Chinese Villages and Townships as Industrial Corporations: Ownership, Governance, and Market Discipline[1]

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Public firms in a reforming socialist economy face two problems: the old soft-budget constraint syndrome and new principal-agent problems. China's township-village government-owned enterprises (TVEs) outperform state-owned enterprises (SOEs) in growth rate and productivity. Three explanations are proposed in the literature: (1) TVEs represent informal or ambiguous private property rights, which are most efficient in partial reform. (2) The small size and scale of township-village governments as industrial corporations allows officials to monitor TVEs directly and to limit their wherewithal for cross-subsidizing. (3) Strict market disciplines facing TVEs render indirect market monitoring to mitigate agency problems effectively. Analyses of Jiangyin data show that (*a*) while both superior to local SOEs, village and township enterprises share similar productivity and (*b*) the scale of township-village corporations slightly increases productivity. I conclude that local state corporatism should be revised to include market discipline as an effective governance mechanism.

INTRODUCTION

China's departure from central planning in the industrial sector can be viewed from three aspects: decentralization, marketization, and property rights reform at the enterprise level. Since 1978, the Chinese central gov-

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ernment devolved control and ownership of state enterprises to lower levels of government and granted local governments the right, in the form of fiscal contracts or tax farming, to derive residual income from the enterprises under their jurisdictions. While centralization and decentralization have been perennial problems for China's political economy since the 1950s (Lardy 1975), post-Mao decentralization significantly changed the relationship between central and local governments and between local governments and their enterprises. Rather than merely playing the role of collection agents for the Ministry of Finance, local governments now actually earn income from enterprises in their jurisdiction (Wong 1992; Wong, Heady, and Woo 1995; Oi 1999).

More significantly, the post-Mao decentralization occurred in parallel with a marketization process that gradually shifted Chinese industry from a planned system to a market-driven one, and created various markets, including those that traded securities. A key feature of the Chinese marketization process was a dual track system in which market transactions and bureaucratic allocations coexisted. As the absolute volume of industrial goods allocated through planning remained fixed, the share of economic activities carried out in the market sector expanded as the economy grew. By 1993/94, the Chinese economy had basically grown out of the plan (Naughton 1995).

Property-rights reform of the state-owned enterprises centered on repartitioning control and residual income rights, in the form of granting autonomy to SOEs and allowing them to retain part of their profits. A managerial contract system was implemented in an attempt to link managers' pay with performance. While large-scale privatization of state or collective assets was insignificant until recent years, initial changes in ownership composition proceeded by gradually liberalizing restrictions on private entrepreneurial activities.

According to Kornai, the decentralization was a classic type of failed reform, as attempted in Eastern Europe,[2] and simply transferred public ownership from single to multiple public owners. Granting state-owned enterprises partial autonomy put them in a dual dependency (on the bureaucracy and the market), in which bureaucratic dependence often emasculated market incentives—it did not solve the problem of bureaucratic intervention and soft budget constraints. Without a large private sector, Kornai (1990*a*, 1990*b*, 1992) asserted that genuine market coordination was impossible. But in China, decentralization seems to have been essential and effective in transforming the economy from a centrally planned

[2] Kornai (1989) called the first generation of Hungarian reformers, who attempted to imitate the market system via decentralization in the 1970s and early 1980s, "naive reformers."

system to a market driven one (Walder 1995; Oi 1992, 1999; Qian and Weingast 1997; Qian and Roland 1998). Chinese economic reforms appear to have successfully created a market system based not on private ownership, but on decentralized public ownership.

The spotlight has focused on the spectacular success of rural enterprises owned and operated by township and village governments (TVEs). From 1985 to 1996, the share of TVEs in gross industrial output expanded from 14.6% to 27.8%, whereas that of state-owned enterprises (SOEs) shrank from 65% to 28.5% (Jefferson and Rawski 1999, p. 27). In 1997, all rural enterprises (including private ones) contributed 60% to total value added of rural society and 27.7% to the national GDP (Ministry of Agriculture 1998, p. 3). Even though the private sector and "other" sectors (mostly foreign investment or joint ventures) expanded the fastest, most rural industrial output was produced by the government-run TVEs.

Classical property rights theory maintains that clearly assigned private property rights are important for the smooth operation of a market economy for at least the following two reasons. First, private ownership of rights serves to internalize externalities whereas public or communal ownership incurs large externalities (Demsetz 1967). Second, the constitutional sanctity of private property rights fends off costly disputes and, most important, state predation that could dampen incentives and cripple economic growth (North and Weingast 1989). Thus, the collective or "public" nature of TVEs in China seems to challenge these basic tenets of the orthodox property rights theory. This puzzle has aroused the interest of both sociologists (Walder 1995; Lin 1995; Nee 1992; Peng 1992) and economists (Rawski 1999; Naughton 1994; Stiglitz 1994, p. 176; Weitzman and Xu 1994; Chang and Wang 1994).

Whereas economists debate over whether economic reform has improved the productivity of SOEs (Li 1997; Jefferson, Rawski, and Zheng 1992, 1996; Woo et al. 1994; Woo 1999; Rawski 1999), there is overwhelming evidence that TVEs outperformed SOEs in productivity growth (Woo et al. 1994; Jefferson 1999; Perkins 1996; Wu 1995), despite the fact that TVEs generally use lower-end technology and derive large efficiency gains from SOE skill spillovers (Peng, Zucker, and Darby 1997). As Naughton (1994, p. 268) has noted, the rapid growth of the TVEs can be explained by external forces such as the availability of cheap labor, tax concessions (and evasion), and distortions in state industries.[3] An interesting question remains whether TVEs represent an efficient institutional adaptation to partial reform. The objective of this study is to explore the

[3] Indeed, even the classical socialist system was able to achieve high extensive growth rates (Szelényi 1989).

institutional and organizational factors that account for the observed superior productivity performance of TVEs vis-à-vis SOEs.

Largely three theoretical approaches emerge from the literature, emphasizing one or two of the three aspects of reform. (1) The informal privatization approach emphasizes property rights reform and interprets the TVEs as a form of informal or disguised privatization (Nee and Su 1996; Sachs and Woo 1997), or organizational hybrids (Nee 1992) with ambiguous property rights (Li 1996). In this light, TVEs were the "second best" adaptation to the environment of market imperfection and political hostility toward private property. This approach is labeled "convergence theory" because its proponents view Chinese TVEs as a halfway house in the transition toward a full-blown Western-style market economy based on private ownership (Nee 1992; Woo 1999). (2) The corporate governance approach emphasizes that the devolving and paring of control rights and residual income rights over enterprises to local governments turned them into economic corporations and public officials into boards of directors. This institutional arrangement became known as "local state corporatism" (Walder 1995, 1998; Oi 1999) or "local market socialism" (Lin 1995). The TVEs' superior performance is to be explained in terms of corporate governance, that is, township-village governments' commitment to hard budget constraints and better monitoring of TVE managers. (3) The market discipline approach (Lin, Cai, and Li 1998, 1999; Che and Qian 1998) shares the local state corporatist conviction in the feasibility of an efficient market system under public ownership but differs from the latter in its emphasis on external market environment and market disciplines rather than internal governance structure in explaining the success of TVEs. Woo (1999) terms the second and third approaches the "experimentalist school," because they explicitly or implicitly believe that Chinese reform in the public sector, especially the success story of TVEs, represents a unique institutional innovation that is not only feasible but also viable, at least during the transition period.

In this study I compare the productivity performance of government-owned enterprises at the village level, township level, and municipal level. Adopting the conceptual framework of local state corporatism, I incorporate both enterprise and corporate-level variables in a hierarchical production function. Analyses of data from Jiangyin, a successful local state corporatist region, show that: (1) while superior to local state enterprises at the county level, village-owned enterprises share similar productivity with township-owned enterprises; and (2) the scale and size of township-village corporations slightly increase rather than decrease productivity. I conclude that a revised version of local state corporatism that incorporates market competition and market disciplines best explains the relatively superior efficiency of TVEs.

