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The Decline of Township-and-Village Enterprises in China's Economic Transition

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Summary. — A paradoxical phenomenon in China's transitional economy is that markets developed under predominant public ownership, which nevertheless has declined with the development of markets. Previous studies reveal that initial political and economic conditions of reform and fiscal decentralization gave rise to local public enterprises' leading role in early marketization. This paper explains the subsequent fall of such a role. Building and expanding on recent studies of privatization, we argue that market development and competition have constrained the abilities of local public enterprises to address revenue and employment imperatives, whereas local governments' sales-oriented growth strategies have exacerbated governance problems. Panel data are analyzed to provide provisional test of pertinent hypotheses.

Key words — property rights, fiscal revenue, employment, governance problem, China, Asia

1. INTRODUCTION

A notable phenomenon in the developing world during the past three decades is sustained economic growth in China. Not only has China achieved an average annual rate of GDP growth of more than 9% during 1978–2005, what is more noteworthy is that such growth was in large part achieved under predominantly *public* ownership as the economy underwent a transformation from central planning to markets. This contrasts sharply with unsuccessful market reforms under public ownership in pre-1989 Eastern Europe (Kornai, 1990; Winiecki, 1990) and, more generally, with the conventional view that private ownership is essential for achieving robust economic growth through market-oriented economic activities (e.g., Alchian & Demsetz, 1972; Sachs & Woo, 1994).

The leading force of China's departure from central planning came from market-oriented public enterprises under the purview of local governments. These enterprises, known as township-and-village enterprises (TVEs), experienced a significant expansion in the 1980s and early 1990s. The rather extraordinary process of marketization initially led by these enterprises has attracted considerable scholarly endeavors to account for the driving forces at work. Four explanations figure most prominently.

First, the political institutional environment favored market-oriented public enterprises during the early years of reform, when private businesses faced severe restrictions and discrimination in resource mobilization and regulatory treatment (Chang & Wang, 1994; Che & Qian, 1998; Li, 1996; Tian, 2000). Second, fiscal decentralization introduced in the early 1980s both granted greater decision-making autonomy to local governments and forged a close link between fiscal revenue growth and the financial and career rewards for local officials. These changes created strong incentives for local officials to mobilize and/or use large amounts of human, financial, and physical resources to promote the growth of public enterprises under their purview (Byrd & Lin, 1990; Chen & Rozelle, 1999; Oi, 1992, 1999;

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Putterman, 1993; Walder, 1995; Whiting, 2000). Third, the exceptionally strong pent-up demand for a whole gamut of products (especially consumer goods) at the end of the Maoist era (1949–76) provided abundant profit-making opportunities for enterprises operating outside the scope of central planning. This led to massive entry of firms and fierce competition, creating an institutional environment that hardened the budget constraint of the participating enterprises and thereby rendered their operations more efficient than SOEs then still operating under central planning (Naughton, 1995; Peng, 2001; Rawski, 1994; Wong, 1988). Finally, the hardened budget constraint of TVEs notwithstanding, their decade-long explosive growth was in part fueled by massive loans from the state banking system—often times on rather soft terms (Brandt, Li, & Roberts, 2005; Che & Qian, 1998; Park & Shen, 2003), whereas their private counterparts were systemically denied access to such credit (Tsai, 2002).

Just when TVEs were arousing curiosities that motivated the analyses highlighted above, two significant changes began to unfold in the past decade. First, the government gradually relaxed restrictions on the private sector. Second, large numbers of public enterprises—including TVEs—have been either privatized or turned into shareholding entities that are increasingly dominated by private owners (Garnaut, Song, Tenev, & Yao, 2005; Garnaut, Song, Yao, & Wang, 2001; Li, 2003; Li & Rozelle, 2003; Lin & Zhu, 2001; Yusuf, Nabeshima, & Perkins, 2005). The result has been a steady decline of the relative significance of public ownership in the economy. Figure 1 provides a clear illustration of this trend in the rural non-farm sector.

These dramatic changes in property rights raise interesting questions pertaining to the role of ownership in economic transformation and the explanations for the phenomenal rise of TVEs in the absence of adequate private property rights institutions. During the 1980s and early 1990s, these public enterprises demonstrated two important organizational features—political legitimacy and accommodation of key public policy agendas on *revenue growth* and *job creation* (Jin & Qian, 1998), both of which are considered to be crucial for institutional stability (Hannan & Freeman, 1989; North, 1990; Scott, 2001). Why did such features fail to perpetuate the dominance of public ownership? If political constraints had posed a major obstacle to private economic activities in the early years of reform, how and why did such an obstacle become weakened subsequently? If fiscal incentives and competition combined to substitute for a lack of private ownership in fueling the initial growth of these market-oriented public enterprises, what has undermined the staying power of such an effect and led to massive privatization?

This paper seeks to address these questions. The point of departure is a recent and growing body of studies on the driving forces of privatization in China (for a brief summary see Guo & Yao (2005)). The common focus of these studies is the changing institutional environment of economic activities. They show that market lib-

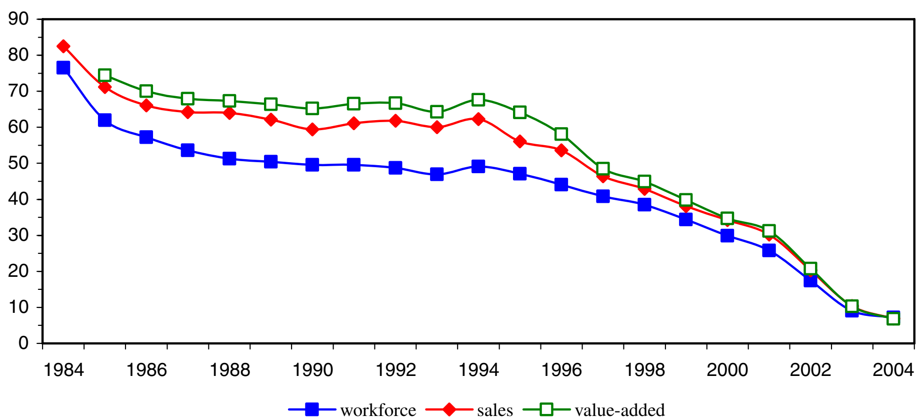

Figure 1. *Relative significance (%) of public enterprises (TVEs) in the rural non-farm sector, 1984–2004. Sources: Township Enterprise Yearbook (1987–2005), Statistics of Township Enterprises (1978–2002).*

eralization and development (e.g., Guo & Yao, 2005; Jin & Qian, 1998; Li, 2003), banking reforms (e.g., Brandt *et al.*, 2005), and hardening of government budget constraints (e.g., Li, 2003) are important factors for understanding why large numbers of public enterprises have been converted into private entities since the mid-1990s.

Expanding on these insightful findings, we examine two related issues that need to be further explored. First, as noted above, the growth of China's private sector has been the result of both privatization of public enterprises and gradual relaxation of government restrictions on genetically private economic entities. What accounts for the latter? Second, given their clear and strong market orientation in the early years of reform, what has rendered local public enterprises like TVEs so vulnerable that they could no longer survive in an improved institutional environment for markets?

