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**Privatizing Rural China:  
Insider Privatization, Innovative Contracts, and the Performance of Township Enterprises<sup>1</sup>**

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## Privatizing Rural China:

### Insider Privatization, Innovative Contracts, and the Performance of Township Enterprises

Rural industry has made an extraordinary contribution to China's rapid economic growth over the past 20 years, though the sector's recent performance was beginning to wane in the mid-1990s. The contribution of rural firms to national gross industrial output rose from about 10 percent in 1979 to nearly 40 percent in 1996, increasing at an average annual rate of nearly 20 percent during the 1980s.<sup>2</sup> The sector created more than 5 million new jobs annually between 1978 and 1996. Despite this record, rural industry's performance since the mid-1990s has raised concerns over the sector's future economic health and long-term sustainability.<sup>3</sup> Township and Village Enterprise (TVE) expansion appeared to have reached a turning point in 1997 when the total number of firms and overall employment declined for the first time.<sup>4</sup> Some believed that the downturn might signal the beginning of the end for China's experiment with rural industrialization.<sup>5</sup>

Instead of withering away, however, a new type of firm has emerged in rural China with remarkable rapidity. Since the mid-1990s, China's rural industrial sector has quietly experienced a surge of privatizations. Using national statistics, Oi estimates that local leaders had "privatized" more than half a million firms by the mid- to late-1990s.<sup>6</sup> Kung demonstrates that even in southern Jiangsu, the birthplace of the collective rural firm, more than half of the villages had

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<sup>2</sup> Jean Oi, *Rural China Takes Off: Institutional Foundations of Economic Reform* (Berkeley: University of California Press, 1999); Andrew Walder, "Local governments as industrial firms: an organizational analysis of China's transitional economy," *American Journal of Sociology*, Vol. 101 (1995), pp. 263-301.

<sup>3</sup> Albert Nyberg and Scott Rozelle, *Accelerating Development in Rural China* (Washington DC: World Bank, 1999).

<sup>4</sup> *Zhongguo xiangzhen qiye nianjian* [China Yearbook of Township and Village Enterprises] (Beijing: Nongye chubanshe, 1990-2000).

<sup>5</sup> Wen Lu, "Problems during the process of TVE reforms," *Journal of Agricultural Economy Research*, No.1 (1998), pp. 18-21.

<sup>6</sup> Jean Oi, "The decades of rural reform in China: an overview and assessment," *China Quarterly*, Vol. 159 (1999), pp. 616-628.

started to privatize their firms by the mid-1990s.<sup>7</sup> In her case studies of communities in Songjiang County of Shanghai, Whiting finds that 15 percent of the local TVEs had been privatized by 1996.<sup>8</sup> According to our recent survey of 670 firms in 15 counties in China's Lower Yangtse Delta region, more than half of the enterprises that were formerly owned by township governments, i.e., Township Enterprises (TEs), had been partially or completely privatized by the summer of 2000.<sup>9</sup> And, according to our interviews, the privatization process is not over. Leaders repeatedly told us that they have plans to continue privatization.<sup>10</sup> If these rates are representative of the rest of China, then literally more than a million firms in rural China were privatized by 2000. According to the literature, this number of firms is many-fold greater than the total number of privatizations that have occurred during 1990s in the entire rest of the world combined.

Besides the magnitude of privatization, two other features are unique to the ownership transformation of China's rural industries. First, China is almost the only country in the world in which the most commonly practiced form of privatization is *insider privatization*. In the rest of the world privatization largely has been part of a process by which ownership and control of the firm is transferred to a group of outsiders (that is, individuals that were not working in or managing the firm prior to privatization).<sup>11</sup> In China, however, township leaders almost always

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<sup>7</sup> James Kung, "The evolution of property rights in village enterprises," in Jean Oi and Andrew Walder (eds.), *Property Rights and Economic Reform in China* (Stanford: Stanford University Press, 1999), pp. 95-122.

<sup>8</sup> Susan Whiting, *Power and Wealth in Rural China: The Political Economy of Institutional Change* (Cambridge: Cambridge University Press, 2001).

<sup>9</sup> Also see Hongbin Li, "Privatizing rural China: the role of learning, screening and contract innovation on the evolution of Township and Village Enterprises," Ph.D. Dissertation, Stanford University, 2001.

<sup>10</sup> Leaders in this paper refer to the party secretaries of townships, since they make final decisions on privatization.

<sup>11</sup> Maxim Boycko, Andrei Shleifer and Robert Vishny, *Privatizing Russia* (Cambridge, MA: The MIT Press, 1995); Wendy Carlin and Philippe Aghion, "Restructuring outcome and the evolution of ownership patterns in Central and Eastern Europe," *Economics of Transition*, Vol. 4 (1996), pp. 371-388; William Megginson and Jeffrey Netter, "From state to market: a survey of empirical studies on privatization," *Journal of Economic Literature*, Vol. 39 (2001), pp. 321-389.

sell their firms to insiders, specifically, the managers of the firm.<sup>12</sup> Second, relative to the rest of the world, in which it is not surprising to find that most privatized firms have failed, many privatized firms in China—though not all—appear to be experiencing a rise in performance.<sup>13</sup>

The overall goal of our paper is to closely examine some of the trends and to investigate the peculiarities unique to rural China's privatization movement. In short, we seek to address some of the unanswered questions and unresolved debates about a.) the extent of rural China's industrial privatization, b.) the process of that privatization, and c.) its impact on firm efficiency. To meet these goals, we use our own data set to describe the scope of rural China's privatization movement. Since TVEs have been so important to China's growth in the past, documenting such a dramatic change will be important for both academia and policy makers interested in understanding the role these firms may play in China's future growth. Second, based on both our data and extensive interviews in rural China between 1996 and 2000, we describe in detail the process by which China's rural communities have privatized their firms, often in ways that are unique among privatization movements across the world. Finally, we demonstrate how this process in part is contributing to a privatization movement that is improving the efficiency of many, though not all, firms in rural China. In the final section of the paper, we also speculate on the potential effects that privatization may have on the political economy of the rural community, beyond the performance of the firms themselves.

Our paper has a number of unique contributions that strengthen the literature on rural industrialization. First, it is based on a comprehensive set of primary data that we collected in 1998 and 2000. Our study helps put previous work into perspective and allows us to demonstrate that privatization differs significantly over time and across space, even within our

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<sup>12</sup> James Kung, "The evolution of property rights in village enterprises;" Jean Oi, "The decades of rural reform in China: an overview and assessment;" Susan Whiting, "Power and Wealth in Rural China: The Political Economy of Institutional Change."

<sup>13</sup> The record of insider privatization on improving performance in Russia, Central and Eastern European countries has been poor. See for example Nicholas Barberis, Maxim Boycko, Andrei Shleifer and Natalia

two sample provinces, Jiangsu and Zhejiang.<sup>14</sup> Second, our paper also is the first to study how privatization affects the performance of firms. Extant literature on TVE privatization has focused mostly on identifying determinants. For example, Whiting identifies ideological constraints that explain why some communities privatize their firms and others do not.<sup>15</sup> Kung and Whiting find that market competition matters in determining the pace of privatization.<sup>16</sup> Other works are more specific. Kung and Lin, for example, find that when the competitive pressures reduce the profitability of firms, which in turn reduce fiscal revenues, leaders tend to privatize.<sup>17</sup> Li and his coauthors demonstrate the linkages between reforms in the rural banking sector and enterprise privatization.<sup>18</sup> While understanding the determinants of privatization is absolutely critical to our understanding of this new development, almost no previous work has examined the effect of privatization on firm performance.