FISCAL DECENTRALIZATION AND ENTERPRISE REFORM

The reform experiences of state-owned enterprises in Chinese cities seem to follow Kornai's logic about the unreformability of public enterprises in reforming Eastern Europe. Two problems loom large in the reform of the Chinese urban state industry: the old soft budget syndrome and the new principal-agent problem.

Chinese State bureaucracy has six levels. At the top are various industrial ministries (e.g., Ministry of Textiles, Ministry of Petroleum). Prior to the economic reforms, a ministry planned and supervised the operation of most large and medium public firms in a specific industry, and its jurisdiction cut across geographical boundaries. During the reforms, these ministries lost a lot of enterprises to regional governments but kept the large ones, and they began to behave like giant industrial conglomerates. In 1998, a number of these ministries were separated from the government bureaucracy and became officially incorporated (Forney 1998). At the next level are the 30 provincial governments. By the end of 1993 there were 335 prefecture-level governments below the provinces, and nested under the prefectures were 2,166 county (*xian*) governments. Chinese cities range across three administrative levels: 3 provincial, 196 prefectural, and 371 county-level cities. Below the counties there are 48,000 townships (*xiang-zhen*),[4] whose governments are the lowest rung in the state apparatus. At the grassroots level there are numerous village (*cun*) committees that are not part of the formal state apparatus but perform governmental functions.

Chinese public enterprises belong to different levels of government jurisdiction (Walder 1992). Firms directly run by ministries and those owned by provincial or prefecture-level governments are called "state owned" (*guoying*); those at the county level are "local state owned" (*difang guoying*); and those at the township and village levels are classified in the "collective" sector (*jiti*). The state's treatment of enterprises at different levels was very different and so was their marketization process. Local SOEs, usually small in size, played peripheral roles in the eyes of the central planners and thus received less favorable treatment in terms of resource allocation. Rural enterprises at the township and village levels were never part of central planning and thus not entitled to state subsidies such as cheap credit or low-priced inputs. In the prereform period they were named commune-brigade enterprises and had to struggle for survival in the interstice of the planning system. During the reform process, local SOEs were the first to be released from the planned sector into the market,

[4] Numbers of administrative units change from year to year. The figures cited here are from the State Statistical Bureau (1994, pp. 3, 17).

while large and medium SOEs gradually grew out of the plan via the dual track system (Naughton 1995).

Prior to 1978, fiscal revenues and expenditure were centralized in the Chinese state bureaucracy. Profits and taxes collected by local governments were handed over to the center. The expenditure of local governments depended less on local revenue-generating efforts and more on bargaining with higher authorities for budgetary slack, the allocation of which softened budget constraints on local governments and on the SOEs lodged in their jurisdictions. Local governments would not hesitate to bail out failing enterprises because shortfalls in one year became the rationale for bargaining for larger allocations the next year (Walder 1995). This cycle gave rise to the classic soft budget constraint syndrome identified by Kornai (1992, pp. 489–97). Kornai saw this as an incurable disease inflicting state-owned enterprises because the state, as the owner, also has objectives (e.g., maintaining employment and political stability) other than financial performance. On the macrolevel, soft budget constraints lead to overinvestment and shortages; on the firm level, they engender ex ante and ex post inefficiency. First, bailing out poor-performance firms ex post means that the mechanism of "constructive destruction" is not at work. Second, because they expect government bailouts, firm managers have little incentive to improve productivity and efficiency.

In order to increase the revenue-generating effort on the part of local governments, the center not only devolved control of most SOEs to them, but also made local governments the residual claimants of SOE profits in their jurisdiction by implementing a fiscal contracting system in 1980. Fiscal contracting was basically a form of multilayer tax farming. At the first level, the center negotiated with each province a fixed lump sum or fixed proportion of its revenue (taxes and SOE profit remittance) to be handed over to the center. The provinces retained the remainder after fulfilling their obligations. The terms of the contracts were to remain fixed for three years or more, except for the three "cash cow" metropolises (Shanghai, Beijing, and Tianjin), for which the contract provisions were renegotiated annually. This arrangement was replicated down to the township level.[5] Fiscal contracting made the local government accountable for its own revenue and spending. After the reform, local governments could no longer expect slack in grant allocation to make up for its own deficits.

[5] Fiscal contracting in the 1980s actually led to a boom in local budgetary and extrabudgetary spending and a decline in the center's revenue relative to national GDP. This propelled the center to revamp the tax system in 1994. The resulting new tax-sharing system separated state and local taxes but maintained the basic features of fiscal contracting (Wong 1997).

Thus, its budget became highly dependent upon the financial health of enterprises within its own jurisdiction (Wong 1992; Wong et al. 1995).

The financial relationship between local governments and SOEs was shaped and reshaped by two reform processes. The first was the tax reform that started in 1983 with "tax for profit" (*ligaishui*), in which profit (and loss) remittances were replaced by taxation. Until the 1994 overhaul of the tax system, the tax-for-profit reform did not create a level playing field because taxes and profit remittances were tailored to each enterprise in a profit-sharing contract or "contract responsibility system" (*qiye chengbao*). Tax targets and profit-sharing arrangements were individually negotiated with the government and remained fixed for three years. The second was "loan for grant" (*bogaidai*), in which administrative grants were replaced by bank loans. The intention of this reform was to increase the accountability of SOE managers: if enterprises had to pay back loans, they would use funds more efficiently. At the same time as this reform, the local branches of the state bank gained more autonomy in approving credit.

The soft budget constraint problem for SOEs did not disappear, however. Although fiscal decentralization and competition hardened budget constraints, credit decentralization in the state banking system softened it (Qian and Weingast 1997; Qian and Roland 1998; Wang 1991). The softness of SOE budget constraints took on a new form: soft grants were replaced by soft loans. SOEs, on the one side, found it possible, if not convenient, to procrastinate or default on payment. SOE managers could always come up with reasons to rationalize their poor performances, such as unfavorable prices and undue social responsibilities. The municipal government, on the other side, unwilling to see SOEs go under, could persuade or order the state bank branches in its jurisdiction to provide "policy loans" to failing firms or to refinance unprofitable projects *ex post*. For local officials, SOEs running in the red were more palatable than laid-off workers going onto the streets. Besides, if the bank could pick up the tab, why not? The state bank took on the characteristics of a public-good externality,[6] because local branches could expect the central bank to come to their rescue. According to one estimate, by the mid-1990s, nonperforming loans in the state banking system amounted to over 40% of its total loans (mostly to SOEs), or 30% of the country's GDP (Ziegler 1997). This propelled Premier Zhu Rongji to start commercializing the state banking system in 1994 and to cut the link between regional gov-

[6] Externalities exist when social costs or benefits are not included in the calculation of private persons or organizations. In the case of excessive bank credit in China, each locality gets the full benefit of borrowing and shares the cost, inflation, with all other localities (Qian and Roland 1998).

ernments and the state banking system in 1996 (Naughton 1997), measures that forced many SOEs to close down or to lay off and furlough workers.

Principal-agent problems arose when the state (the principal) delegated many contractual and residual control rights to SOE managers (the agent). In the classical redistributive system, all SOEs were subject to central planning. Deprived of control rights and residual income rights, the SOE managers were like "puppets," receiving not only production targets but also quotas for labor, capital, and raw material. All profits or losses were handed over to the state. In the context of planning, depriving enterprise autonomy was rational in terms of reducing managerial indiscretion and ensuring the implementation of plans (Lin, Cai, and Li 1999). Agency costs were minimal (except for shirking), but the system suffered serious information distortion and stifled the incentive for efficiency and quality improvement, and initiatives for technological innovation on the part of the managers who were most informed and knowledgeable about the operation of the enterprises. The incentive that SOE managers did have was to use their information advantage to bargain with planning agencies for larger budget allocation.[7]

Thus, management reforms in the 1980s focused on expanding SOE's autonomy to produce outside of the plan and to self-market overquota outputs and allow them to retain partial profits for bonuses and investment, and so on. These reform measures did increased SOE's profit motives and may even have increased their productivity—at least in the 1980s—but they also ushered in serious principal-agent problems, for example, managerial indiscretion, insider control, and state-asset stripping. In the 1990s, SOE profits took a nosedive, even when output increased (Bai, Li, and Wang 1997; Woo et al. 1993).