We argue that investigating the internal contradictions generated by the dynamics of TVEs' development holds a key to addressing these questions. The gist of our analysis is that while the fiscal revenue sharing system introduced in the early years of reform provided exceptionally strong incentives for local officials to develop the economies under their jurisdiction, it failed to align cadres' interests with the goal of profit maximization, as would be the case under private ownership. Instead, the new fiscal incentive system tied the career and financial interests of local officials to various broad development gauges such as employment, fiscal revenue, and per capita income or output growth. Second, the new revenue sharing system was structured in such a way that the fiscal autonomy of the local state depended crucially on revenues generated from sales (transaction) tax, a design that "skewed" local officials to maximizing sales rather than profit growth, which for more than a decade was made possible by easy access to bank loans. As market opportunities became more fully exploited and credit policies tightened—partly due to banking reforms in the 1990s, "super-normal" sales margin became unsustainable. This handicapped the capacity of TVEs to generate both fiscal revenues and local off-farm employment. A point was eventually reached where the marginal fiscal revenue obtained from further enterprise expansion simply failed to justify the effort to do so.

The intensification of competition was not the only reason behind the deteriorating performance of TVEs, however. [1] As the number of public enterprises under the managerial purview of a local jurisdiction increased and as the non-residual claiming enterprise managers played an increasingly important role in enterprise performance but were not remunerated accordingly, "opportunistic behavior" resulted, which increased monitoring costs sharply, undermining the sustainability of TVE growth.

If the foregoing analysis closely approximates the reality, the compounding nature of the problems just diagnosed has the likely effect of forcing the state to rely more on the private sector—through massive privatization, removal of erstwhile restrictions on private sector activity, or both—for addressing revenue and employment imperatives. It is from this vantage point that we view the growing predominance of private enterprises in China's rural economy not only as resulting from improvement in the institutional environment but perhaps equally importantly as stemming from responses to the unintended, cumulative impact of the development of both public enterprises and markets in the early years of reform, and the internal contradictions embedded in such a development process.

The remainder of the paper is organized as follows. Section 2 discusses inherent contradictions in the process of marketization led by TVEs. It shows how the new fiscal incentive scheme drove, with the aid of credit mobilized from the state banking system, the "excessive" expansion of TVEs and how that expansion unwittingly contributed to growing fiscal and job-creation pressures at the local government level and worsening monitoring efficacy at the enterprise level, consequently leading to the trend toward private ownership. Based on this discussion, Section 3 lays out several hypotheses about the effects of four major factors that reversed the initial predominance of public ownership—fiscal pressure, job creation imperative, credit injection, and governance problems—on the varying paces of different provinces in the movement toward private ownership during 1987–98. This is followed by a description of the method and data used to test the hypotheses. The results of data analysis, which in the main provide provisional support to our hypotheses, are discussed in Section 4. Section 5 summarizes the findings and discusses their implications for the theory of property rights in the context of economic transition and development.

2. UNINTENDED CONSEQUENCES OF MARKETIZATION LED BY LOCAL PUBLIC ENTERPRISES

Because of their critical importance to the communist state's ability to govern, fiscal revenue and employment have always occupied a central place in the Chinese government's development strategy. It was partly because of the growing difficulties in addressing these imperatives under the central planning system that Chinese leaders decided to embark on the process of market-oriented reforms in the late 1970s (Perkins, 1988; Riskin, 1988). Unlike that in the former Soviet-type economies with much higher degrees of urbanization, however, a major driving force of marketization in post-Mao China has come from rural non-farm enterprises, which were once an insignificant element of the centrally planned economy (Naughton, 1995; Woo, 1999). Until the mid-1990s public enterprises owned by township and village authorities were the leading segment of rural non-farm enterprises. This development was not only consistent with the communist leadership's goal of building a market-oriented economy while maintaining the core economic institution of socialism—public ownership, it was also associated with the abilities of TVEs to contribute to revenue growth and job creation during the early years of market reform (Jin & Qian, 1998).

Figure 2 shows that from 1978 to 1999 when massive privatization engineered by the central government began, TVEs achieved steady growth in tax revenue. A similar trend (ending slightly earlier) in job creation can be seen from Figure 3. However, Figures 2 and 3 also show some concurrent developments that became increasingly pronounced into the 1990s. Tax revenue per unit of sales declined, so did profit rate. The jobs added by TVEs could not even keep pace with the number of new rural workforce entrants—that is, non-continuing graduates from rural junior and senior high schools, not to mention absorbing the previously un(der)employed and those already in the rural workforce who switched from farming to non-farming activities. What these developments indicate is that TVEs' initially leading role in revenue generation and job creation became increasingly difficult to sustain. It is not surprising that the government has had to rely increasingly on the private sector to address the resultant inadequacies and to get rid of those TVEs that had poor or deteriorating financial performance (Kung, 1999; Li, 2001; Li & Rozelle, 2004; Lin & Du, 1997).

What then led to the growing difficulties among TVEs? To address this question, it is

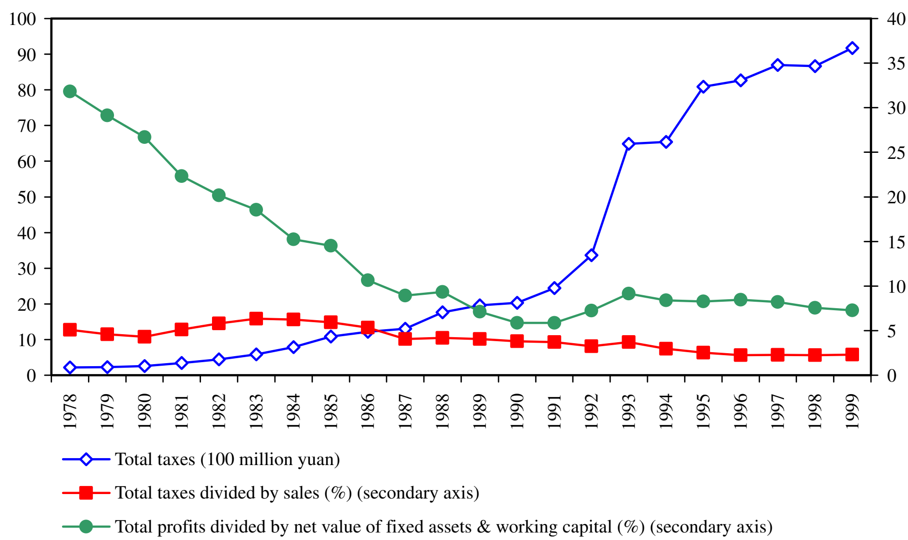

Figure 2. *Fiscal and financial performance of TVEs, 1978–99.*
Sources: Township Enterprise Yearbook (1987–2005), China Statistical Yearbook (1986–99), Statistics of Township Enterprises (1978–2002).