Our paper, however, has several limitations. First, the data was collected in only two coastal provinces. As a result, we need to be careful in drawing inferences about the TVE sector in other parts of China. Second, most of the data were collected in the summer of 1998, although they were supplemented with additional information from a 2000 resurvey of most of the

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Tsukanova, "How does privatization work? Evidence from the Russian shops," *Journal of Political Economy*, Vol. 104 (1996), pp. 754-790.

<sup>14</sup> For previous work, see James Kung, "The evolution of property rights in village enterprises," James Kung and Yi-min Lin, "The evolving ownership structure in China's economic transition: an analysis of the rural non-farm sector," mimeo, Hong Kong University of Science & Technology, 2000; Hongbin Li, "Reversing privatization as a screening mechanism," *Economics Letters*, Vol. 78 (2003), pp. 267-271; Hongbin Li and Scott Rozelle, "Saving or stripping rural industry: an analysis of privatization and efficiency in China," *Agricultural Economics*, Vol. 1460 (2000), pp. 1-12; Jean Oi, "The decades of rural reform in China: an overview and assessment;" Susan Whiting, "The regional evolution of ownership forms: shareholding cooperatives and rural industry in Shanghai and Wenzhou," in Jean Oi and Andrew Walder (eds.), *Property Rights and Economic Reform in China* (Stanford: Stanford University Press, 1999), pp. 171-202; Susan Whiting, "Power and Wealth in Rural China: The Political Economy of Institutional Change."

<sup>15</sup> Susan Whiting, "The regional evolution of ownership forms: shareholding cooperatives and rural industry in Shanghai and Wenzhou."

<sup>16</sup> James Kung, "The evolution of property rights in village enterprises," Susan Whiting, *Power and Wealth in Rural China: The Political Economy of Institutional Change*.

<sup>17</sup> James Kung and Yi-min Lin, "The evolving ownership structure in China's economic transition: an analysis of the rural non-farm sector."

<sup>18</sup> Hongbin Li, "Privatizing rural China: the role of learning, screening and contract innovation on the evolution of Township and Village Enterprises;" Loren Brandt, Hongbin Li and Joanne Roberts, "Why do governments privatize?" *mimeo*, the Chinese University of Hong Kong, 2001.

localities and firms in our sample. Given the pace of change in rural China, it is possible that more changes may have occurred since 2000. Third, we are studying primarily the process of privatization and how this process has affected the efficiency of firms. Although in the final section of the paper we discuss a number of implications for the local political economy, in addition to the direct efficiency effects – for example, such issues as the effect of privatization on the community’s fiscal condition or local governance – these issues are peripheral in this paper.

### *Data*

The data are from surveys we conducted in 1998 and 2000. In interviews during both years, we asked retrospective questions to elicit information from managers and leader about all ownership changes between 1993 and 1999. The main survey concentrates on TEs and private firms, focuses on the period from 1993 to 1999, and covers rural industrial activity in Jiangsu and Zhejiang Provinces, two of China’s most developed coastal provinces, one north of Shanghai and the other south. In the first phase of the data collection, we carried out a census, or complete enumeration, of 643 TEs that operated in each of the sample townships in 1993. In the rest of the paper, we call this the *township census*. On average, each township had 11 TEs in 1993, ranging from one township that owned and operated 20 firms to one township that only had 2.<sup>19</sup>

Although we collected a large amount of data on the 643 firms during the 1998 survey, we discovered that we were missing certain key pieces of information. To supplement our original data, and to update the information on ownership changes between 1998 and 2000, we conducted a second round survey on a subset of 43 townships and 390 firms in 2000. To make our presentation succinct, we use the smaller census of 390 firms in the rest of the paper, but our main arguments also hold for the larger but shorter township census data. For all of the firms included in the township census, we include information on any changes that occurred in

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<sup>19</sup> To help put these firms in perspective, average employment of the TEs in 1994 was 180, the average output was 13.9 million *yuan*, and average total fixed assets were 25.3 million *yuan*.

ownership between 1993 and 1999. These changes include outright privatization of firms, as well as conversions to joint-stock or shareholding companies, changes that give partial ownership rights to individuals. We also collected basic social-economic information on each township. In addition, we conducted in-depth interviews with at least two township leaders in each sample township. During these interviews, we asked them about their involvement in the firms and elicited information about themselves; for example, their level of education, age, and job history. Table A1 provides statistics that summarize some of the key variables included in the 1998 and 2000 township censuses.

One of the most important sets of variables in the township census include information about each firm's ownership status. Changes in ownership took several forms. Depending on the definition, firms are classified as township or privatized. When using a *share-shifting* definition, a township enterprise includes only those firms with 100 percent controlling interests held by the township, and a privatized enterprise includes those with any shares shifted to private individuals. According to the *controlling-interest shifting* categorization, a privatized enterprise is a firm in which the township has shifted a majority of the shares to private individuals. The most restrictive definition, *complete privatization*, implies that a privatized enterprise is any firm with all shares shifted to private individuals.

To get more detailed firm-level data, we also conducted a second part of our survey in 1998. In the rest of the paper this is called the *firm-level data set*. To choose the firms, we randomly sampled three firms in each township from a pool of all the township-owned and private firms. All of the township enterprises in the firm-level data set are also included in the township census, although firms had to meet minimum size criteria.<sup>20</sup> In total, the firm-level data set included information on 168 firms. Thirty-three out of the 168 firms were established originally as private firms (henceforth *private firms*), and the government initially owned 135 in

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<sup>20</sup> The sampled enterprise should have at least 20 employees and a fixed capital base that exceeded 200,000 *yuan*.

1993. Private firms were included in the sample to allow us to judge how well *privatized* firms do relative to *private* ones.<sup>21</sup>

The survey instrument used to collect the firm-level data included two main parts. Enumerators conducted a sit-down survey with the firm manager or owner. The manager survey elicited detailed information on firm ownership during the survey period, the privatization process (including how firms were evaluated and the price paid by the buyer), and on the buyout negotiations during which the price was established. We also asked the manager about the other rights that they had with regard to the firm, questions on corporate governance, information about the firm's production and marketing activities, and the manager's human capital attributes. The firm's accounting department provided data on the firm's financial and cost accounting records.

One of the most important goals of the survey was to collect reliable measures of the firm's performance. In order to do this, we recorded detailed information from the firm's income statements and balance sheets. In this paper, we focus on four effort and performance measures: a.) the manager's weekly workload; b.) the firm's accumulated overdue accounts receivable rate (in other words, a measure of the amount of bad debt that it holds in the form of overdue accounts receivable); c.) the firm's profit rate; and d.) the amount of value added to the production process per worker. The manager's weekly workload is the number of hours the manager works per week. The profit rate, defined as a profit-to-sales ratio, measures how well firms are reducing costs and generating profits. We use labor productivity to directly measure firm's performance in terms of value added per worker.<sup>22</sup>

To create a good measure of accounts receivable management, we start with the *overdue accounts receivable rate*, which is defined as a ratio of accumulated overdue accounts receivable

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<sup>21</sup> Although we assume here that private firms face better incentives and should be expected to outperform government-owned firms (which helps us establish a standard for judging the performance of privatized firms), we actually test for this in the empirical section of our paper.