The massive entry and rapid growth of rural industries since the early 1980s changed China's economic landscape (Naughton 1995; Ho 1994; Peng 1999). The rural enterprises owned by township and village governments demonstrated dynamics and vitality unforeseen in the urban state sector. How could the "public" TVEs avoid the pitfalls of SOEs?

PROPERTY RIGHTS, CORPORATE GOVERNANCE, AND MARKET DISCIPLINE

Rural industrialization in China is often mapped into three famous "models": (1) the Southern Jiangsu model (*sunan moshi*), which features collective ownership; (2) the Wenzhou model, which features private own-

[7] This is what Wolf (1988, p. 70) calls internality induced nonmarket failure, e.g., the tendency of the U.S. Defense Department to justify rather than reduce costs.

ership; and (3) the Pearl River Delta (*Guangdong*) model that features foreign investment and export-oriented manufacturing.[8] This section discusses three theoretical perspectives pertinent primarily but not exclusively to the Southern Jiangsu model in the 1980s and early 1990s.

Informal Privatization

The informal privatization approach represents an attempt to reconcile the apparent paradoxical "progress without privatization" within the framework of property rights theory. It may be called the "private incentive" interpretation because it focuses on the role of TVE managers and entrepreneurs keen on taking advantage of new market opportunities and maximizing personal income.

How could private incentives align with the "collective" nature of TVE ownership? Proponents of this approach argue that property rights of TVEs are informally private (Nee and Su 1996; Nee 1992) or ambiguously defined (Li 1996). Informal private property rights evolve from two important institutional changes: (1) profit sharing, which limits local government's claim on the firm, and (2) managerial contracting, which gives TVE managers large autonomy in controlling the operation and large discretion in using the above-quota profits. These rights are not backed by legal ownership but are based on a mutually beneficial collusion between managers and local officials and buttressed informally by social networks such as family ties and kinship networks, and personal connections. Thus, the security of these rights depends on the strength and stability of the social network in which these rights are embedded (Nee and Su 1996, p. 114).

According to Nee, informal property rights represent a hybrid organizational form that is most efficient in partial reform. Due to political discrimination and market imperfection, pure private ownership incurs very high transaction costs (e.g., difficulty in obtaining bank loans) and invites governmental predation (debilitating taxes, fees, levies, and bribery exaction). Nee (1992, p. 3) defined local corporatism as a "loosely coupled coalition between local government, financial institutions, and firms (collective and state owned) aimed at promoting market-oriented growth." The convenient alliance between governments and enterprises was a locally efficient solution to the problem of partial reform and weak market institutions, but it may have exacerbated overall inefficient resource allocation. Thus, Nee (1992) predicted that as the marketization process advances and the cost of market transactions falls, the cost of the hybrid

[8] In terms of property rights regime, the Pearl River Delta region in Guangdong represents a whole spectrum of governmental, communal, and private blend.

form and informal privatization will outweigh the benefits. This will generate demands for legal security of private ownership and clarification of property rights in the state sector.

Nee's view is shared by many economists. Echoing Nee's emphasis of manager/entrepreneur's autonomy, Zhang (1997, p. 69) argues that under public ownership managerial discretion (in manipulating account books and hiding profits) is a "good thing" because it increases incentives and hardens budget constraints. Li (1996) maintains that it is the manager-entrepreneur who created the firm and invited government officials as partners in a contingent contract. Ambiguous ownership arises as a second-best solution when market transactions involve high costs and high uncertainty. Sachs and Woo (1997; Woo 1999) observed that many of the so-called collective TVEs were actually "red caps" for covering up de facto private ownership. Their observation was based on the experiences of Wenzhou in Zhejiang Province, where private economic activities flourished with the acquiescence of local officials (Liu 1992).

Local State Corporatism

The local state corporatist approach, first of all, emphasizes that township and village governments are the de facto owners of TVEs. They have the rights to appoint and dismiss managers, to make important investment decisions, to dispose of assets, and to claim part of the net profits (by law, the local governments are entitled to 40% of the profits of TVEs that they own). Even though the ownership of TVEs is officially classified as "collective" (*jiti*), their relationship with township-village governments is not very different from that between SOEs and municipal governments.[9] TVE property rights are unambiguously public (Walder 1995; Che and Qian 1998; Naughton 1994). Fiscal contracting aligned the incentive of officials to local economic development. We need not assume that Chinese officials were altruistic and noble idealists. Personal income (bonuses and fringe benefits) and perks (luxury cars, travel, and large expense accounts), as well as bureaucratic careers, were pegged to local public revenue (Whiting 1996; Oi 1999). These benefits, according to Walder (1995), are not different from those enjoyed by American CEOs. The key point is that ownership and incentives get aligned to public offices.

Second, the better performance of TVEs vis-à-vis SOEs were derived

[9] Walder (1995) pointed out that the Chinese official distinction between "state owned" and "collective" here was not an ownership distinction but one signaling different privileges in the planning system. Both types indicate government ownership. The collective sector was usually left out of the central planning system and the subsidies associated with it. I agree with him with regard to the township *jiti*, but will argue later that village *jiti* belongs to a different category.

not from any ownership difference, but from the greater incentive for and capability of township-village governments to enforce their rights as owners. The call for clarification of property rights of public assets has missed the point, as they are already clear. What is needed is a good corporate governance structure that alleviates bilateral bargaining and mitigates agency cost. Three organizational features of government jurisdictions have been identified as important for corporate governance: (1) administrative levels in the state bureaucracy, (2) governments' nonfinancial objectives in enterprises such as unemployment prevention and welfare provision, and (3) the economic scale and organizational size of the local government corporation.

A general observation of local state corporatism is that the administrative levels of the state bureaucracy matter and that the performance of public enterprises progressively worsens as one moves up the ladder (Walder 1992, 1995). Not only do TVEs outperform SOEs, it is argued; but village firms should outperform township firms as well (I address this in the next section); county-level SOEs should outperform prefecture-level SOEs and so on. Both governments' nonfinancial objectives and corporate scale are correlate variables used to explain the differential efficiency across different administrative levels. But administrative levels per se are seen to have an impact on the security of the public property rights of local governments over SOEs, hence local officials' incentive to enforce their property rights. Nearness to the center implies that local governments' property rights are more attenuated by central intervention and supervision. Thus, a higher-level government has fewer incentives to enforce property rights over SOEs in its jurisdiction than does a lower-level one (Walder 1995).

The second feature is related to local governments' propensity to bail out failing firms. Township-village governments face many fewer political constraints to maintain local industrial employment (Walder 1995, p. 286). TVE workers are mostly local or migrant farmers who have a piece of farmland to return to at home if they are laid off. For TVE workers, industrial jobs are a means to improving their standard of living, not a means of subsistence. Besides, these underprivileged former peasants were quite used to the vicissitudes of the labor market. Urban SOE workers, on the other hand, had been the aristocrats of the Chinese working class and were used to "iron rice bowls" and a cradle-to-grave welfare system that could even be passed from generation to generation. They had already been humiliated when they experienced a relative decline in income, fringe benefits, and status and became very resentful when, in the mid-1990s, reform deprived them of the last vestige of their privileged status—lifelong job tenure. Thus, city governments were under much greater pressure to bail out unprofitable firms in order to maintain employment.