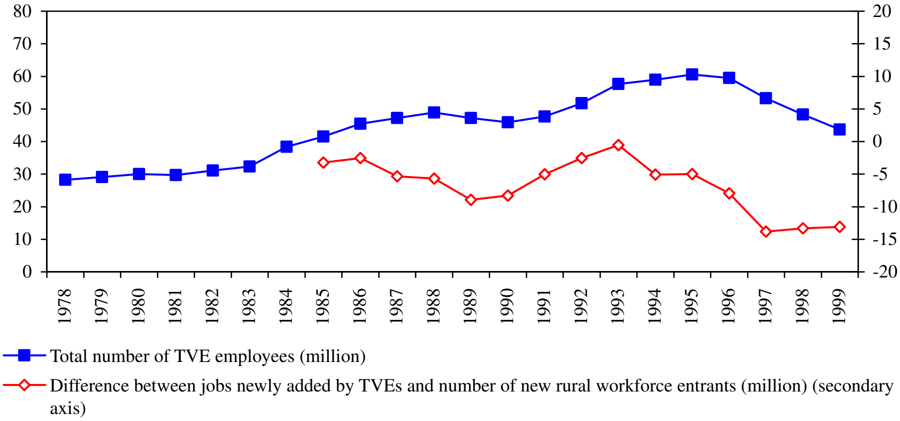

Figure 3. *Job creation performance of TVEs, 1978–99.*
Sources: Township Enterprise Yearbook (1987–2005), Statistics of Township Enterprises (1978–2002), Yearbook of China's Education (1984–2000).

important to examine the drivers, strategies, and consequences of TVEs' early development. As highlighted in Section 1, previous studies reveal that a major motivating force for local authorities' active involvement in the promotion of TVEs came from fiscal decentralization in the early 1980s (Jin, Qian, & Weignast, 2005; Montinola, Qian, & Weignast, 1995). The new fiscal incentive system, however, was a double-edged sword. While it provided powerful incentives and means for local officials to develop the economies under their jurisdictions, the focal emphasis on fulfillment of revenue targets for career prospects and fiscal autonomy predisposed them toward maximizing tax revenues and those "key development indicators" (most notably per capita income and non-farm employment growth) that had a direct bearing on their career and fiscal interests (Jin & Qian, 1998; Li & Zhou, 2005).

An important fact about the tax revenue generated by TVEs is that a large part of it came from transaction taxes based on sales revenues rather than enterprise income tax based on gross profit. During 1985–98, for example, enterprise income tax on average only made up 25% of the total taxes paid by TVEs (NBS, 1986–99). To fulfil their revenue obligation, therefore, local officials sought to maximize the sales rather than the profits of TVEs. The contrasting trends of rising taxes and declining profit rate and tax revenue per unit of sales illustrated in Figure 2 suggest that intensifying the efforts to expand sales was most likely the main avenue for TVEs to increase their tax contributions, even at the expense of enterprise profitability. That undertaking was most expediently achieved via enterprise expansion under a multidivisional structure likened to Alfred Chandler's M-form (Che & Qian, 1998; Qian & Xu, 1993), which concurrently also helped address the job creation imperative. Moreover, the transient nature of local officials' tenure further fueled this particular proclivity during the term of their appointment, since any long-term, potentially adverse effects of this strategy were basically deferred (Whiting, 2000).

To promote the growth of TVEs based on sales expansion, local authorities provided extensive financial support by mobilizing and/or channeling credit from the state-owned banking system (Brandt & Li, 2003; Che & Qian, 1998; Park & Shen, 2002; Tsai, 2002). In 1995, for example, bank loans accounted for 64% of all the credit incurred by TVEs (EO, 1996, p. 101). Although state banks were not controlled by local governments, [2] the latter could still use their political power to influence local banks' lending decisions (Che & Qian, 1998). [3] It is therefore not surprising that in 1993 when the statistical authority began to publish systematic information about enterprise assets and liabilities, TVEs had an overall debt-equity ratio of 1.78 (EO, 1994, p. 104).

While the sales-driven growth strategy might have worked in the early years when shortages were widespread, competition was still limited, and credit was relatively easy to obtain, continuing expansion under conditions of demand saturation and intensified market competition could only be achieved at diminished profit rates, [4] lower total tax revenue per unit of sales (mainly due to a concurrent decline in enterprise income tax), and growing cumulative debts. Slowed pace of enterprise expansion amidst these difficulties also constrained the pace of job creation. [5] Interestingly, it was the early growth of TVEs that opened way for market development and intensification of competition (Naughton, 1994, 1995). Moreover, early marketization in industry, agriculture, and commerce created impetus for reforms to unfold in the banking sector during the 1990s, which resulted in a gradual tightening of credit extended by state-controlled financial institutions (Brandt & Li, 2003; Park & Shen, 2002). In the meantime, the initial lending of soft loans to TVEs had, in addition to accumulating debt on the part of TVEs, led to the accumulation of non-performing loans for the banks and intensified the pressures on banks to change their policies toward TVEs and on local governments to reduce their financial liabilities by privatizing public enterprises with heavy non-performing loans (Brandt *et al.*, 2005).

Another development that further compounded the problems and challenges faced by local authorities in the development of TVEs was the restructuring of central–local fiscal relations in 1994. While the restructuring did not reduce the importance of revenue generation, it imposed more constraints on the means that local authorities could resort to—especially for the generation of discretionary revenue (Wang, 1997; Whiting, 2000). Unlike the pre-1994 revenue sharing arrangement where the central government took a lump-sum amount from the various taxes collected by each province, the new system gave the central government, among other things, a large and fixed share (75%) in value-added tax—the most important transaction tax, which also began to be collected directly by a new central tax bureau. Moreover, the reform introduced new measures aimed to limit various informal, off-budget sources of revenue—including those associated with the operations of local public enterprises (Wong, 1997), which along with formal career and financial incentives had been an important motivating factor behind local officials' efforts to promote TVEs (Byrd & Lin, 1990; Ma, 1994). Together, these changes might have made the marginal "benefits" of further growth of TVEs less attractive—especially in view of the rising costs of such growth and the resultant cumulative liabilities.

The "expansionary" strategy also posed problems to enterprise governance, which in turn added more difficulties to the further growth of TVEs. As TVEs multiplied and as key local officials were increasingly removed from direct management, monitoring efficacy suffered. Managerial incentives were allegedly much less serious a problem during the early years of reform, presumably because many local officials were directly involved in managing TVEs, while both the number and the size of TVEs were still limited (Byrd & Lin, 1990; Kung, 1999; Walder, 1995; Whiting, 2000). [6] Local officials' heavy involvement at that time may even be considered as conferring a unique advantage to these public enterprises: the officials' knowledge about, and personal contacts within, the bureaucratic system enabled subordinate enterprises to bypass or overcome many pre-existing barriers to the expansion of self-arranged transactions for input supplies and output sales.

As the economic environment became increasingly market-oriented alongside the proliferation of TVEs, however, enterprise managers, who started out humbly as mundane overseers of day-to-day operations, gradually assumed a greater role in determining enterprise performance (Chen & Rozelle, 1999; Kung, 1999). Yet since enterprise managers were not residual claimants, they lacked the incentives to uphold—let alone improve—enterprise performance. On the contrary, many were tempted to maximize self-interest even at the expense of the enterprises which they were assigned the responsibility to manage, especially when their formal remuneration was constrained by egalitarian communal norms and government policy (Kung, 1999; Ma, 1994; Weitzman & Xu, 1994). The severity of such pursuit of self-interest was manifested in a wide range of widely reported opportunistic behaviors that ranged from shirking and falsification of statistics to short-term maximizing strategies (*duanqi xingwei*), embezzlement, and asset stripping. [7] Small wonder, therefore, that in their prelude to privatization some TVEs adopted various forms of contracts and shareholding arrangements that accorded the managers greater residual claiming rights—contracts that, by virtually allowing managers to hold larger stakes—assumed increasingly private characteristics (Chen & Rozelle, 1999; Vermeer, 1999).