<sup>22</sup> Specifically, we use value added per worker as a proxy for a firm's labor productivity. Value added is defined as the difference between product value and materials costs. We then define value added per



to total assets. We then turn this variable into a “positive” measure of performance, called *accounts receivable management*, a new variable that is defined as  $(1 - \text{overdue accounts receivable rate})$ . We argue that the way a firm manages its account receivables provides a measure of managerial behavior since unpaid accounts tend to accumulate in firms whose managers have poor incentives to collect overdue accounts. For example, in firms in which managers or salespersons sell products for personal rebates (or kickbacks) instead of increasing the firm’s income, overdue accounts could easily accumulate. Even worse, managers sometimes divert cash by providing trade credit to other firms that are owned by their relatives or friends. At the very least, managers with poor incentives are not willing to rigorously collect overdue account receivables.

#### *Privatization of Township Enterprises*

Starting from the mid-1990’s, rural China has experienced rapid privatization. All townships in our sample have experienced privatization, and some townships had sold all their firms to private owners by 1999. Although widespread, privatization is a decentralized process with most decisions made at the township level. According to our 1998 interview of township leaders, only 34 percent reported that there were county level policies regarding privatization. The rest developed their own privatization policies or had no policies at all. Out of the 88 privatized firms from our firm-level data, for which we have detailed information, township leaders made the privatization decisions in 81 of them. County leaders made the privatization decisions in only seven cases.

The proportion of firms undergoing privatization is striking (Table 1). Using the share-shifting definition, the broadest measure of privatization, 86 percent of sampled firms experienced full or partial privatization (column 1). Although the proportion of privatized firms

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worker as the value added to worker ratio, and deflate all years to the 1994 price level. In estimating the production functions later, we use the log of value added per worker as the dependent variable.

grows progressively less as the privatization definition becomes more restrictive, even if we consider only those firms that shifted from government-owned to 100 percent private ownership, it is still the case that 57 percent of the firms were privatized.

The pace of privatization over the seven years covered by our data set in the 1990s also accelerated. There is a marked increase over time in the rate of privatization activity between 1993 and 1998. In 1993, leaders only privatized eight percent of the firms. During 1997 and 1998, in contrast, local governments privatized 30 percent of the existing township enterprises. At some point, of course, as government-owned TEs disappear, the rate of privatization will fall.

Our data illustrate that townships differ in their rates of privatization (Table 2). When examining our sample townships from 1999, we find striking differences in the rate at which leaders have privatized their TEs. On one hand, there are seven townships just beginning privatization in 1999 (row 1). On the other hand, eight other townships had completely or nearly finished privatization by 1999 (row 5). The different rates of privatization cross-township suggest that the privatization decisions are, indeed, mostly made at the township level.

Our field interviews supported the finding that different localities proceeded with privatization at different rates. For example, in Ning County in the Ningbo area of Zhejiang Province, three out of the county's four townships had finished privatization by the time we conducted the first round survey in 1998. The county, however, did not sell off its first TE, an apparel factory, until 1993. Leaders viewed the initial privatization as an experiment. After two years, the apparel factory turned from a money-losing operation into a profitable and growing firm. The leadership in the county and its townships decided to proceed with privatization in late 1995. By the time we visited the county in the 1998, leaders had sold off almost all of the TEs.

In contrast, Jiangyin County in the Wuxi area of Southern Jiangsu Province privatized later. Leaders had only begun privatizing TEs in one of the four townships that we visited in 1998. When we talked to the Yuecheng township party secretary, he explained why he opposed privatization.

Yes, our TVEs are facing some difficulties now, but they have contributed a lot to our local economy in the past. We cannot let them go only because they are facing temporary difficulties. I believe that when the market becomes better, they will continue to contribute to our local economy. Also, I believe that most privatizations in other places are nothing more than government leaders and managers collectively stealing government assets.<sup>23</sup>

However, even when resistance is strong, such as in Jiangyin County, when the privatization begins, it proceeds rapidly. In the summer of 2000, when we revisited Yuecheng Township, leaders had sold off nearly 40 percent of the locality's TEs. The new township secretary had visited Shandong and Zhejiang provinces, and became convinced of the need for privatization. Although we do not have any formal information since 2000, the new secretary told us that they plan to sell all township firms by 2002.

In summary, our interviews and data suggest that rural China has experienced a massive privatization movement in the mid-1990s. The shift in ownership shares and firm ownership forms show that privatization is fundamental and wide spread. Although all townships are involved in this privatization movement, they differ in the degree and speed of privatization. The decentralized decision-making and different degree of privatization confirm the observations of Whiting who described in her work the spontaneity of privatization reforms and flexibility of institutional change in rural China.<sup>24</sup>

*Insider Privatization, Buyout price and Incentives*

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<sup>23</sup> Township leader interview 73, 23 July 1998.

<sup>24</sup> Susan Whiting, *Power and Wealth in Rural China: The Political Economy of Institutional Change*.

Privatization in China has not only proceeded at a different pace than in other countries, but the process itself is unique. First, insiders buy most firms, and second, complex methods are used to value them. Understanding the way firms are privatized also is important to measuring the effect of privatization on firm performance.

One of the most important features of privatization, rural China-style, is that most firms are sold to insiders, especially to managers.<sup>25</sup> According to our firm-level data, in 92 percent privatization cases, leaders sold the firms to insiders. In a typical case, the original manager and other employees bought out the firm completely or partially. Managers of the firms increased their personal shares the most, owning by far the largest part of the privately held shares (nearly 70 percent). In only seven cases did outsiders buy the firm. We revisited these cases in 2000. We discovered that in all seven cases, the new “outside” owner had been the only person bidding to purchase the firms. Moreover, when we examined their connections to the townships in which they purchased the new firms, we found that in almost all cases, so-called outsiders were closely connected to the locality. Although new buyers were not managers or employees, they all knew a great deal about the firm. In one case, a wealthy relative of a former manager bought the firm and retained the manager to run day-to-day operations. In another case, the owner of a firm with a history of collaboration with the TE bought it in what the new owner described to us as a “friendly” buyout. Hence, even in the cases of sales to “outsiders,” the distances between the officials that oversaw the former TEs, the original managers, and the new owners were rarely arms-length.

*Evaluation and the Buyout Price.* The striking difference between China and the rest of the world in terms of who bought the firms raise questions about why insider privatization is so prevalent. Kung argues that managers develop firm-specific human capital that is difficult to

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<sup>25</sup> Kung also finds that the villages in his sample most frequently sold village enterprises to insider managers. See James Kung, “The evolution of property rights in village enterprises.”

transfer to other individuals. As a result, the firm is more valuable to the existing owner, making him the most likely candidate to purchase it.<sup>26</sup> We agree. We believe, however, that an understanding of the exact nature of the privatization process (something that Kung does not describe in detail) illustrates why the original manager is most likely to become the new owner, and why the process is so difficult to execute.

While there is not a legally mandated, nation-wide privatization process, many localities followed a similar procedure. Top township leaders usually initiate the privatization process (which according to our interview is almost always the party secretary). The local leader decides both which firms to privatize and when to privatize them. In step one of the privatization process, the government leaders organize an evaluation team. Out of the 88 privatized firms in our firm-level sample, 85 went through the evaluation process. Township governments themselves carried out most evaluations (54 percent). County governments conducted others (13 percent), or an independent Certified Public Accountant (CPA) firm (33 percent).