The third feature, corporate size and scale, is seen to affect the ability of local governments to monitor their firms and to constrain their resources for bailing out unprofitable firms. Township and village corporations are usually small in size and in scope; this enables officials to more closely monitor the operations of their enterprises and thus to reduce managerial indiscretion and lower agency costs (Walder 1995). A municipal government, for instance, typically has a very large number of enterprises within its jurisdiction, which would weaken its incentive and capacity to monitor each individual enterprise (Walder 1992, 1995). It has to turn to "arm's-length" governance or rely on multilevel supervision, that is, creating secondary- or even tertiary-level monitoring agencies. Additional administrative levels, however, also tend to increase information distortion and further diffuse property rights and monitoring efforts (Walder 1995, p. 288). Managerial indiscretion and insider control eat into SOE assets and profits. Contrary to the informal privatization approach, which views managerial autonomy as an incentive-enhancing device, the corporate governance approach views slack in managerial contracts as generating agency cost. Walder (1995, p. 289) maintains that it is precisely the capacity of lower-level government to monitor public enterprises and enforce its property rights that has improved economic performance.[10]

The small scale of lower-level government corporations may also help to toughen budget constraints, by limiting officials' ability to redistribute funds from healthy to failing firms (Walder 1995). It is not uncommon for township-village governments to pay off debts for TVEs, but their limited wherewithal reduces their tolerance for chronic loss makers. The larger industrial base in a higher-level government would give public officials much greater leeway to cross-subsidize failing enterprises.

This is in fact a very strong argument because it implies that the negative impact of scale has to be so strong that it negates the general effect of economy of scale. Thus, I generate the first testable hypothesis (the diseconomies-of-scale hypothesis):

HYPOTHESIS 1a.—*The size and scale of industrial corporations at the township-village level are negatively correlated with firm productivity.*

Market Discipline

Neither of the above two camps would dispute the efficiency-inducing effect of market competition. They differ in whether the coupling of mar-

[10] Nee (1992), on the other hand, criticizes this approach as "state centered" because it ignored the fact that local bureaucrats also prey on enterprises. Note that Nee's interpretation of fiscal contracting and profit-sharing mirrors that of Walder. For Nee, these institutional "innovations" are important because they restricted and limited both the central and local state's claim on profits, a precondition for economic growth.

ket with nonprivate ownership is viable. Sachs and Woo (1997), for instance, would argue that market reform can only succeed by first getting the property rights right through swift and decisive privatization. Kornai (1990*a*) described the matching of market with public ownership as "weak linkage" that would not last.

Sharing the local state corporatist conviction about the viability of public ownership in a market system, Lin, Cai, and Li (1998, 1999) propose a different explanation for soft budget constraint syndrome and agency problems associated with public ownership by focusing on external market environment and market disciplines. They argue that the agency problem due to the separation of ownership and control in public firms is not different from that observed in large corporations in the West and can be mitigated by indirect market monitoring rather than direct bureaucratic monitoring. According to modern agency theory, information asymmetry arises when ownership and control are separated; mangers have intimate knowledge of the firm, whereas owners do not. The manager can use that knowledge to improve a firm's profitability or for his own advantage, which may conflict with the interest of the owner(s). Thus, information asymmetry gives rise to agency problems such as moral hazard, insider control, and managerial indiscretion. Diffusion in ownership further weakens each individual owner's incentive to oversee the operation of the firm due to free-rider problems. *Detailed monitoring in large corporations is either impossible or prohibitively costly.* Market competition overcomes information asymmetry by making relative profit rates a reliable summary indicator of the manager's performance. Thus, managerial incentive can be aligned with the owners' interest by linking the manager's compensation and future wages (reputation) with the firm's financial performance (Holmstrom 1982; Fama 1980).

But this mechanism is not working in China's SOEs (Lin, Cai, and Li 1998, 1999). As reform progressed, state-owned firms, especially small local SOEs, were thrown onto the market to compete among themselves and with the TVEs. Intensified competition eroded the monopoly profits of SOEs but did not mitigate the agency problems such as insider control and state asset stripping. The problem is that SOE profits or losses may not reflect managerial competence and effort due to policy burdens such as irrational price control, redundant and retired workers, and bureaucratic intervention. Unable to distinguish policy losses from mismanagement losses, the state had to assume full responsibility. This gave the government rationale to yield to the manager's demand for subsidies and policy loans. Hence the vicious cycle of policy burdens, subsidies, agency problems and bureaucratic intervention. Soft budget constraints and agency costs seem to reinforce each other and aggravate each other's effects. The availability of soft loans leave state-asset stripping unchecked,

while managerial indiscretion and insider control amplified the debilitating and destabilizing effects of soft budget constraints. Without a level playing field, managerial contracts in SOEs did enhance the managers' profit incentive, but they did not align that incentive to a focus on improving efficiency.[11] After all, it was much easier to maximize income by bargaining for more favorable contractual terms and "policy loans" than by improving efficiency and cutting losses. When bargaining became the game rule, even the conscientious managers had to do it just to avoid being left out of the ball game.

If we extend this logic to TVEs, the inference is obvious: TVEs are subject to the harsh disciplines of market competition and few policy burdens. Thus, TVE managers are held accountable for the financial performance of their enterprises. Knowing that they cannot blame anyone or anything for their losses and that they have to sink or swim under market competition, TVE managers focus their attention on streamlining production, cutting costs, and adopting new technology. Managerial contracts in TVEs have resulted in a relatively efficient incentive alignment.

Contrary to the local state corporatist approach, which attributes TVE success to closer bureaucratic monitoring, the market discipline approach would argue that bureaucratic monitoring of managers is not only ineffective given the large corporate size, but it may even be counterproductive because it provides the managers with excuses for making losses and bargaining for subsidies and loans. TVEs are more productive than SOEs because more (not less) managerial autonomy and fuller exposure to market disciplines achieved ex ante incentive alignment. This interpretation is also consistent with the 1991/1992 World Bank survey data that states that TVE managers enjoy far greater autonomy (i.e., less monitoring) than their SOE counterparts (Jefferson, Zhang, and Zhao 1999).

Che and Qian (1998) pointed out that even if product markets are perfectly competitive, an inefficient firm can still survive as long as it faces soft budget constraints. Instead of focusing on internal cross-subsidizing, however, they examined the relationship between local governments and local branches of the state banks to look for sources of soft budget constraints on firms. They noted that as the grassroots levels in

[11] Both Walder (1995) and Lin et al. (1998) argued that nonfinancial objectives and policy burdens (e.g., employment maintenance and welfare provision) constrained the state's ability to enforce financial discipline over SOEs. But their focuses differed somewhat. For Walder, nonfinancial interests made governments dependent upon firms for nonfinancial outputs and increased firms' bargaining power so that the governments could not close down the firm. For Lin et al., policy burdens distorted market competition and worsened information asymmetry between the state and managers so that the state could not tell a good manager from a bad one and therefore could not enforce market disciplines.

the administrative hierarchy, township and village governments did not have any authority over the local branches of the state banks. They could not engage in deficit financing or tap into the seemingly fathomless resources of state banks to finance or refinance unprofitable projects (Che and Qian 1998; Jefferson 1998; Byrd and Zhu 1990). In the 1980s, rural officials were able to influence Rural Credit Cooperatives in their jurisdictions (Whiting 1996). However, these rural credit cooperatives have small funding capacity, limited to local deposits, and have to account for their own losses and gains. While municipal governments had both incentive and ability to harangue local branches of the state bank to pump money into large and bleeding SOEs, township-village governments had neither.

Unlike bank loans, which looked like a "free lunch" both to city governments and to SOEs, internal cross-subsidizing is an increasingly stringent source for bailouts because it does not involve obvious externalities under conditions of fiscal contracting and profit sharing. Profit sharing divided SOE profits into a part handed over to the local government and a part retained by the SOEs. Local state officials are not eager to let go of their share of tax revenue and extrabudgetary revenues, the source of their bonuses, fancy office buildings, and imported cars. Further, these officials do not have legitimate rights over the share of profits retained by the SOEs. None of the money-making SOEs part easily with their retained profits without some form of compensation. When it does occur, "internal cross-subsidizing" usually comes in the form of the "reorganizing and restructuring" of assets (*zichan chongzu*), which may not induce efficiency to the same degree as mergers in the Western market system, but does entail some loss of control on the part of the receivers.

To summarize, if corporate size and scale impair direct monitoring but not indirect market monitoring and if external bank borrowing rather than internal cross-subsidizing is the source for soft budget constraints, then the diseconomy of scale hypothesis is unnecessary. Thus, market discipline approach does not contradict the economy-of-scale hypothesis.