In the meantime, marketization and expansion of local economic activities, especially those in the non-farm sector, greatly increased the scope and complexity of regulatory and administrative work for local officials. Yet the increasingly lackluster performance of TVEs severely limited the financial and human resources that local authorities could mobilize to monitor the behavior of managers in local public enterprises. Such resource constraints also undermined the efficacy of internal monitoring within the local public administration process, and consequently abuses of public office became increasingly widespread (Lu, 2000; Manion, 2004). Collusion between local officials and managers to promote mutual private interests at the expense of publicly owned assets thus posed a further threat to the viability of TVEs.

In summary, we see the objective of sales maximization and its corollary, namely, the excessive, rapid expansion of TVEs in the early years of reform both as a key contributing force to growing market competition and as the cause for the following. First, it squeezed enterprise profits, increased the relative cost of tax revenue generation, and ultimately constrained the job creation capacity of TVEs. Second, it exacerbated governance problems, which further undermined the organizational foundation for the growth and survival of TVEs. These consequences, along with the tightening of rural credit, have made it increasingly difficult for local authorities to sustain the initially leading role of TVEs in economic development, forcing them to rethink the costs and benefits of maintaining the predominance of public ownership.

3. HYPOTHESES, METHOD, AND DATA

Economic institutional change in post-Mao China is by no means a spatially uniform process. The pace, scope, and focus of economic change have varied greatly across different localities. The early momentum of TVEs, for example, was not evenly strong among different localities (Byrd & Lin, 1990; Putterman, 1993). Significant spatial variation existed in market development and competition (Naughton, 1995). Long before the drastic move by the central government in 1999 to massively privatize public enterprises and further relax restrictions on private economic activities, some local authorities had already moved in these directions (Li, 2003; Oi & Walder, 1999). Banking reforms, like many other reforms, were not simultaneously implemented in all provinces (Brandt *et al.*, 2005; Park & Shen, 2003). Therefore, the foregoing account of the mechanisms that reversed TVEs' initial leading role in the marketization and development of the rural non-farm sector should be examined and verified in both longitudinal and spatial dimensions. This is what we seek to do below.

Building and expanding on the earlier work of Jin and Qian (1998) that focuses on explaining the factors that led to the rise of TVEs, we construct and analyze time series data to account for the decline of TVEs. In light of the discussion in the preceding section, we formulate the following hypotheses about the driving forces at work.

Hypothesis 1: Given the level of sales generated by TVEs, the weaker their fiscal and financial performance the stronger the pressure on local authorities to privatize poorly performing TVEs and/or rely more heavily on the private sector for revenue. We call this the *fiscal pressure* hypothesis.

Hypothesis 2: Given the level of non-farm jobs created by TVEs and the availability of alternative sources of employment (e.g., outmigration), the faster the growth rate of new entrants to the rural workforce, the stronger the pressure for local authorities to rely on private enterprises for job creation by relaxing pre-existing restrictions. We call this the *job creation pressure* hypothesis.

Hypothesis 3: The weaker the capacity of local political leaders to help mobilize financial resources—especially bank loans—for TVEs, the less sustainable the expansionary growth of these enterprises and consequently the faster the decline of their relative significance in the non-farm sector. We call this the *credit mobilization* hypothesis.

Hypothesis 4: The weaker the capacity of local authorities to monitor the organization and management of TVEs, the more vulnerable these enterprises are to agency problems and consequently the faster their decline. We call this the *monitoring capacity* hypothesis.

We use the following model to capture the causal relationship implied in the hypotheses just stated and to estimate the effects of pertinent contributing factors:

$$y_{it} = \mu + \alpha_i + \gamma_t + \beta' x_{it} + \varepsilon_{it},$$

where y represents the degree of the relative significance of public ownership; μ is the intercept; α denotes time-invariant fixed effects; γ denotes yearly fixed effects that do not vary across observations; x denotes exogenous variables that vary both over time and across observations; and ε is the error term.

The data that we use to test the above hypotheses are constructed as a panel covering the period of 1987–98. This coverage is in part determined by the availability of complete data for all the variables included in our analysis. Another important reason for choosing 1998 as the cut-off point is that in the spring of 1999 the National People's Congress adopted a constitutional amendment that declared that private economic activities were "an important integral part of China's socialist market economy." [8] That was immediately followed by a nation-wide wave of centrally engineered privatization of public enterprises and relaxation of restrictions on private economic activities. As a result of such top–down impact, many pre-existing variations and locally unique characteristics in private economic development, such as those captured in a recent study of privatization using survey data up to 1998 (Li, 2003), began to fade among different provinces.

The sources of information for constructing the panel data set include the following: *Zhongguo xiangzhen qiye nianjian* (Yearbook of China's Township Enterprises), compiled by the Ministry of Agriculture for 1987–99; *Zhongguo nongye tongji ziliao* (Statistics of Chinese Agriculture), compiled by the Ministry of Agriculture for 1987–99; *Statistical Yearbook of China*, compiled by the National Bureau of Statistics for 1981–99; *Zhongguo nongcun tongji ziliao* (Statistics of Rural China), compiled by the National Bureau of Statistics for 1987–99; *Xin Zhongguo wushi nian tongji ziliao huibian* (Comprehensive Statistical Data and Materials on 50 Years of New China), compiled by the National Bureau of Statistics in 1999; *Zhongguo jiaoyu shiye tongji ziliao* (Statistics of China's Education), compiled by the State Commission on Education for 1987–99; *Zhongguo xiangzhen qiye tongji ziliao* (Statistics of China's Township Enterprises), compiled by the Ministry of Agriculture for 1987–2002. The panel covers rural non-farm enterprises in 27 provinces or provincial entities (i.e., ethnic autonomous regions and centrally administered municipalities), which constitute the basic units of analysis. Four provincial entities, that is, Chongqing, Hainan, Shanghai, and Xizang (Tibet), are excluded due to the lack of complete data.

The variables that we include in the data set, shown in Table 1, are all proxy measures constructed from aggregate data. This limits the extent to which we can directly test the hypothesized causal relationships. While we have sought to avoid using proxies that are very likely affected by endogeneity problems, the limited range of information in the available data makes it difficult to tackle such problems more effectively (e.g., by constructing and including instrumental variables). The aggregation of provincial-level data extracted by different government offices and reported through multiple layers of bureaucracy may also suffer from reporting errors, inconsistency, and information loss. As such, rather than being taken as conclusive evidence, the data analysis results should be treated as a benchmark for future investigation based on surveys with random and representative samples and more revealing indicators.

The dependent variable in our data analysis is the relative significance of TVEs in the rural non-farm sector. It is proxied by two indicators: the share of TVEs in total sales revenue of rural non-farm enterprises, and the share of TVEs in the workforce of rural non-farm enterprises. We expect to find lower share of TVEs and faster rate of its decline in provinces under greater fiscal and job creation pressures and more vulnerable to credit crunch and monitoring problems.

To proxy the effect of fiscal pressure amidst growing competition (*Hypothesis* 1) on the dependent variable, we calculate the ratio of total taxes and net profit (which local authorities as residual claimants can dispose of) generated by TVEs to their total capital stock (net value of fixed assets). By the logic rehearsed earlier, a higher ratio indicates stronger capability of TVEs to generate fiscal revenues for local governments and accordingly lower pressure for removing the restrictions on private enterprises. With regard to the effect of job creation pressure, we use as proxy the ratio of the growth rate of non-continuing graduates from rural junior high schools and senior high schools to the growth rate of newly added rural workforce in each province. Higher ratios imply greater gaps in job accommodation for new comers in rural work-age population. Given the low relative returns to farming, an increase in non-farm employment opportunities provides an important means to cope with such pressure.