One of the key tasks of the evaluation team is to assess the value of the firm's assets and debts. Asset evaluations typically are based on the firm's *book value*; that is, estimated market value of tangible assets (which disregards intangible assets such as brand name or human capital). Ninety-three percent of the firm's debt load, which is usually held by banks (48 percent) or other firms (24 percent), ends up being borne by the privatized firm. After enumerating both the firm's asset and debt values, the evaluation team then set the firm's equity value – the difference between the value of its asset and debt. We define this as the firm's *base value*.

Interviews with those involved in the buyout process clearly show the importance and pervasiveness of the evaluation process. One new owner of a privatized firm recalls:

I was really nervous about the level of the value that the company [an independent CPA] would attach to my firm. These guys did not know my business. They kept telling me

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<sup>26</sup> Ibid.

that they were only interested in counting up the value of the building, equipment and land. They also spent a lot of time going over the debt load of the firm. Several people spent more than two weeks in my office. In the end, they produced a long list of the firm's assets and debts. I was pleased to see that in most cases their valuations were fair. We argued a bit over some of the items, but in the end, I had to sign a statement that I believed the list was fair. In fact, I do.<sup>27</sup>

Step two involves negotiations over the firm's buyout price. During the negotiations, leaders and managers start at the firm's base value and attempt to come to a consensus about its future profitability. As might be expected, there is a lot of uncertainty over the firm's future earnings capabilities. Successful negotiations make adjustments to the firm's base value and put forward a purchase price. In this paper, we call this the *buyout price*.

While the privatization procedure is fairly similar within and across regions, buyout prices vary sharply (Table 3). Dividing privatized firms into groups and ranking them by the ratio of the buyout price to its base value (a ratio that we call the *BB ratio*) allows for the analysis of the privatization process. At one extreme, twenty firms have a BB ratio close to zero (9 of them are zero—row 1). In this case, although there is a positive base value (that is, the book value of the firm's assets exceeds the value of its debt), leaders required managers to pay only a small or zero buyout price. At the other extreme, seven firms have a negative BB ratio (row 6). In these cases, the new owners paid the government a positive buyout price for their firms, even though the evaluation showed that the firm had a negative base value (that is, the value of the firm's debts exceeds its assets). There are also 20 firms that have a BB ratio exceeding one (which means that the managers paid a buyout price that was greater than the firms assessed base value). The rest of the firms had a BB ratio between zero and one.

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<sup>27</sup> Manager interview 3301, July 14.

Beyond being useful for our analysis of firm performance (next section), the differences in the size of the buyout price relative to the assessed base value of the TE should be of interest to those concerned about the real objective of privatization. Top leaders and outsiders have worried about the danger that insider privatization would invariably lead to corruption and managers who can grossly underpay for their firms.<sup>28</sup> Although it is true that some buyers paid a low buyout price for firms, our data illustrate that at least in the case of some firms, the buyer paid a buyout price that exceeded the best *ex ante* estimates of a firm's base value.

By examining the *premium (or discount) rates* paid by managers for their firms, we can even more clearly illustrate that in some cases the manager-cum-buyer bought the firm for a steep discount, while in other cases, they paid a price well in excess of the firm's book value (Table 3, column 6). To measure the premium, we set it equal to the buyout price minus the book value (if it is positive, the firm pays a premium; if negative, the firm receives a discount). To account for the size of the premium relative to the size of the firm, we create a normalized measure, the *premium rate*, by dividing the premium by the book value of firm's assets. In the case of 32 out of the 88 privatized firms, buyers purchased firms that were *heavily discounted* (with a premium rate smaller than -0.2); 26 firms were *moderately discounted* (with a premium rate between -0.2 and 0); and 30 firms paid a premium (henceforth *premium-paying* firms).

*Insider Privatization with a Tail.* One of the main problems of insider privatization in transition economies is that the leaders are at an informational disadvantage vis-a-vis the manager during the negotiation process.<sup>29</sup> The leaders typically do not know how efficient a firm will become after ownership is transferred to its manager. Because of this, it is difficult to come up with a buyout price that reflects the true long-run earnings potential of the firm.

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<sup>28</sup> Wen Lu, "Problems during the process of TVE reforms;" People's Bank of China, Jiaxing Branch, "How TVE reforms affect their bank loans?" *PBC Research Documents*, 1998; Feixiang Sun, "Asset managing in the process of TVE reform."

<sup>29</sup> Hongbin Li, "Reversing privatization as a screening mechanism."

In China's rural areas, leaders face similar information difficulties.<sup>30</sup> The township governments usually own multiple firms. The sample median is 12 firms per township. With so many firms, it is unlikely that leaders know each one well. Each firm may sell its products to markets in many localities. The typical firm in our sample sells its products to buyers in four different counties. Leaders may not always know where these markets are located or who the firm's customers are. Township leaders are also frequently rotated from one township posting to the next. In our sample, leaders switched posts on average every 3 years.

In contrast, the manager knows his own firm well. He is typically only running one firm and has been managing it, or at least working in it, for many years. The typical new owner of a privatized firm prior had been the manager for five years and an employee for 12. With such experience, it is almost certain that the manager better understands the firm's future profit-earning potential and has a more informed basis for knowing how much effort will be needed to overcome any serious inefficiencies. In summary, in the case of China's rural enterprises, the main point here is that managers apparently have a more accurate assessment of the true value of firms than leaders when privatization deals are negotiated.

The question that naturally arises when considering the wide variations in the premium rate and the asymmetric nature of information (between leaders and managers) is how are leaders able to value their firms. As we noted above, evaluations can only provide an assessment of the firm's book value. Evaluations are not able, and in fact do not try, to determine the true market value of the firms. The market value of the firm, always difficult to gauge in a market economy like the United States (where it is typically done by the stock market), is even more so in a transition economy such as China since there are neither good capital markets nor standard accounting practices. The buyout price, as discussed above, is actually determined during intense negotiations between government leaders and firm managers.

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<sup>30</sup> See Louis Putterman, "On the past and future of China's Township and Village-Owned Enterprises," *World Development*, Vol. 25 (1997), pp. 1639-1655; James Kung and Yi-min Lin, "The evolving



Comments by the party secretary of Liuqiao Township in Tongzhou City, Jiangsu Province, illustrate the nature of the problem.

It is very difficult to know the exact value of a firm. What we do is as follows. Take the electric fan firm we sold in 1995, for example. Three brothers run the firm, two of whom have college degrees. They are very capable of doing business. The book value was 1.6 million *yuan*. But, we knew it was worth more than that because they seemed to be doing very well. All we could do is to get an accountant to evaluate the book value. This was not disputed by us or them. Beyond the book value, we have to make some guesses and there is no objective way of evaluation. Of course the brothers knew the value better than we did. But, they would never tell us. So, we talked to one of the brothers and asked for 2.2 million *yuan*. We thought that he would bargain with us. A little surprisingly, he accepted the price. His only condition was that if they paid the higher price, the firm would be completely theirs. We agreed. For other firms that we sold, the bargaining could last much longer. For example, our construction material factory had a book value of half a million. We asked the guy who had been running it for exactly half a million. The manager refused to pay anything at the beginning. After talking to him on and off for a year, he paid us 100,000 *yuan* for the firm.<sup>31</sup>

The differences in access to information about the future earnings potential of the firm between the manager/buyer and leader/seller that characterize the buyout of the firm create tension when establishing the firm's purchase price. Since the manager can withhold the true information about the firm's prospective value when negotiating with the leader, he might always be expected to claim that the firm is of a lower value than it really is. Without any mechanisms to

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ownership structure in China's economic transition: an analysis of the rural non-farm sector.”