HYPOTHESIS 1b.—*The organizational size and economic scale of industrial corporations at the township-village level do not adversely affect the firm's productivity.*

COMPARING VILLAGE AND TOWNSHIP CORPORATIONS

Even though grouped under the same category, township enterprises and village enterprises differ in many aspects. Most existing empirical analyses (except Svejnar 1990 and Dong and Putterman 1997) simply assume that they are the same and thus overlook many institutional and organizational

differences that are theoretically relevant. Here, I compare village and township enterprises from different theoretical perspectives.

The most important distinction between townships and villages is that the township government is part of the formal state bureaucracy and the village government is not. Township cadres are on the state payroll; village cadres are not. Township heads, appointed by the county government, often come from outside of the township where they hold office (Whiting 1996).[12] Village heads almost always come from within the village; although their appointment has to be officiated by township officials, they do need to have the support of the villagers. The legitimacy of village leaders' power comes from their villagers' support, and the state will not normally remove them as long as they have that support.

In the sense that townships are integrated into the state apparatus, the notion of local state corporatism is applicable here. A typical township government contains three key structures: the Party committee, government office, and a township economic commission that oversees all business activities within the township (see chart in Ho 1994, p. 211). Staff heavily overlap in the three structures, however. In advanced regions like Southern Jiangsu, the township industrial corporation is the most important branch in the economic commission and is usually headed by a party boss. All the township-owned industrial enterprises are under this corporation (Ho 1994; Ma et al. 1994). In the 1980s, most of these corporations adopted profit-sharing contracts with their enterprises. Market competition intensified in the mid-1990s and drove down the profit margins, forcing local officials to switch to the more efficient (and more "private") rental contracts (Zhu 1998).[13]

The picture of the village collective (*cun jiti*) is indeed ambiguous. In Huang's (1993) words, it is a "third realm" where the state and the society interpenetrate and the line between the public and private spheres becomes blurred. In *sunan* villages, the appropriate description ranges from "informally private" (Nee and Su 1996) or "vaguely defined cooperatives" (Weitzman and Xu 1994). On the one hand, property rights are partitioned between the cadre-entrepreneurs who occupy village offices and the residents of the village community. Either entrepreneur-turned-cadre or cadre-turned-entrepreneurs, village leaders control village corporations, which entails private profits and privileges. In return, they promise to

[12] According to my own fieldwork in developed regions, township heads are often college graduates or retired military officers who are placed in township offices for observation and evaluation before further promotion.

[13] In one of my field trips to Jiangyin, I asked about the reason for switching from profit-sharing contracts to rental contracts; the township fiscal auditor said, "How could I know how much profit they [township enterprises] actually made?"

make a profit to share with the villagers, the nominal owners. It is a form of communal ownership.[14] On the other hand, village corporations are informally private in the sense that control is notoriously entwined with family-kinship networks (*jiazhu hua*). Family or kinship organization often blends with, or even superimposes upon the trinity of the Party, the government, and the industrial corporation (Lin 1995, p. 339). Even though no available data indicate the exact extent, researchers frequently run into "collective" corporations in which the main accountant is the wife, daughter, or mistress of the big boss. It is sometimes hard to tell whether it is the village government or the incumbent family that controls the village corporation.

I illustrate the intricate relationship among the state, the village cadre, and the village residents with two examples. Example 1: the most famous village in *sunan*, Huaxi village, built identical track houses for all villagers, with a Santana—a family car made by Shanghai-Volkswagen—in every garage. The houses were allocated in an egalitarian fashion according to the size of households. The party boss, Wu Renbao, who engineered the Huaxi success, had four sons and one daughter helping him to run Huaxi Corporation. Between 1993 and 1997, the township government approved a 0.8-1.6 million *yuan* bonus for Mr. Wu each year. He declined to accept the bonuses, out of modesty or arrogance.

Example 2: the architect of Daqiu village (another famous North China location, near Tianjin, where Nan Lin [1995] did his fieldwork), Yu Zuomin, built an empire around an elaborate network of family, kinship, and personal ties (Lin 1995). Yu was so carried away by his success and power that he got implicated in a murder case and blatantly blocked police investigations. Eventually he was arraigned in court and jailed in 1993. In an obvious attempt to extend state power into the village, the county government decided to upgrade the village to a township with four village divisions and sent in "state cadres" to staff the new township government. According to one of the four village heads, this helped break down the family control of the corporation.

Table 1 highlights the different interpretations of the institutional and performance features of village, township, and municipal enterprises from the three theoretical approaches discussed above. Despite their different characterization of the nature of ownership of TVEs, both the informal privatization and local state corporatist approaches would predict that

[14] Weitzman and Xu (1994) describe the collective TVEs in China as "vaguely defined cooperatives." They emphasize the fact that residents of rural communities are the nominal owners of TVEs and share the profits in the forms of dividends, job opportunities, welfare provisions, etc. They argue that private rights of TVEs need not be well defined because the Chinese can solve their collective problems via a "cooperative cultural tradition" and "mutual trust."

TABLE 1
DIFFERENT THEORETICAL INTERPRETATIONS OF PRODUCTIVITY PERFORMANCE AT THREE LEVELS

	Village	Township	Municipal
Informal privatization:			
Private property rights	Most secure	Less secure	Least secure
Managerial incentive	Strong	Moderate	Weak
Efficiency	Very high	High	Low
Local state corporatism:			
Public property rights	Least attenuated	Attenuated	Most attenuated
Corporate scale	Small	Medium	Large
Bureaucratic monitoring	Strongest	Strong	Weak
Cross-subsidizing	Limited	Moderate	Large
Managerial indiscretion	Limited	Moderate	Large
Efficiency	Very high	High	Low
Market discipline explanation:			
Policy burdens	Few	Few	Many
Market discipline	Harsh	Harsh	Lenient
Access to soft bank loans ...	No	No	Yes
Budget constraints	Hard	Hard	Soft
Alignment of manager's incentive	Aligned	Aligned	Misaligned
Efficiency	High	High	Low

village enterprises should perform better than township enterprises. For the informal privatization approach (Nee 1992; Nee and Su 1996), village enterprises should do better because villages go a lot further on the road of informal privatization. Since the security of property rights correlates positively with the stability of social networks in which these rights are embedded, logically, the social networks in the villages should be more stable than those at the township level, hence the more secure informal property rights for village entrepreneurs.

From the local state corporatist point of view (Walder 1995; Oi 1999), village government's public property rights over enterprises are least attenuated by central regulations and thus most secure (Walder 1995, p. 280). Given the small scale of village corporations, village governments have the greatest ability to supervise the detailed operation of their enterprises and enforce their property rights. Village governments are often merged with enterprise management, and monitoring is very detailed. In such cases village leaders are the general managers and directly control the operation of enterprises—enterprise managers are more like branch heads and have little decision power. Usually the village headquarters controls all profit and expenditure of the enterprises, so that managerial indiscretion and agency costs are less of a problem. Furthermore, village

corporations have the least resources for cross-subsidizing. Thus, either due to more secure private property rights of managers of village enterprises or due to more secure public property rights of village governments.

HYPOTHESIS 2a.—*Village enterprises outperform township enterprises in total factor productivity.*

The market discipline approach, on the other hand, would be consistent with an alternative prediction. Here, ownership form, either public or communal or private, is of secondary importance. Full competition and financial market discipline are most important. Because both township and village enterprises operate under hard budget constraints and compete in the same input and output markets, neither can afford to be less efficient than the other. Therefore, information asymmetry between government and enterprise managers at the township level, presumably more severe than that at the village level, can be remedied by indirect market monitoring and incentive alignment. Empirically, Svejnar (1990) and Dong and Putterman (1997) found similar productivity and technical efficiency between township, village, and private ownership. Peng (1992) reported that township and village/private enterprises were governed by a similar wage determination equation different from that in the urban state sector. Thus, we have a competing hypothesis:

HYPOTHESIS 2b.—*Village and township enterprises do not differ significantly in terms of productivity.*

DATA AND VARIABLES

The site of this research is Jiangyin in the Southern Jiangsu region. Changshu, Jiangyin, Wuxi, and Zhangjiagang made up the vintage "Southern Jiangsu model" (*sunan moshi*). The four adjacent county-level cities had an early start to rural industrialization in the 70s and are now ranked highest in rural industrial output per capita in China. They shared similar institutional and policy environments, with city governments playing the role of a developmental state, township-village governments actively engaging in setting up and managing rural enterprises and private entrepreneurial activities discouraged until 1994. Although Jiangyin's experience with rural industrialization cannot be see as a generalization of the whole country, it is certainly representative of the *sunan* model.