To test the idea that financial leverage has played an important role in fueling and sustaining the growth of TVEs, we derive a proxy for credit availability by dividing the total amount

Table 1. *Definition and descriptive statistics of variables included in regression analysis*

Variable name and definition	Mean	Standard deviation	Minimum	Maximum
(1) Sales share: share of TVEs in total sales revenue of rural enterprises	0.507	0.176	0.110	0.909
(2) Workforce share: share of TVEs in total workforce of rural enterprises	0.459	0.168	0.135	0.915
(3) Fiscal pressure: sum of taxes and net profits divided by fixed assets of TVEs	0.342	0.142	0.085	0.912
(4) Job creation pressure: growth rate of non-continuing junior and senior high school graduates in rural areas divided by growth rate of newly added rural workforce	1.02	0.189	0.458	1.878
(5) Monitoring capacity: local government administrative expenditure divided by non-farm workforce (10,000 yuan)	0.0715	0.1107	0.0071	0.9275
(6) Credit: bank loan per rural non-farm enterprise employee (10,000 yuan)	0.237	0.226	0.019	1.189
(7) CBE legacy: ratio of CBE output to total rural output in 1981	0.120	0.112	0.032	0.581
(8) Sales: sales revenue of TVEs divided by workforce of TVEs (10,000 yuan)	2.973	2.641	0.348	12.598
(9) Urban economy: percentage of urban population in total provincial population	0.260	0.125	0.120	0.600
(10) Sown acreage: sown acreage per rural resident (hectare)	0.019	0.008	0.011	0.057
(11) Non-farm employment gap: difference between net gain in TVE workforce and new non-continuing school graduates in rural areas (million persons)	−0.253	0.314	−1.871	0.478
(12) Out-migration: ratio of out-migrants to total rural workforce	0.037	0.027	0.003	0.125
(13) SOE significance: share of SOEs in provincial gross industrial output value	0.518	0.205	0.068	0.845
(14) Fiscal extraction capacity: local government revenue divided by provincial GDP	0.052	0.079	0.001	0.609
(15) Degree of internationalization: sum of imports and exports divided by provincial GDP	0.168	0.254	0.0002	1.845

of loans extended by state-controlled financial institutions to the rural non-farm sector with total rural non-farm workforce. Our assumption is that because of ideological and political constraints and residual claimancy considerations, local governments are inclined to direct state-controlled credit to TVEs instead of private enterprises. However, shortfalls of funds in the local banking system and/or movements toward credit tightening (e.g., due to banking reform) are likely to have serious adverse impact on the sustainability of TVEs.

We assume that the monitoring capacity of a local government is a function of the administrative resources that it can mobilize and make use of for regulating market-oriented economic activities and managing and monitoring public enterprises. Also, given that in China farming activities are household-based and regulated mainly through non-governmental authorities at the village level, the non-farm sector is the focus of government administration and economic regulation. Therefore, we calculate the ratio of total local government administrative expenditure to the total non-farm workforce in each province as a proxy for local government monitoring capacity. As mentioned earlier, we expect such capacity to correlate closely with the sustainability of the initially leading role of public enterprises in the local economy.

Given that local authorities' monitoring efficacy over TVEs may also be conditioned by variations in past organizational capability, we derive a proxy to control for such historical fixed effect by calculating the share of "commune and brigade enterprises" (CBEs) in total rural economic output in 1981. [9] A higher share is assumed to correlate positively with a local government's experience in running non-farm activities prior to the reform, and *vice versa*.

To take account of other local characteristics that may be more broadly shared by a number of provinces, we create three regional fixed effect dummies by classifying the provincial entities in the data set into three groups—eastern, central, and western. The eastern region, which includes Heilongjiang, Jilin, Liaoning, Hebei, Beijing, Tianjin, Shandong, Jiangsu, Zhejiang, Fujian, and Guangdong, received concentrated resource support under the central planning system. The central region, including Inner Mongolia, Shanxi, Henan, Anhui, Jiangxi, Hubei, Hunan, and Guangxi, was comparatively less favored. Finally, the western region of Shaanxi, Sichuan, Guizhou, Yunnan, Qinghai, Ningxia, Gansu, and Xinjiang, was at the bottom of the pecking order.

For checking the robustness of the effects from the main explanatory variables, we also create provincial dummies to control for province-specific fixed effects. These dummies are included in a separate regression that excludes the variables for historical and regional fixed effects, which are likely to be absorbed into the provincial dummies. To account for yearly fixed effects, we construct year dummies for the period 1987–98, with 1987 as the reference point.

In addition, we include a number of other variables to control for spatial and inter-temporal variations in local economic structure and the process of reform and opening. These variables include: (1) sales (proxied by total TVE sales divided by TVE workforce), which have been the focal concern of local authorities; (2) urbanization (proxied by the percentage of urban population to total provincial population), which in a way reflects the level of market development; (3) farming opportunities (proxied by the size of sown acreage per rural resident), which have a direct bearing on the job creation pressures faced by the rural non-farm sector; (4) non-farm employment gap (proxied by the difference between the net gain in TVE workforce and the total number of new non-continuing junior and senior high school graduates in rural areas), which measures the current-year employment gap (if any) that TVEs were unable to fill; [10] (5) out-migration (proxied by the ratio of out-migrants to total rural workforce), which represents an alternative avenue of employment for the rural workforce; (6) significance of SOEs (proxied by the share of SOEs in provincial gross industrial output value), which have been an important source of government revenue; (7) fiscal extraction capacity of local governments (proxied by the ratio of total government revenue to provincial GDP), which may affect the availability of administrative expenditure; and (8) the degree of internationalization (proxied by the ratio of foreign trade volume to provincial GDP), which proxies the exposure to international market.

4. DATA ANALYSES AND RESULTS

We derive two sets of estimators for each of the two dependent variables—one under the historical/regional fixed effect model and the other under the provincial fixed effect model, both of which are based on the general model specified in the preceding section. All the estimators are derived with the maximum likelihood (ML) method. We initially experimented with the ordinary least squares (OLS) method. While the results are rather similar to those derived with the ML method, they contained serious serial correlation. [11] We correct the problem with the following autoregressive error model (Harvey, 1990):

$$y_t = x_t'\beta + v_t,$$
$$v_t = \varphi_1 v_{t-1} + \cdots + \varphi_m v_{t-m} + \epsilon_t,$$

where ϵ_t is normally and independently distributed with a mean of 0 and a variance of σ^2.

Table 2 reports the estimation results for the baseline model. By and large, these results are consistent with our hypotheses. First, the effects of the four main explanatory variables—"fiscal pressure," "job creation pressure," "credit injection," and "monitoring capacity"—all show expected directions. Second, judging from their sizes, the marginal effects of each of these variables on the dependent variables are not trivial, though differences in the unit of measurement make it difficult to directly compare their relative contributions. Third, the statistical significance for the effects of "monitoring capacity" and "credit injection" is consistently high. For "fiscal pressure" and "job creation pressure," however, one of the four estimators shows an insignificant level of effect.