<sup>31</sup> Township leader interview 12, 7 July 1998.

reveal the manager's private information, the government can only accept the low price or choose not to privatize at all. If leaders and managers are unable to overcome the problem caused by the uneven access to information, it could lead to no privatization – a lose-lose situation since both parties could benefit from the efficiency gains of privatization.

In such an environment, are leaders always able to overcome the difficulties? Do the variation of premium rates reflect any systematic success for leaders and managers? Examination of the data reveals a strong correlation between the firm's performance after privatization and the premium rate that the manager paid to the leader for the firm (Table 4). Managers who pay higher premiums tend to run firms that perform better after privatization than those who pay lower premiums (or who purchased the firm for a discount). When examining the three different types of firms – heavily discounted, moderately discounted, and the premium-paying firms – our data show that the postprivatization performance of the premium-paying firms improved more than that of the moderately discounted firms. The performance of heavily discounted firms actually deteriorated after privatization. The accounts receivable management and value added per worker of heavily discounted firms performed worse postprivatization than preprivatization.

Firms having different premium rates also differed in the amount of effort their new owners (managers) exerted after privatization (Table 4, column 4). The data demonstrate that managers who paid a premium for their firms exerted more effort in improving their newly acquired firm. Specifically, managers of the premium-paying firms worked 13 hours longer per week than managers of the heavily discounted firms (82.5 hours versus 69.8).

Interviews with new owners also revealed the relationship between effort and the size of the premium. Some managers admitted that they exerted almost no additional effort to improve their newly acquired firm's efficiency. These, almost invariably, were the ones who bought heavily discounted firms. Others, especially those who paid a high premium for the firm, worked much harder after privatization.

In fact, the differences between the two types of owners can be clearly drawn from our interviews with the new owners of two firms in Liuqiao Township (discussed above). When we asked the new owner of the construction materials firm (a heavily-discounted firm) whether there was any change to him and to the firm after privatization, he said, “There is not much difference. It is largely still the same firm, with the same people. I really only have a bit more independence now.”<sup>32</sup>

The new owners – three brothers – of the electric fan enterprise (a premium-paying firm) told a different story. One of them told us, “Yes, since we bought the firm, we bought new equipment and hired more people. And we do much better now. We also have greatly increased the amount of time that we work. We now have more plans to expand.”<sup>33</sup>

While the relationship between the size of the premium and the postprivatization performance of the firm is clear, the relationship between the two is less so. From an economic point of view, it is difficult to argue that it is the size of the premium or discount that causes the differences in performance. Conventional economic thinking suggests that the amount managers pay for their firms are already committed and should not affect ex post behavior since managers are residual claimants. Barring some other difference, the owner of a discounted and premium-paying firm should act the same. Rather, it is possible that after acquiring the firm for a discount, the incentives faced by the new owners may not have been as strong as those who paid a premium.

The answer, in part, might be that the original owner of one firm, in fact, endows its buyer with different sets of rights than those provided by another original owner to its buyer. In addition, it is possible that the nature of the rights depends on the magnitude of the premium rate. Such a case would exist if after a firm was privatized (in the sense that it was sold to its former manager), the leader who sold off the firm to a buyer for a heavy discount was able to claim part

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<sup>32</sup> Manager interview 1201, 7 July 1998.

<sup>33</sup> Manager interview 1202, 7 July 1998.

of the firms' future profits. In other words, it could be that some buyout negotiations leave a "tail" in the leaders' hands.<sup>34</sup> In this case the incentive problem is clear. If the manager has to share his profits with the government after privatization, his enthusiasm to expend more effort and raise the firm's efficiency would be lower. In contrast, better performing firms appear to face a different set of incentives. If leaders promised not to interfere or ask for further payments from these firms, and if the rights of these privatized firms are secure, managers would have better incentives.

Perhaps the most important result from our study of privatization is our finding that leaders decide to keep a tail in some cases and not in others. This institutional mechanism plays an important role in both facilitating insider privatization and shaping the earnings profiles of rural firms in China. Although it was difficult with traditional survey methods (such as those used in our 1998 firm-level survey) to isolate contractual contingencies, during our follow-up interviews in 2000 we collected information that supports the idea that leaders in some firms keep a tail and those in others do not. During the follow-up survey, we asked the township leaders the following question: Are there privatized firms for which you received only a small buyout price, but from which you expect to receive future payments? Leaders in 15 out of 38 townships answered "yes" to this question, a high enough level of response that we consider this to be prima facie evidence that such contractual forms do exist. When examining which firms are required to make such payments and which firms have no such liability, we find a strong correlation between the postprivatization profit sharing arrangements and the original buyout price. Our data show that for a subset of firms there is a significant negative correlation between the postprivatization payment (as a percentage of profit) and the normalized buyout price (-0.39).

This statistical finding is backed up by conversations we had with many leaders and managers. For example, when we asked one Zhejiang Province township leader to describe the

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<sup>34</sup> In Chinese, the expression "with a tail" or "leave a tail" suggests that a task has not been completed. Specifically, in this paper, it means that privatization does not give the new owner full incentives, since the

nature of their relationship with the new owners of their township's privatized firms, he replied, "We continue to have a close relationship with some firms and not others. If the firm makes (has made) a lot of profits after privatization, and they got the firm for a low price, we are due a part of the profits."<sup>35</sup>

When we asked the manager of one of the firms that had such a relationship with the government, the firm manager laughed and answered, "Making a lot of profits? That is not very likely to happen, otherwise, I would have paid more. But, if I did end up making a lot of money, I would expect that the government would be owed a part of it and I would probably not mind paying the government more."<sup>36</sup>

When we also asked a manager of a premium-paying firm the same question, we received a different answer. The manager emphatically said, "No way. We do not owe them [the government] anything else. We already paid all that they asked us to pay. The firm is ours, and we do not owe anybody anything after paying our taxes. We made about one million *yuan* in the past three years. No one asked for any additional payments."<sup>37</sup>

In discovering such a mechanism we can explain several of the special features of China's privatization. Since some leaders will come back to some firms for a share of future profits, but not others, we have one possible explanation of why some firms are becoming more efficient after privatization while others are not. We also believe that having such contingency contracts (that is, for a certain type of firm—in our case a discount paying firm—contingent on the firm making a profit, the leaders may or may not ask the firm to turn over to the township additional payments) are an institutional mechanism that allows China's leaders to sell firms to insiders whereas others have been unsuccessful in doing so. The leaders use the threat of the tail as a "screening mechanism" during the buyout negotiations to elicit information from managers

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original owner, the government, retains some residual rights over future profits.

<sup>35</sup> Township leader interview 122, 12 August 1998.

<sup>36</sup> Manager interview 15403, 26 August 1998.