The data set used here comes from the 1993 original statistical reports to the Jiangyin municipal bureau of industry and municipal bureau of TVEs. It covers all industrial enterprises at the municipal, township, and village level within the city. Table 2 provides summary information about the data set. According to table 2, the original data set contains records of 3,478 enterprises, out of which 56 are owned by the municipal gov-

TABLE 2
DESCRIPTIVE DATA, LOCAL GOVERNMENT CORPORATIONS, JIANGYIN, CHINA, 1993

	Village	Township	Municipal	Total/ Average
Administrative units	489	31	1	521
	(537)	(31)	(1)	(569)
Total *N* of enterprises	2,143	819	52	3,014
	(2,534)	(888)	(56)	(3,478)
N of enterprises per corporation	(4.7)	(28.6)	(56)	(6)
Sales income per enterprise	3,870,000	14,784,000	54,091,000	7,702,000
Fixed asset per enterprise	835,000	3,293,000	19,951,000	1,833,000
N of employees per enterprise	56	192	676	104
Fixed asset per worker	14,900	17,150	29,500	17,600
Sales income per worker	69,100	77,000	80,000	74,060
Wage per worker (yuan)	3,160	3,270	4,750	3,390

NOTE.—Except for administrative units and total *N* of industrial enterprises, amounts shown are averages. Figures in parentheses are raw data before cleaning.

ernment, 888 are rural industrial enterprises owned by 31 township governments (including 1 suburban district), and 2,534 are owned by 537 village governments (including 10 village level units). Excluding 412 enterprise with missing values and 52 cases with inconsistent data or extreme values, 3,014 enterprises nested under one municipal, 31 township, and 489 village governments are retained for the following analysis.[15] Forty-eight villages are excluded from analysis either because no valid enterprise record remains after data cleaning or because the whole village is recorded as a single firm, when the "firm" apparently consisted of a number of enterprises. For instance, none of the 29 villages in the township of *zhouzhuang* reported any labor or wage data on its 133 village enterprises and therefore all were removed.

Because they own and operate enterprises, village, township, and city governments are simultaneously administrative organs and industrial "corporations." Thus defined, there were 569 distinct industrial corporations in Jiangyin in 1993 (each village in Jiangyin reported at least one enterprise). Even though, administratively, village governments are nested under township governments, a township "corporation" does not include

[15] The process of data cleaning follow these step: first, 27 observations were deleted for missing output values; second, 319 cases deleted for missing capital asset or labor or both; third, 66 cases were deleted for missing industrial codes; fourth, 29 cases were deleted due to data inconsistency; and finally 23 extreme regression outliers were thrown out. The total number of bad cases is 464.

enterprises owned by villages within the township jurisdiction. Similarly, the city corporation does not include enterprises owned by townships.[16]

The administrative hierarchy is, nevertheless, important. Consistent with Walder's (1995) observation, the size and scale of these corporations increases as we move up the administrative hierarchy. On average a village corporation owned about 4.7 enterprises; a township corporation owned about 29 enterprises; and the city government operated 56 factories. The average size and scale of individual enterprises in terms of capital asset, labor, and output also increase as we ascend the administrative ladder. But note that the average wages in village and township enterprises are similar, while both are substantially lower than that in city-owned enterprises. These figures are consistent with published statistical data (Jiangyin Yearbook Committee 1993, pp. 130, 416).

Measurement

The original data set contains both enterprise records and records for township-village subtotals. Highly detailed checking was carried out to ensure the quality of the data. Reported township-village subtotals were generally consistent with those computed from enterprise level data. In the few cases where village subtotals were not reported, computed sums were substituted. To ensure reliability, three measures of output were used: gross value of output, sales income, and value added.

Enterprise-Level Variables

Gross value of output is the total value of output (before sales), including the value of material inputs, measured at 1993 market price. *Sales income* is the gross income after sales, excluding output value in the storage

[16] My definition of local state corporatism here differs from Oi's (1999, p. 103) view of the whole jurisdiction of a county as a corporation, with county government as the headquarters and townships and villages as divisions and subsidiaries. Thus defined, the county corporation would include all the village and township enterprises. My definition of local state corporation uses a strict ownership criterion. The county government does not own the township or village enterprises in any real sense of word because (1) it does not have any claim over their residual income except collecting local taxes, and (2) it is not involved in the management and disposal of those assets. A county government does indeed oversee all business activities (even the private ones) in its jurisdiction to make sure that they fall within the legal and policy boundaries and sometimes, if requested, may even help some large TVEs to obtain bank loans, technology, and market information. But this is more administrative supervision than corporate control. Township governments collect a small management fee from village enterprises, usually no more than 1% of the net profits. They are not residual claimants of village enterprises, as they are of township enterprises, in the sense of profit sharing or capital charges.

inventory.[17] *Value added* is the net value of output before sales, excluding the cost of material inputs, measured at the 1993 market prices.[18] *Capital* is the net value of all fixed assets at current prices. In some cases where the net asset value is missing but the original asset value available, the latter is substituted after depreciation according to village or township average depreciation rate. *Labor* is the average number of employees in the enterprise for the whole year. If this value was missing, the year-end figure was used if available. *Average wage* is the total wage bill (including bonuses) divided by the total number of employees. Most TVEs use a piece-rate wage system and do not tie labor pay with profits. Thus, average wage is a good proxy for the labor quality and labor cost. *Industrial sector* is obtained using information on major products, equipment, and factory names. It is first coded into the Chinese standard two-digit classification of industries (Sun, Wang, and Li 1994) and then regrouped into (1) food processing, textile, and garments, (2) chemical, (3) metallurgy, (4) manufacturing, (5) construction, transportation, and utilities.

Corporate-Level Variables

Corporate administrative level refers to the public ownership at the village, township, and (county) municipal levels. *Corporate number of firms* refers to the number of enterprises owned by the same village, township, or municipal government (according to counting before data cleaning). *Corporate employment size* refers to the total number of employees of all industrial enterprises within the same village, township, or municipal jurisdiction. *Corporate capital assets* refer to the total capital assets of all industrial enterprises within the same village, township, or municipal jurisdiction.

METHODS

Multilevel analysis is needed for exploring the effect of corporate level characteristics on firm performance. Ordinary least square regression is inappropriate in this case because (1) firms within the same corporation

[17] Twenty-eight otherwise valid observations have missing values for sales income. Using conditional mean imputation methods described in Little and Rubin (1987), I estimated their log sales income according to the following regression equation: $\log(\text{sales income}) = -0.093 + 0.985 \times \log(\text{gross value output})$, with $R^2 = 0.946$ and $N = 2{,}910$.