Table 3 reports estimation results for the full model including all control variables. While the

Table 2. *Maximum likelihood estimates for regression of TVEs' share in sales and workforce: Baseline model*

	Sales share		Workforce share	
	Historical and regional fixed effect model	Provincial fixed effect model	Historical and regional fixed effect model	Provincial fixed effect model
Intercept	1.594 (.194)***	2.045 (.024)***	1.999 (.158)***	3.025 (.189)***
Fiscal pressure	.09 (.069)	.2 (.058)***	.113 (.055)**	.21 (.048)***
Job creation pressure	−.125 (.059)**	−.119 (.052)**	−.09 (.046)**	−.052 (.037)
Credit (log)	.102 (.013)***	.047 (.015)***	.109 (.01)***	.043 (.011)***
Monitoring capacity (log)	.054 (.015)***	.106 (.021)***	.091 (.013)***	.2 (.016)***
CBE legacy	.552 (.117)***		.514 (.097)***	
Central	.024 (.03)		.026 (.026)	
Western	−.022 (.034)		−.033 (.029)	
Provincial dummies		Not shown		Not shown
Year dummies	Not shown	Not shown	Not shown	Not shown
R^2	.47	.749	.609	.78
Durbin–Watson statistic	1.966	1.97	1.978	1.963
Number of cases	324	324	324	324

Note: $^{**}p < 0.05$; $^{***}p < 0.01$ figures in parentheses are standard errors.

basic pattern of effects holds, a few additional results deserve attention. One is that the marginal effects of "fiscal pressure" are markedly increased in the models for sales share, whereas those for the other main explanatory variables are increased or decreased to a lesser degree without a clear directional trend. All estimators for "fiscal pressure" now show consistently high levels of significance. This represents an improvement over the estimation under the baseline model, which is due to inclusion of the control variables in the historical/regional fixed effect model for sales share. Moreover, inclusion of these control variables in the same model has led to marked changes in the level of the R^2. The estimator for "job creation pressure" decreases somewhat in the model for sales share and remains insignificant in the model for workforce share, suggesting that the effect of this variable may be less robust than those of the other three key explanatory variables. It is noteworthy, though, that the estimator for "employment gap"—the control variable for "job creation pressure" in the model for workforce share—becomes highly significant in the predicted direction.

Interestingly, the proxy for CBE legacy shows consistently significant effect in all estimations. While we treat this mainly as a control variable, why TVEs in provinces with strong CBE tradition demonstrated far greater staying power over time than those in provinces with weak CBE tradition is a question worth further investigating in future research. Also, the control variable "sales" shows a negative and highly significant effect in the provincial fixed effect model, indicating that, given the level of fiscal and financial returns, provinces where TVEs generated higher per capita sales actually experienced greater erosion of public ownership—a finding consistent with our analysis. In addition, the year dummies, which are not shown in the table for the sake of saving space, are all negative and significant for the period of 1989–98. This is also telling of the overall impact of the increasingly competitive environment of the economy over time. Finally, the consistently sizeable values of the R^2 for the regressions suggest that the estimations capture quite a large part of the variance.

Overall, the econometric evidence presented above provides provisional support for our hypothesized claims regarding the recent decline of public ownership in the non-farm sector of China's rural economy. Moreover, despite using only aggregated information from secondary sources for analysis, some of our results—those on firm performance and credit—are also similar to those using firm-level data for testing the determinants of privatization (e.g., Brandt *et al.*, 2005).

5. CONCLUDING REMARKS

China's reform experience raises two interesting questions for the theory of property rights and economic reforms. First, why can markets develop and become the driving force of sustained economic growth under predominantly

Table 3. *Maximum likelihood estimates for regression of TVEs' share in sales and workforce: Full model with control variables*

	Sales share		Workforce share	
	Historical and regional fixed effect model	Provincial fixed effect model	Historical and regional fixed effect model	Provincial fixed effect model
Intercept	1.423 (.235)***	2.04 (.269)***	1.932 (.185)***	3.491 (.219)***
Fiscal pressure	.18 (.077)**	.331 (.068)***	.12 (.06)**	.249 (.053)***
Job creation pressure	−.121 (.057)**	−.098 (.051)*	−.092 (.044)**	−.035 (.034)
Credit (log)	.095 (.014)***	.053 (.015)***	.101 (.011)***	.027 (.001)***
Monitoring capacity (log)	.047 (.017)***	.117 (.023)***	.083 (.013)***	.256 (.017)***
CBE legacy	.565 (.143)***		.517 (.111)***	
Central	−.005 (.037)		.0003 (.029)	
Western	.002 (.042)		−.023 (.033)	
Sales (log)	−.033 (.032)	−.113 (.029)***	−.01 (.025)	−.085 (.023)***
Urban economy	.064 (.175)	.124 (.491)	.026 (.138)	.075 (.438)
Sown acreage	−.005 (.019)	−.018 (.042)	−.017 (.015)	.008 (.037)
Employment gap	.0056 (.02)	.012 (.019)	.014 (.016)	.038 (.014)***
Out-migration	.004 (.004)	.002 (.004)	.009 (.003)***	.004 (.003)
SOE significance	−.038 (.08)	.031 (.087)	−.069 (.063)	.033 (.073)
Extraction capacity	.006 (.0015)***	.002 (.0013)	.0028 (.0011)**	.003 (.0013)**
Internationalization	−.001 (.055)	−.091 (.084)	−.027 (.044)	−.117 (.066)*
Provincial dummies		Not shown		Not shown
Year dummies	Not shown	Not shown	Not shown	Not shown
R^2	.514	.758	.654	.795
Durbin–Watson statistic	1.975	1.978	1.972	1.962
Number of cases	324	324	324	324

Note: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$; figures in parentheses are standard errors.

public ownership? Second, why has public ownership declined with the development of markets?

Previous explanations address the first question by looking at the initial political and economic conditions of the Chinese reform, as well as the effect of fiscal decentralization. A common finding is that under certain conditions—political constraints on private ownership, an institutional environment consisting of two parallel systems of resource allocation, and invigorated incentives for local officials, market-oriented economic development can still occur under the predominance of public ownership. In fact, where these constraints-cum-imperfections prevail, public ownership has arguably an advantage over private property rights in developing the rural sector of China's economy.

One should not take this line of reasoning too far, however. While China's early reform experience has seemingly diverged from the typical path of marketization based on privatizing property rights, the key test—for both theories of property rights and economic reforms—is whether private property rights will eventually become the dominant ownership form as market development has reached a certain threshold. Judging from the clear trend toward private ownership since the mid-1990s, the "TVE phenomenon" cannot be taken as providing conclusive evidence to refute the conventional wisdom regarding the decisive role of private ownership in long-term economic transformation toward markets. Indeed, while market-oriented public enterprises have propelled China's non-farm economy forward, they have also undermined the sustainability of their ownership form. In this paper, we have examined how and why the sales-driven growth led by TVEs with relatively easy credit in the early years of reform has been rendered unsustainable by forces that it has unleashed, resulting in growing space for private economic activities; how market development in a transitional economy like China's has forced political leaders to make policy changes that they initially resisted or were constrained from adopting; and how the search for solutions to "agency problem" may have led to economic institutional change.