<sup>37</sup> Manager interview 12301, 4 August 1998.

about the value of the firm. The screening occurs by the use of joint contingent profit share and the buyout price. The buyout process is one where leaders offer the manager a menu of contracts, each one consisting of two key terms: a buyout price and a sharing rule for future profits. For managers who pay a lower premium or have a higher discount (for example the construction material firm in Liuqiao Township), the government has the right to share with the new owner part of the firm's postprivatization profits (should they be made). In contrast, for managers who are willing to pay a higher buyout price for the firm (such as the brothers who bought the electric fan firm), the government promises to give the firm full rights to all of their future earnings (that is, after their official taxes are paid).

One of the "elegant" elements about this type of screening mechanism is that it is able to collect private information from the managers without coercing them. Good managers will be separated from bad ones. This is because good managers (or managers of good firms) who believe that they can make substantial profits after privatization will prefer to pay a higher buyout price in order to keep all the firm's future profits. Bad managers (or managers of bad firms), in contrast, know that they are not likely to earn much postprivatization. As a result, they will choose to pay only a small amount up front. In return for the lower price, however, the manager that purchased the heavily discounted firm knows that he will have to share a part of any profits with the government.

Although this mechanism makes it possible to elicit important information before the buyout occurs, there is a cost for the government. The contract terms accepted by bad managers (or managers of firms with poor future prospects) will not face strong incentives. In this subset of cases, the poor incentives will lead to lower effort. As a result, we should not expect all privatized firms to operate more efficiently after privatization; only those better firms with more capable managers do.

While it is important to understand how many firms have been privatized, and how privatization has been executed, policy makers are also concerned about whether or not the privatization movement has been successful. Some researchers in China suspect that the government leaders and the insider managers collude to seek rents from privatization.<sup>38</sup> They argue that these firms are not becoming more efficient due to the nature of the rent-seeking process. Others argue that even if insiders pay little to buy out the firms, as long as the new owners have full incentives, these firms should prosper.<sup>39</sup> In this section, although a complete discussion of the efficiency analysis is beyond the scope of the paper, we do provide a summary of our empirical work that addresses three sets of questions. Do firms perform better after privatization? If so, what firms perform better? And for those that do, why do they perform better?

To measure the effects of privatization on firm efficiency, we explain performance as a function of privatization and other control variables. We use three performance measures – accounts receivable management, the profit rate, and value added per worker – as dependent variables. To explain performance, we include several control variables to measure firm size. We use total asset value when we explain accounts receivable behavior and profit rates, and use labor and capital when we explain value added per worker. In order to compare the performance of privatized firms to that of government-owned and private firms, and to compare post privatization performance to preprivatization performance, we have three ownership indicators: private, preprivatization privatized, and postprivatization privatized indicators (the default is government-owned firms).

Our most basic models (i.e., using an Ordinary Least Squares estimator without controlling for the size of buyout price) show mixed results of the effect of privatization on performance (Table 5). The firm size measures are significant (rows 1 and 2); larger firms tend to

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<sup>38</sup> Wen Lu, “Problems during the process of TVE reforms.”

perform better than smaller firms in terms of profitability and collecting account receivables. Also, truly private firms (those that were never government owned) outperform government-owned firms when examining all performance measures – with 4.6 percentage points fewer overdue accounts receivable, profit rates that are 5.4 percentage points higher, and value added rates that are 15.2 percentage points higher (row 4). In this simple model, the improvement in performance of privatized firms relative to government-owned firms is less obvious. Although the postprivatization indicator has a positive coefficient in all of the equations, none of them are significant (row 6).

The findings change, however, when we control for the relative size of the buyout price. When we include in our model a variable that measures how large a premium the manager paid for his firm, we find performance of privatized firms increases significantly with the size of the premium (Table 6). Privatization has a strong positive effect for the premium-paying firms for all three performance measures. Compared with the government-owned firms, premium-paying firms have 6.3 percentage points fewer overdue accounts receivable, 5.6 percentage points higher profit rate, and a 20 percentage points higher value added per worker (row 6). However, as the premium rate decreases (that is, when we look at privatized firms that enjoyed a moderate discount), the relationship between privatization and performance either disappears or reduces. Most importantly, according to our analysis, the performance of the heavily discounted firms is indistinguishable from that of government-owned firms (row 8).

There is also evidence showing that premium-paying privatized firms have caught up with private firms. We conduct a series of statistical tests for regression (4)-(6) in order to examine whether the performance of privatized firms is catching up with that of private firms or whether it remains the same as that of government-owned firms. We accept the hypothesis that the premium-paying firms perform as well as private firms in terms of all three performance

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<sup>39</sup> See Hongbin Li, “Reversing privatization as a screening mechanism;” and Hongbin Li and Scott Rozelle, “Saving or Stripping Rural Industry: an Analysis of Privatization and Efficiency in China.”



measures. This means that accounts receivable management, profit rate, and value added per worker of privatized firms whose managers paid a premium, have caught up with those of private firms.

If these effects are typical for firms in rural China, they show, in general, how privatization has helped improve firm performance. We have shown, however, that not all firms improve their performance equally. Firms with a higher premium rate improve performance more than those with a lower premium rate, and most likely this is due to the owners in different types of firms facing different incentives. In general, our econometric analysis provides supporting evidence to the screening theory.

#### *Conclusions and Implications for the Rural Political Economy*

In this paper, we have described the process of privatizing China's TEs. Our work shows that the pervasiveness of privatization is apparent. The privatization in the mid-1990s is deep and fundamental. Almost 90 percent of local government-owned firms have transferred their shares to the private sector partially or completely by 1999. Privatization is widespread, regardless of what definition we use (share-shifting, controlling-interest shifting, or complete).

Our analysis also explains the surprising success of insider privatization. We demonstrate that in the face of information imbalances between the seller and buyer, the buyout price and a contractually contingent payment in the form of a claim on future firm profits by government leaders can be used to elicit information from the buyer about the firm's future profitability. Using such a mechanism, leaders can maximize their revenues and prevent privatization stalling. Although some inefficiency arises due to the poorer incentives that some managers face, "privatization with a tail" allows leaders to separate good managers from poor managers (or strong firms from weak firms) and attain a second-best solution.

*Impacts beyond Firm Efficiency.* In China's countryside, however, privatization involves even more complicated issues than its impact on firm efficiency. Moreover, the nature of these other issues is often so intertwined with the performance of firms and operation of the rural economy that sometimes it is difficult to disentangle exactly what factors are most important. For example, it is possible that privatization does not only involve providing the new owners with better incentives. In some cases, it also could involve corruption. In fact, it is difficult to distinguish on the basis of data whether it is poor incentives or corruption that causes the poor performance of discounted firms. If leaders were to ask the buyer to pay not only a buyout price, but also a payment to the leader's personal account, the manager might be allowed to purchase the firm for a discount. If there were no chance of being caught, the manager would have full incentives for the firm's future profits. However, if there was a chance that managers be caught and punished for corruption, and if the probability of getting caught was greater the more discount the manager received, managers in this case might also face imperfect incentives, since they would not want to have such a firm perform too successfully and attract the attention of others. Although we do not have systematic data showing the existence of corruption in the privatization process, we do hear stories about corrupted deals. Both the former party secretary and mayor of Xinjian Township in Jinyun County, were removed for corruption, and one of the crimes they committed was taking bribes during the privatization process. The managers who bribed were also jailed, and the privatized firms were confiscated by the government, and resold to new owners. To the extent that this situation is widespread, privatization may have adverse effects as well as the positive ones that lead to their greater efficiency.

