023)	0.075a (0.050)	9.413*** (3.271)	0.126*** (0.028)	0.134** (0.060)	11.890*** (3.902)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2481	2477	2448	2481	2477	2448	2481	2477	2448
R-squared	0.67	0.56	0.68	0.67	0.56	0.68	0.67	0.57	0.68

Table 5. The Influence of State Control

This table presents the OLS estimates of the effect of privatization on firm performance, based on the sample of privatized firms. Performance measures are calculated as operating profits (earnings before interest, tax, and depreciation) over assets, sales, and number of employees, respectively. Robust standard errors are in parentheses. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Performance Measures			Performance Measures		
	Profits / Assets	Profits / Sales	Profits / #Employee	Profits / Assets	Profits / Sales	Profits / #Employee
	(1)	(2)	(3)	(4)	(5)	(6)
Lag of Perfmance	0.050** (0.024)	-0.013 (0.029)	0.075** (0.030)	0.049** (0.025)	-0.011 (0.029)	0.076** (0.030)
Log (sales)	0.090*** (0.008)	0.299*** (0.017)	11.475*** (1.114)	0.089*** (0.008)	0.297*** (0.017)	11.367*** (1.115)
Leverage	0.003 (0.035)	-0.014 (0.076)	5.005 (4.944)	0 (0.035)	-0.019 (0.076)	4.795 (4.949)
Post Privatization Dummy	0.032** (0.015)	0.008 (0.031)	1.154 (2.053)	0.039** (0.017)	0.023 (0.036)	1.91 (2.374)
State Share Above Mean * Post	-0.150*** (0.035)	-0.194** (0.076)	-12.534** (4.939)			
State Control * Post				-0.064*** (0.024)	-0.096* (0.051)	-5.712* (3.330)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2481	2477	2448	2481	2477	2448
R-squared	0.67	0.56	0.68	0.66	0.56	0.68

Table 6. Restructuring and Professionalization of Privatized Firms

This table presents logit model of restructuring measures and professionalization after privatization. Robust standard errors are in parentheses. The financial variables are the three-year average after privatization. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Change of Core Management Team	Performance Pay	Internatnl Accounting & Independent Auditing	Establishing Board of Directors
	(1)	(2)	(3)	(4)
Lag of Perfmance	-0.073** (0.036)	-0.264*** (0.080)	0.192*** (0.065)	0.244*** (0.046)
Log (sales)	-0.223 (0.343)	0.45 (0.773)	-3.570*** (0.992)	-0.069 (0.408)
Leverage	-0.631** (0.302)	0.422** (0.187)	-0.522 (0.575)	-0.501*** (0.182)
Selling to Private Sector	-0.166 (0.171)	1.793*** (0.423)	-0.094 (0.369)	-0.055 (0.203)
MBOs	0.388** (0.151)	-1.253*** (0.272)	0.991*** (0.318)	0.782*** (0.189)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	606	606	606	606

Table 7. Choice of Privatization Method

This table presents a logit model of the choice of privatization method. Variables are defined in the same way as in Table 3. Robust standard errors are in parentheses. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Selling to Private Sector	MBO
Log(Sales)	-0.304***	-0.146**
	-0.078	-0.065
Leverage	-0.896	-0.054
	-0.753	-0.671
Profit/Assets	1.580*	0.222
	-0.956	-0.711
Industry Fixed Effects	Yes	Yes
Year of Privatization Dummies	Yes	Yes
Observations	446	450