Our findings show that the initial conditions of reform, especially the incentive structure under fiscal decentralization, shaped the strategies of local authorities in search for new ways to address revenue and employment imperatives through local public enterprises. Focusing on the expansion of sales, these strategies indeed helped achieve short-term policy results as intended. But at the same time they also unwittingly led to changes and mounting problems that over time significantly altered the cost-benefit relationship of TVE-led economic growth, such as growing competition, falling rate of return, increasing vulnerability to credit crunch, and declining monitoring efficacy. What rendered TVEs increasingly unable to contain or respond to these unintended consequences or challenges effectively is the fact that the key players—local officials and enterprise managers—were not true owners of TVEs; yet they were able to use TVEs as vehicles for the maximization of their self-interest without having to bear full responsibility for the costs involved—especially hidden and/or long-term ones. It is not surprising that when such costs reached a critical threshold that could no longer be justified and/or sustained by the pertinent benefits only one viable option remained, that is, to privatize poorly performing TVEs and at the same time relax restrictions on genetically private enterprises.

By revealing this important causal link in the process of economic institutional change, our analysis not only lends support but also provides an explanation for the observation that both the predominance of TVEs and the lack of it were shaped by the same policy concerns—revenue and employment. It was first noted in an earlier study (Jin & Qian, 1998), which nevertheless did not explain the "reversal" mechanisms at work. Moreover, our account of the unintended consequences of early development of TVEs complements existing studies that focus on the impact of improving market and institutional environment on the process of privatization (e.g., Brandt *et al.*, 2005; Li, 2003). What our analysis also helps reinforce in terms of economic theory is the important insight that private property rights are likely to be a more stable foundation for markets than collective or public property rights. For unique historical reasons, the latter had provided a crucial launching pad for the start of China's marketization. But it is now clear that the success of TVEs thereafter was only part of a process of "self-destruction," where what initially appeared to be an aberration gradually moved toward the common evolutionary path of property rights in market-driven economic development.

NOTES

1. A prefatory remark is in order here. Our account does not entail the unwarranted assumption that private firms are immune from the competitive forces that have allegedly undermined the profitability of market-oriented public enterprises. They, too, are subject to forces of competition. But private firms remained a "supplementary" part of China's rural economy prior to the early 1990s relative to their public counterparts. More importantly, private enterprises that failed to compete would mostly fade away quickly, whereas local public enterprises with poor profitability might be able to extend their life spans due to local governmental effort and support until the anticipated benefits associated with doing so become eroded.

2. We refer especially to the township branches of the Agricultural Bank and the Rural Credit Cooperatives that were under the purview of the Agricultural Bank until the mid-1990s. Together, they held nearly 80% of all rural deposits and loans, about half of which was provided to TVEs (Park, Brandt, & Giles, 2003).

3. For instance, township bank branch managers depended on local government officials for businesses (via maintaining public enterprises' bank accounts for deposits), for approval of bank-financed local projects, and not the least for the supply of a variety of community services (e.g., housing, health care, education, and utilities) to bank employees and their families. Such dependence gave local authorities a lever through which to influence banks' lending policies.

4. Using firm-level data, Li (2003) confirms that growing competition in the product market has been a major contributing factor to TVEs' privatization. For a discussion of the declining rate of return among TVEs and its relationship to competition, see Hsiao, Nugent, Perrigne, and Qiu (1998).

5. The growth rate of job creation by TVEs fell from 1.4% in 1985–90 to 0.4% in 1991–98, far below the growth rate of the rural non-farm workforce, which

increased by the magnitude of 5% and 3.6%, respectively, in the corresponding periods (EO, various years).

6. In 1985, for instance, the average number of collective enterprises was 4.6 per township and 1.2 per village, and the average size of the workforce was only 50 per township enterprise and 17 per village enterprise, respectively. In contrast, the respective figures increased sharply to 9, 1.6, 72, and 23 in 1993 (NBS, 1986, p. 216; NBS, 1999, p. 279; EO, 1994, p. 151, 160), when the trend toward private ownership began to emerge.

7. These problems are frequently discussed in the *Township Enterprise Yearbook* compiled by the Ministry of Agriculture. See, for example, EO (1998, p. 89, 255–256, 276, 369; 1999, p. 106, 274, 296, 303, 304).

8. The restrictions on the private sector have experienced a number of changes in the post-Mao era. During 1978–87 only self-employment was legally allowed. In 1988, the workforce size of privately owned entities was allowed to exceed seven employees. In 1992, the communist leadership gave official recognition to the "important role" played by the private sector in China's socialist development. The legal status of private enterprises received further boost in the 1999 constitutional amendment just noted. In the summer of 2001, the CCP even allowed and in a way encouraged private owners to join the Communist Party. In November 2002, the 16th CCP Congress formally amended the party constitution to allow private owners to become party members. In March 2004, the National People's Congress formally added "protection of citizens' lawful private property rights" to the Constitution. See Han and Pannel (1999); IFC (2000), Garnaut *et al.* (2005) and Zhang, Xie, and Li (1994, 1996).

9. We chose 1981 because that was the time when agriculture began to be decollectivized in earnest. Agricultural decollectivization was largely completed in 1983, when over 99% of the households farmed on an individualized basis.

10. In contrast the explanatory variable "job creation pressure" measures the inter-temporal change in the size of new workforce entrants relative to that of rural workforce.

11. A copy of the OLS estimation results can be supplied upon request.

REFERENCES

Alchian, A., & Demsetz, H. (1972). Production, information costs, and economic organization. *American Economic Review, 62*, 777–795.

Brandt, L., & Li, H. (2003). Bank discrimination in transition economies: Ideology, information or incentives? *Journal of Comparative Economics, 37*(3), 387–413.

Brandt, L., Li, H., & Roberts, J. (2005). Banks and enterprise privatization in China. *Journal of Law, Economics, and Organization, 21*(2), 524–546.

Byrd, W. A., & Lin, Q. (Eds.) (1990). *China's rural industry: Structure, development and reform*. New York: Oxford University Press.

Chang, C., & Wang, J. (1994). The nature of the township–village enterprise. *Journal of Comparative Economics, 19*, 434–452.

Che, J., & Qian, Y. (1998). Institutional environment, community government, and corporate governance: understanding China's township and village enterprises. *Journal of Law, Economics, and Organization, 14*(1), 1–23.

Chen, H., & Rozelle, S. (1999). Local leaders, managers, and the organization of township and village enterprises in China. *Journal of Development Economics, 60*, 529–557.

EO (Editorial Office) (1988–2001). *Zhongguo xiangzhen qiye nianjian* (Yearbook of China's township enterprises). Beijing: Zhongguo nongye chuban she.

Garnaut, R., Song, L., Yao, Y., & Wang, X. (2001). *Private enterprise in China*. Caberra: Asia Pacific Press, Australian National University.

Garnaut, R., Song, L., Tenev, S., & Yao, Y. (2005). *China's ownership transformation: Processes, outcomes, prospects*. Washington, DC: World Bank.

Guo, K., & Yao, Y. (2005). Causes of privatization in China: testing several hypotheses. *Economics of Transition, 13*(2), 211–238.

Han, S. S., & Pannel, C. W. (1999). The geography of privatization in China, 1978–1996. *Economic Geography, 75*, 272–296.

Hannan, M. T., & Freeman, J. (1989). *Organizational ecology*. Cambridge, MA: Harvard University Press.