Beyond corruption, privatization may also affect the fiscal circumstances of local governments. Since one of the major functions of TVEs traditionally was to help finance local government budgetary expenditures, one natural concern about privatization is that it may worsen

local public finances.<sup>40</sup> Revenues could fall if the profit remittances that once came from the government-owned firms were not fully replaced by alternative sources. However, there are other factors that may attenuate the budgetary impact of government losing their own firms. First, in many cases, by the mid-1990s, TEs had become liabilities rather than assets to local governments.<sup>41</sup> Second, although for many private firms the residual rights on profits have shifted to the managers, local governments still are able to generate revenues by collecting tax from these same firms.<sup>42</sup> Third, when local governments shed themselves of the burden of running their own enterprises, their time is freed up and it is possible that they can find other ways to raise local revenues.

Overall, in our sample, we find that privatization has not affected the locality's fiscal conditions. By examining township fiscal income and expenditures for the four years of our sample period 1994-1997, we find that although more firms were privatized each year, 83 percent of the townships actually experienced a rise in the budgetary (and extra-budgetary) revenue every year. In a separate paper, we employ multivariate analysis to examine the correlation between privatization and local fiscal income. We actually find that the number and sizes of firms privatized has no dampening effect on local public finance.<sup>43</sup> Such findings should also allay concerns that the strength of government control would fall when the government lost direct control over revenue earning entities.<sup>44</sup>

In conclusion, our results present evidence that rural industries in China may continue to contribute to the nation's economic growth. Private firms will necessarily be a part of all industrial sectors in the future. The current trends suggest private, rural firms are evolving in a positive way that may very likely give them an active role in the coming years. While more

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<sup>40</sup> Jean Oi, *Rural China Takes Off: Institutional Foundations of Economic Reform*; Andrew Walder, "Local governments as industrial firms: an organizational analysis of China's transitional economy."

<sup>41</sup> Jean Oi, "The decades of rural reform in China: an overview and assessment."

<sup>42</sup> Ibid.

<sup>43</sup> Hongbin Li, Scott Rozelle and Li-an Zhou, "Fiscal decentralization and privatization: evidence from rural China," *mimeo*, the Chinese University of Hong Kong, 2002.

research is needed, we show how the rural industrial sector is responding as in the past to the new institutional changes occurring around it. We cannot say if the gain in efficiency is enough to make rural industries competitive in the future. But at the very least, the change is in the right direction. As such, policy makers who are calling for the suppression of rural industries have no basis for their claims. It may be that additional policy changes could relax constraints that could make the gains in efficiency even greater, and rural industry could even re-assume its pivotal role in China's growth and rural employment.

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<sup>44</sup> Jean Oi, *Rural China Takes Off: Institutional Foundations of Economic Reform*.

Table 1: Ownership Structure of Industry *After Privatization* under Alternative Definitions of Privatization in Both Jiangsu and Zhejiang Provinces, 1993-1999.

| Firm Type                                 | Proportion of Firms in Each Type of Privatization Category |  |                         |
|---|--|--|-------------------------|
|   | “Share-shifting” <sup>a</sup>                              | “Controlling-interest shifting” <sup>a</sup> | “Complete” <sup>a</sup> |
|   | (1)  | (2)  | (3)                     |
| <b>1993-1999, 390 firms, 43 townships</b> |  |  |                         |
| Township Enterprises <sup>b</sup>         | 14   | 22   | 43                      |
| Privatized                                | 86   | 78   | 57                      |

<sup>a</sup> Under “Share-Shifting Privatization”, a privatized firm is any township enterprise in 1994 (fully-owned) that shifted any part of its shares to private individuals. Under Controlling-interest Shifting Privatization, a privatized firm is any township enterprise in 1994 (fully-owned; those with majority share) that transferred enough shares to private individuals to give them a majority share. Under “Complete Privatization,” a privatized firm is any township enterprise (fully-owned; those with majority-share; those with minority-share) that shifted all of its shares to private owners, and has hence lost all of its ownership interest in the firm.

<sup>b</sup> Under share-shifting privatization, a township enterprise includes only those firms with 100 percent controlling interests held by the township. Under controlling-sharing shifting privatization, a township enterprise includes all firms in which the township holds a majority of the shares. Under complete privatization, a township enterprise includes all firms with any shares held by the township.

*Source:*  
Authors’ 2000 township census.

Table 2: Distribution of the Rate of Privatization at the Township Level among Townships in China, 1993-1999.

| Percentage Privatized | Number of townships <sup>a</sup> | Percentage of townships <sup>b</sup> |
|-----------------------|----------------------------------|--------------------------------------|
| 0-20                  | 7                                | 16                                   |
| 21-40                 | 6                                | 14                                   |
| 41-60                 | 10                               | 23                                   |
| 61-80                 | 12                               | 28                                   |
| 81-100                | 8                                | 19                                   |
| Total                 | 43                               | 100                                  |

<sup>a</sup> The number of townships in each percentage range. For example, the number 7 in the first row means that seven townships have privatized between 0 to 20 percent of their firms between 1993 and 1999.

<sup>b</sup> The percentage of townships in each percentage range. For example, the number 16 in the first row means that 16 percent townships have privatized between 0 to 20 percent of their firms.

*Source:* Authors' data (2000 township census).

Table 3: The Buyout Price, Base Value, and Premium Rate of Privatized Firms in Rural China, 1994-1997. (N=88)

| Buyout price to base value (BB) ratio <sup>a</sup> (percent) | Number of firms | Buyout Price <sup>b</sup> (million yuan) | Base value <sup>c</sup> (million yuan) | Asset value <sup>d</sup> (million yuan) | Payment premium <sup>e</sup> (million yuan) | Premium rate <sup>f</sup> |
|--|-----------------|--|--|---|---|---------------------------|
|  | (1)             | (2)                                      | (3)                                    | (4)                                     | (5)   | (6)                       |
| 0-20   | 21              | 0.78                                     | 7.16                                   | 18.06                                   | -6.39                                       | -0.32                     |
| 21-50  | 14              | 1.48                                     | 4.56                                   | 11.67                                   | -3.17                                       | -0.29                     |
| 51-75  | 13              | 1.57                                     | 2.39                                   | 6.80                                    | -0.82                                       | -0.12                     |
| 76-100   | 13              | 3.09                                     | 3.80                                   | 16.61                                   | -0.70                                       | -0.03                     |
| Greater than 100   | 20              | 3.24                                     | 2.58                                   | 10.88                                   | 0.93  | 0.10                      |
| Less than 0 <sup>g</sup>                                     | 7               | 0.20                                     | -0.69                                  | 6.22                                    | 0.89  | 0.18                      |

<sup>a</sup> The ratio is calculated by dividing column 2 by column 3.

<sup>b</sup> The buyout price is the cash paid by the new owner to the government at the time of privatization.

<sup>c</sup> The base value is the book value of equity, which is the difference of the book value of assets and the book value of debt.

<sup>d</sup> The asset value is the book value of assets.

<sup>e</sup> The payment premium is the difference between the buyout price and the firm's base value, or column 5 = column 2 - column 3.

<sup>f</sup> The premium rate is the ratio of payment premium to the asset value, or column 6 = column 5 / column 4.

<sup>g</sup> The BB ratio can be negative when the book value is negative (or the firm's debts are greater than its assets).

*Source:*

Authors' 1998 firm-level survey.