[18] I recalibrated the value-added if the ratio of the originally reported value-added over gross output value was less than 5% or more than 95%, according to the following equation: $\log(\text{value added}) = -1.13 + 0.93 \times \log(\text{gross output value})$, with $R^2 = 0.865$ and $N = 2{,}676$. I recalibrated 371 cases this way

are inherently clustered, that is, subject to the same disturbance; and (2) treating corporate level variables as the same as firm-level variables inflates the number of observations. Both situations would lead to an underestimation of standard errors in OLS. Thus, I specify the following multilevel models.

$$\ln y_{ij} = A_j + \beta \ln k_{ij} + \gamma \ln l_{ij} + \lambda \ln w_{ij} + \sum_{k=1}^{N} \eta_k s_{kij} + \varepsilon_{ij}, \tag{1a}$$

$$A_j = \alpha + \mu C_j + \nu T_j + u_j. \tag{1b}$$

In equation (1a), y_{ij} stands for per worker gross value output or sales income or value added of the ith firm in the jth corporation ($i = 1,2,3, \ldots, n$ and $j = 1,2,3, \ldots, 518$); k_{ij} for capital input per worker; l_{ij} for total number of employees; w_{ij} for average wage; s_{kij} stands for a set of dummy variables of industrial sectors with $k = 1,2,3,4$. As specified, the coefficient for labor indicates return to scale. With a constraint $\gamma = 0$ (i.e, constant returns to scale), this would conform to the standard Cobb-Douglas production function. A_j in (1a) is an intercept, indicating total factor productivity in this case. Its subscript suggests that it is a random effect and varies from corporation to corporation. Equation (1b) specifies it as a function of corporate administrative levels. C_j and T_j in (1b) are dummy variables for county ownership and township ownership, respectively. Both the enterprise-level error term ε_{ij} and corporate-level error term u_j are assumed to be normally and independently distributed. The variance of u_j captures the residual correlation within the same corporation.[19]

To explore the impact of corporate size and scale on enterprise performance, we only need add a few more contextual variables to (1b).

$$\ln y_{ij} = A_j + \beta \ln k_{ij} + \gamma \ln l_{ij} + \lambda \ln w_{ij} + \sum_{k=1}^{N} \eta_k s_{kij} + \varepsilon_{ij}, \tag{2a}$$

$$A_j = \alpha + \mu C_j + \nu T_j + \phi \ln N_j + \theta \ln K_j + \pi \ln L_j + u_j. \tag{2b}$$

N_j in (2b) stands for number of enterprises in the jth corporation; the upper case K_j for total capital assets; L_j for employment size (i.e., total

[19] This will become apparent if we combine the fixed and random components into a single equation. Substituting (1*b*) into (1*a*), e.g., would give

$$\ln Y_{ij} = \alpha + \mu C_j + \nu T_j + \beta \ln k_{ij} + \gamma \ln l_{ij} + \lambda \ln w_{ij} + \sum_{k=1}^{N} \eta_k s_{kij} + u_j + \epsilon_{ij}.$$

Thus, the total disturbance of the ith firm in the jth corporation would be $eij = uj + \epsilon ij$. Thus, for any two firms in the jth group, $\mathrm{cov}(e_{ij}, e_{kj}) = \mathrm{cov}(u_j + \varepsilon_{ij}, u_j + \varepsilon_{kj}) = \mathrm{cov}(u_j, u_j) + \mathrm{cov}(u_j, \varepsilon_{kj}) + \mathrm{cov}(\varepsilon_{ij}, u_j) + \mathrm{cov}(\varepsilon_{ij}, \varepsilon_{kj}) = \mathrm{var}(u)$.

industrial labor force). Both equations (1a–1b) (model 1) and equations (2a–2b) (model 2) are estimated via the restricted maximum-likelihood method in SAS/PROC MIXED procedure (see Singer 1998; Kreft and de Leeuw 1998).

FINDINGS

Models 1 and 2 are estimated for gross value of output, sales income and the value added, and the results are presented in table 3. All three measures of output yield similar coefficient estimates, indicating that the results are robust against differences in measurement.

The following four findings in table 3 should be noted. First, consistent with previous studies, TVEs show a higher total factor productivity than municipal SOEs. In all six equations, TVEs generate more output, sales income, and value added than do local SOEs with the same amount of capital and labor inputs. Due to the small sample size of SOEs in this study, the productivity differential is only significant in two out of six equations.

The observed productivity differential should be qualified on two fronts. On the one hand, SOEs have technological advantages over TVEs. The finding of superior productivity of TVEs implies that SOEs' superior technology and technical personnel do not transpire into greater productivity. As shown in table 2, SOEs have a much higher capital-labor ratio than the TVEs in Jiangyin. According to Lin, Cai, and Li (1996), TVEs tend to employ labor-intensive technology that reflects the comparative advantages of China's resource endowments. Even though SOEs have higher output per worker, TVEs use capital more efficiently and have higher total factor productivity. On the other hand, SOEs may have some "unfair" disadvantages, primarily in terms of redundant workers and unproductive investment (like housing). Jefferson (1999), for instance, found that the total factor productivity of TVEs (in 1990) was higher in all but one out of seven industrial sectors than that of SOEs. The differential disappears after controlling for not only nonproductive investment in housing, but also institutional variables such as the level of supervision, proportion of self-marketing, management system, and commitment of collateral by managers, and so on.

Second, either with or without controlling for corporate size and scale, village enterprises do not outperform township enterprises in productivity, except model 1 for sales income, in which township enterprises better village enterprises. I have argued that local state corporatism correctly describes township-owned enterprises, and informal privatization is probably a more appropriate description of village-owned enterprises. Thus,

TABLE 3

MULTILEVEL PRODUCTIVITY ANALYSIS OF VILLAGE, TOWNSHIP, AND MUNICIPAL ENTERPRISE, JIANGYIN, CHINA, 1993

	LOG GROSS OUTPUT VALUE PER WORKER		LOG SALES INCOME PER WORKER		LOG VALUE ADDED PER WORKER	
	(1)	(2)	(1)	(2)	(1)	(2)
Intercept	4.061***	3.222***	3.039***	2.399***	2.317***	1.409***
	(17.3)	(9.81)	(12.4)	(7.29)	(10.1)	(4.29)
Enterprise level:						
Log capital-labor ratio	.331***	.318***	.335***	.323***	.283***	.272***
	(25.0)	(22.9)	(24.1)	(22.0)	(21.9)	(20.1)
Log labor	.030*	.018	.035*	.027	.012	−.005
	(2.14)	(1.15)	(2.41)	(1.66)	(.91)	(−.32)
Log average wage	.488***	.480***	.577***	.569***	.572***	.565***
	(17.6)	(17.2)	(19.9)	(19.6)	(21.1)	(20.8)
Industry:						
Chemical	−.102*	−.099*	−.088	−.084	−.094*	−.091*
Light	−.153***	−.155***	−.198***	−.197***	−.190***	−.193***
Machinery	−.158***	−.157***	−.110*	−.109*	−.086*	−.086*
Material (metallurgical)	−.552***	−.549***	−.430***	−.427***	−.269***	−.269***
Corporate level:						
Municipal	−.387	−.663*	−.219	−.446	−.226	−.715*
	(−1.23)	(−1.99)	(−.78)	(−1.47)	(−.68)	(−2.05)
Township (village)	.031	−.127	.122*	−.012	.120	−.171
	(.48)	(−1.21)	(2.05)	(−.12)	(1.78)	(−1.60)
Log capital		.090**		.072*		.069*
		(2.83)		(2.30)		(2.18)
Log employment		−.033		−.036		.033
		(−.68)		(−.74)		(.69)
Log N of enterprises		−.036		−.007		−.032
		(−.82)		(−.17)		(−.73)
−2 REML log likelihood	6,764.6	6,765.8	7,049.6	7,055.8	6,626.1	6,620.7
AIC	−3,384.3	−3,384.9	−3,526.8	−3,529.9	−3,315.1	−3,312.4

NOTE.—N = 3,014.

* $P < .05$; **$P < .01$; ***$P < .001$.

the fact that township enterprises are equal in productivity to village enterprises and superior to urban SOEs suggests that ownership form—public or communal or private—is not an overriding factor in the performance of China's rural industry, at least not at the stage under discussion. Privatization may be the best solution to efficiency, but a large efficiency gain is feasible within decentralized government ownership.

Third, the size and scale of village and township industrial corporations do not seem to affect productivity adversely. The coefficients for the number of enterprises in corporations and total size of workforce are insignificant across the board. The corporate total capital stock seems to have a consistently positive, albeit small, effect on the productivity of individual TVEs. Figure 1 visualizes the relationship of total factor productivity in output value and corporate size and scale. I refrain from theorizing about the increasing return to the corporate total assets. It suffices here to conclude that the organizational size and economic scale of local government corporations does not adversely affect productivity. This leaves policy burdens, market disciplines, and access to bank loans the most likely factors explaining the differential productivity between TVEs and SOEs.

Last, please note that the coefficients on labor are generally positive except for model (2) of value added, which yields an insignificant negative estimate. Given the way the production function is defined in (1a) and (2a), a positive coefficient on labor indicates a slightly increasing return to scale at the enterprise level. As constant or slightly increasing return to scale is expected of such kind of data, the result should also be taken as an indication of data quality.

CONCLUSION AND DISCUSSION

Even though the superior productivity performance of TVEs over SOEs is not a new finding, my analysis has made three contributions: (1) the use of local government (corporation) characteristics as contextual variables; (2) the finding of increasing returns to corporate scale; and (3) the finding of similar performance between enterprises owned by township governments and those owned by village governments. I conclude that these findings are consistent with the market discipline approach, which emphasizes incentive alignment under fully enforced labor, product, and financial market disciplines.

Accordingly, I offer two revisions of Walder's (1995) argument. First, TVEs had fewer agency problems, not due to more effective direct bureaucratic monitoring, but due to more effective indirect market monitoring. When ownership is separated from control, information asymmetry renders direct monitoring ineffective or prohibitively costly. But market

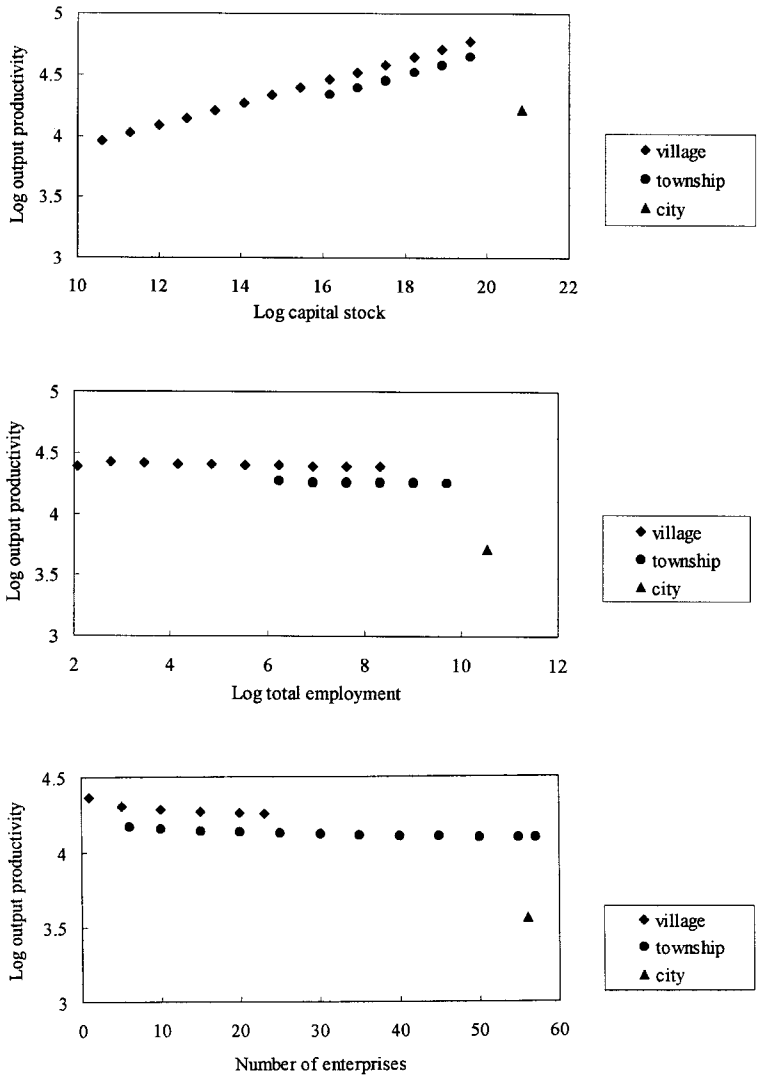

FIG. 1.—The relationship of estimated total factor productivity with the economic scale and organizational size of village, township, and city industrial corporations (Jiangyin, China, 1993). The plots are based on $\ln TFP = 3.222 - .663C - .127T + .09 \ln K - .033 \ln L - .036 \ln N$, where C stands for city, T for township, K for total capital stock, L for total labor force, and N for number of enterprises, with industry set to metallurgy; K, L, and N are replaced by their respective average in rotation.

monitoring did not work for SOEs because they were not placed on a level playing field and shouldered idiosyncratic policy burdens. Second, local government's *external* borrowing power from the state bank better explains the softness of budget constraints on SOEs. Internal cross-subsidizing within the local state corporations is probably limited and more calculated when it happens.

Public ownership entails potential externality because it is nonexcludable (too many residual claimants taking too much) and nondiminishable (i.e., losses are replenished by fiscal or financial subsidies). As Jefferson (1998) points out, privatization is neither a sufficient nor a necessary condition for eliminating public enterprise externality; hardening budget constraints (cutting off fiscal/financial subsidies) is a necessary but not sufficient condition. Privatization may be the best remedy, but it was neither feasible in China during the 1980s given the general legal and political environment, nor was it viable in the absence of a well-functioning property rights market. Partitioning of property rights between the central state and various levels of local governments enhanced profit incentive but ushered in agency problems that could have worsened excludability problems. The reform experience of public enterprises at different levels represents a whole spectrum of responses depending on how diminishable the public assets are and how rivalrous their consumption is.

On the village level, collective enterprises are definitely diminishable and have natural excludability due to the clear boundaries of villages. An efficient solution depends on whether village residents and village leadership (party boss, village head, and enterprise managers) can work out some form of income sharing arrangement, based not on legally defined private ownership, but on the informal institution of mutual trust. Villages with a strong collective spirit will have an advantage. On this account, I agree with Nee's argument of informal privatization and Weitzman and Xu's characterization of "ambiguously defined cooperatives." But it is a bit farfetched to argue that the collective spirit comes from a "cooperative tradition" in Chinese culture. Confucianism teaches loyalty among family and kinship members but not trust of strangers or respect for contracts with them. I suggest that collective spirit can only come from two sources: strong kinship networks that may have survived communist rule (Huang 1993) and socialist collective legacy that survived agricultural decollectivization in some regions in China, where rural industrialization had an early start in the 1970s.

On the township level, informal privatization or cooperative solution is not feasible because, first of all, the township government is more integrated with the state bureaucracy than with local community. Second, the nominal ownership by all the township residents is too diffuse to

exercise any monitoring function or to directly benefit from township industries—besides through public facilities and better employment opportunities. Income-sharing agreements between the township leadership and the residents are untenable. Under such conditions, local state corporatism became a viable alternative in which a combination of local government property rights and hard budget constraints succeeded in aligning the incentive of public officials to market-oriented growth-promoting behavior. The experience of township industrial corporations suggests that public ownership externality can be reduced by strengthening labor, financial, and product market disciplines.

As SOEs gradually grew out of the plan in the early 1990s, they competed fiercely with each other and with the TVEs. They could afford to be inefficient and unprofitable for the time being because they still enjoyed subsidies and faced weak financial disciplines. The situation has been changing since the second half of the 1990s. The banking reform in 1996 severed ties between the state bank branches and local governments. By 1996 the lifetime job security for Chinese urban workers was as good as gone (Rawski 1999, 145). We can only speculate as to whether large SOEs could acquire the ability to survive on their own in market competition by following in the footsteps of TVEs.

History may have vindicated Nee's market transition theory (Nee 1991, 1992, 1996) and other convergence theories (e.g., Sachs and Woo 1997), when in 1997 the Fifteenth Congress of the Chinese Communist Party proclaimed that private ownership is an important component of "socialist" market economy. The Chinese institutional innovation represented by *sunan moshi* is to become a fond memory of experimentalists and market socialists. With the recent wave of privatization sweeping China, even the officials in Southern Jiangsu are no longer proud of the label *sunan moshi* and actually shy away from it. The new policy regarding public enterprises is to retain the large and "let go" (privatize) the small (most of which are already insolvent or on the brink of bankruptcy). The glory of *sunan moshi* will soon fade in the memory of politicians, but its institutional legacy may linger in the reflective minds of academia for some time to come.

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