Table 4: Average Performance Measures of Heavily-Discounted, Moderately-Discounted and Premium-Paying Privatized Firms in Rural China, 1994 to 1997. (N=88)<sup>a</sup>

| Privatized firms                              | Accounts receivable management <sup>b</sup> | Profit rate <sup>c</sup> | Value added per worker <sup>d</sup> | Manager's workload <sup>e</sup> |
|---|---|--------------------------|-------------------------------------|---------------------------------|
| Heavily-discounted (30 firms) <sup>f</sup>    |   |                          |                                     |                                 |
| Preprivatization                              | 0.780                                       | 0.012                    | 13.63                               |                                 |
| Postprivatization                             | 0.749                                       | 0.026                    | 10.33                               | <b>69.8</b>                     |
| Improvement <sup>g</sup>                      | <b>-0.031</b>                               | <b>0.014</b>             | <b>-3.30</b>                        |                                 |
| Moderately-discounted (26 firms) <sup>f</sup> |   |                          |                                     |                                 |
| Preprivatization                              | 0.823                                       | -0.007                   | 9.73                                |                                 |
| Postprivatization                             | 0.846                                       | 0.018                    | 13.78                               | <b>75.4</b>                     |
| Improvement                                   | <b>0.023</b>                                | <b>0.025</b>             | <b>4.05</b>                         |                                 |
| Premium-paying (32 firms) <sup>f</sup>        |   |                          |                                     |                                 |
| Preprivatization                              | 0.796                                       | 0.001                    | 9.49                                |                                 |
| Postprivatization                             | 0.833                                       | 0.023                    | 12.54                               | <b>82.5</b>                     |
| Improvement                                   | <b>0.037</b>                                | <b>0.022</b>             | <b>3.05</b>                         |                                 |

<sup>a</sup> This table reports the means of each group of firms for all four years except that the manager's workload is only for the year 1997.

<sup>b</sup> Accounts receivable management = 1 – overdue accounts receivable / assets.

<sup>c</sup> Profit rate = profits / sales

<sup>d</sup> Value added per worker = (production value – materials costs)/workers.

<sup>e</sup> Manager's workload is the number of hours the manager works per week.

<sup>f</sup> Heavily discounted firms are those in which the premium rate is less than -0.2; moderately discounted firms are those in which the premium rate is between -0.2 and 0; and premium-paying firms are those in which the managers have paid a non-negative premium (the premium rate is positive or zero).

<sup>g</sup> Improvement is defined as: postprivatization mean - preprivatization mean.

*Source:*

Authors' 1998 firm-level survey.



Table 5: Ordinary Least Square Regressions Explaining the Effect of Privatization on Firm Performance in Rural China, 1994-1997<sup>a</sup>

|                           | Dependent variables: performance measures |                      |                                     |
|---------------------------|---|----------------------|-------------------------------------|
|                           | Accounts receivable management<br>(1)     | Profit rate<br>(2)   | Value added per worker (log)<br>(3) |
| Asset                     | 0.0007***<br>(0.0002)                     | 0.0005**<br>(0.0002) |                                     |
| Employment (log)          |   |                      | 0.102***<br>(0.023)                 |
| Capital labor ratio (log) |   |                      | 0.333***<br>(0.025)                 |
| Private firms             | 0.046**<br>(0.019)                        | 0.054**<br>(0.026)   | 0.152**<br>(0.076)                  |
| Privatized firms          |   |                      |                                     |
| Preprivatization          | 0.023<br>(0.017)                          | 0.005<br>(0.023)     | 0.049<br>(0.066)                    |
| Postprivatization         | 0.027<br>(0.017)                          | 0.015<br>(0.022)     | 0.104<br>(0.065)                    |
| Province*year indicators  | Yes                                       | Yes                  | Yes                                 |
| Sector*year indicators    | Yes                                       | Yes                  | Yes                                 |
| Observation               | 572                                       | 591                  | 552                                 |
| R-squared                 | 0.13                                      | 0.14                 | 0.36                                |
| F-statistics              | 1.76***                                   | 2.06***              | 6.35***                             |

<sup>a</sup> Standard errors are reported in parentheses. \*, \*\*, and \*\*\* represent significance levels of 10, 5 and 1 percent. All regressions include interactive terms of province\*year and sector\*year.

*Source:*  
Authors' 1998 firm-level survey.

Table 6: Ordinary Least Square Regressions Measuring the Effect of the Buyout Price on Performance of Privatized Firms in Rural China, 1994-1997<sup>a</sup>

|                           | Dependent variables: performance measures |                      |                                     |
|---------------------------|---|----------------------|-------------------------------------|
|                           | Accounts receivable management<br>(4)     | Profit rate<br>(4)   | Value added per worker (log)<br>(6) |
| Asset                     | 0.0008***<br>(0.0002)                     | 0.0005**<br>(0.0002) |                                     |
| Employment (log)          |   |                      | 0.105***<br>(0.023)                 |
| Capital labor ratio (log) |   |                      | 0.333***<br>(0.025)                 |
| Private firms             | 0.045**<br>(0.019)                        | 0.052***<br>(0.026)  | 0.152***<br>(0.076)                 |
| Privatized firms          |   |                      |                                     |
| Preprivatization          | 0.021<br>(0.017)                          | 0.004<br>(0.023)     | 0.045<br>(0.066)                    |
| Postprivatization         |   |                      |                                     |
| Premium-paying            | 0.063***<br>(0.022)                       | 0.056*<br>(0.029)    | 0.202**<br>(0.086)                  |
| Moderately-discounted     | 0.058**<br>(0.024)                        | 0.021*<br>(0.033)    | 0.124<br>(0.094)                    |
| Heavily-discounted        | -0.025<br>(0.021)                         | -0.028<br>(0.029)    | 0.003<br>(0.083)                    |
| Observation               | 572                                       | 591                  | 552                                 |
| R-squared                 | 0.15                                      | 0.15                 | 0.36                                |
| F-statistics              | 2.06***                                   | 2.13***              | 6.20***                             |

<sup>a</sup> Standard errors are reported in parentheses. \*, \*\*, and \*\*\* represent significance levels of 10, 5 and 1 percent. All regressions include interactive terms of province\*year and sector\*year.

*Source:*  
Authors' 1998 firm-level survey.

Table A1: Content of Different Surveys

| Survey   | Interviewees   | Year  |  |
|--|--|---|--|
|  |  | 1998  | 2000   |
| <b>Township leader survey (59 townships)</b>   | Secretary or mayor or vice mayor                                   | Local socio-economic information & leader's human capital | Privatization contracts  |
| <b>Fiscal survey</b>   | Township fiscal office head  | Complete fiscal information 1994-1997                     |  |
| <b>1998 (larger) Census (643 firms in 59 sampled townships)</b>                                | Township vice mayor in charge of industries & township accountants | Incomplete information on 643 firms Between 1993-1997     |  |
| <b>2000 (smaller) Census (390 firms in 43 sampled townships)</b>                               | Township vice mayor in charge of industries & township accountants |   | Complete information on ownership transformation between 1993-1999, but only for 390 firms |
| <b>Firm-level survey (168 firms = 47 TE + 88 privatized TE + 33 private firms)<sup>a</sup></b> | Firm manager and accountant  | Complete  |  |

<sup>a</sup> Observations of the firm survey was drawn in 1998 from the census of 643 firms that were owned by the township government in 1993 and private firms that are of similar size.