Harvey, R. (1990). *The econometric analysis of time series*. Cambridge: MIT Press.

Hsiao, C., Nugent, J., Perrigne, J., & Qiu, J. C. (1998). Shares vs. residual claimant contracts: the case of Chinese TVEs. *Journal of Comparative Economics, 26*(2), 317–337.

Jin, H., & Qian, Y. (1998). Public versus private ownership of firms: evidence from rural China. *Quarterly Journal of Economics, 113*(3), 773–808.

Jin, H., Qian, Y., & Weignast, B. R. (2005). Regional decentralization and fiscal incentives: federalism, Chinese style. *Journal of Public Economics, 89*, 1719–1742.

Kornai, J. (1990). *Vision and reality, market and state: Contradictions and dilemmas revisited*. London and New York: Harvester Wheatsheaf.

Kung, J. (1999). The evolution of property rights in village enterprises. In J. Oi, & A. Walder (Eds.), *Property rights and economic reform in China* (pp. 95–122). Stanford: Stanford University Press.

Li, D. (1996). A theory of ambiguous property rights in transition economies: the case of the Chinese non-state sector. *Journal of Comparative Economics, 23*(1), 1–19.

Li, H. (2001). Privatizing rural China: The role of learning, screening, and contract innovation on the evolution of township and village enterprises. Unpublished doctoral dissertation, Department of Economics, Stanford University.

Li, H. (2003). Government's budget constraint, competition, and privatization: evidence from China's rural industry. *Journal of Comparative Economics, 31*, 486–502.

Li, H., & Rozelle, S. (2003). Privatizing rural China: insider privatization, innovative contracts, and the performance of township enterprises. *China Quarterly, 176*(December), 981–1105.

Li, H., & Rozelle, S. (2004). Insider privatization with a tail: the buyout price and performance of privatized firms in China. *Journal of Development Economics, 75*(1), 1–26.

Li, H., & Zhou, L. (2005). Political turnover and economic performance: the incentive role of personnel control in China. *Journal of Public Economics, 89*, 1743–1762.

Lin, Q., & Du, Y. (Eds.) (1997). *Guoyou qiye yu feiguoyou qiye bijiao yanjiu* (A comparative study of SOEs and non-SOEs). Kunming: Kunming renmin chubanshe.

Lin, Y., & Zhu, T. (2001). Ownership restructuring in Chinese state industry: an analysis of evidence on initial organizational changes. *The China Quarterly, 166*, 298–334.

Lu, X. (2000). *Cadres and corruption: The organizational involution of the Chinese communist party*. Stanford: Stanford University Press.

Ma, R. (Ed.) (1994). *Jiushi niandai zhongguo xiangzhen qiye diaocha (Case studies in Chinese township enterprises in the 1990s)*. Hong Kong: Oxford University Press.

Manion, M. (2004). *Corruption by design: Building clean governments in mainland China and Hong Kong*. Cambridge, MA: Harvard University Press.

Montinola, G., Qian, Y., & Weignast, B. R. (1995). Federalism, Chinese style: the political basis for economic success in China. *World Politics, 48*, 50–81.

Naughton, B. (1994). China's institutional innovation and privatization from below. *American economic association papers and proceedings* (pp. 266–270), vol. 84, May.

Naughton, B. (1995). *Growing out of the plan: Chinese economic reform, 1978–1993*. New York: Cambridge University Press.

NBS (National Bureau of Statistics) (1981–2002). *Zhongguo tongji nian*jian (Statistical yearbook of China). Beijing: Zhongguo tongji chubanshe.

NBS (National Bureau of Statistics) (1999). *Xin zhongguo wushi nian tongji ziliao huibian* (Comprehensive statistical data and materials on 50 years of new China). Beijing: Zhongguo tongji chubanshe.

North, D. (1990). *Institutions, institutional change, and economic performance*. Cambridge: Cambridge University Press.

Oi, J. C. (1992). Fiscal reform and the economic foundations of local state corporatism in China. *World Politics, 45*, 99–126.

Oi, J. C. (1999). *Rural China takes off*. Berkeley: University of California Press.

Oi, J., & Walder, A. (Eds.) (1999). *Property rights and economic reform in China*. Stanford: Stanford University Press.

Park, A., Brandt, L., & Giles, John (2003). Competition under credit rationing: theory and evidence from rural China. *Journal of Development Economics, 71*(2), 463–487.

Park, A., & Shen, M. (2002). Decentralization in financial institutions: theory and evidence from China. Working paper, University of Michigan, Ann Arbor.

Park, A., & Shen, M. (2003). Joint liability lending and the rise and fall of China's township and village enterprises. *Journal of Development Economics, 171*(2), 497–513.

Peng, Y. (2001). Chinese villages and townships as industrial corporations: ownership, governance, and market discipline. *American Journal of Sociology, 106*(5), 1338–1370.

Perkins, D. H. (1988). Reforming China's economic system. *Journal of Economic Literature, 26*(2), 601–645.

Putterman, L. (1993). *Continuity and change in China's rural development*. New York: Oxford University Press.

Qian, Y., & Xu, C. (1993). Why China's economic reforms differ: the M-form hierarchy and entry/expansion of the non-state sector. *The Economics of Transition, 1*(2), 135–170.

Rawski, T. (1994). Chinese industrial reform: accomplishments, prospects, and implications. *American Economic Association papers and proceedings* (pp. 271–275), vol. 84, May.

Riskin, C. (1988). *China's political economy: The quest for development since 1949*. New York: Oxford University Press.

Sachs, J. D., & Woo, W. T. (1994). Experiences in the transition toward a market economy. *Journal of Comparative Economics, 18*, 102–131.

Scott, W. R. (2001). *Institutions and organizations*. Thousand Oaks, CA: Sage Publications Inc.

Tian, G. (2000). Property rights and the nature of Chinese collective enterprises. *Journal of Comparative Economics, 28*(2), 247–268.

Tsai, K. S. (2002). *Back-alley banking: Private entrepreneurs in China*. Ithaca and London: Cornell University Press.

Vermeer, E. (1999). Shareholding cooperatives: a property rights analysis. In J. Oi, & A. Walder (Eds.), *Property rights and economic reform in China* (pp. 123–144). Stanford: Stanford University Press.

Walder, A. G. (1995). Local governments as industrial firms: an organizational analysis of China's transitional economy. *American Journal of Sociology, 101*, 263–301.
Wang, S. (1997). China's 1994 fiscal reform: an initial assessment. *Asian Survey, 37*(9), 801–818.
Weitzman, M., & Xu, C. (1994). Chinese township village enterprises as vaguely defined cooperatives. *Journal of Comparative Economics, 18*(2), 121–145.
Whiting, S. H. (2000). *Power and wealth in rural China: The political economy of institutional change*. Cambridge: Cambridge University Press.
Winiecki, J. (1990). Why economic reforms fail in the Soviet system: a property rights-based approach. *Economic Inquiry, 28*(2), 195–221.
Wong, C. (1988). Interpreting rural industrial growth in the post-Mao period. *Modern China, 14*(1), 3–30.
Wong, C. (Ed.) (1997). *Financing local government in the People's Republic of China*. New York: Oxford University Press.
Woo, W. T. (1999). The real reasons for China's growth. *The China Journal, 41*, 115–137.
Yusuf, S., Nabeshima, K., & Perkins, H. D. (2005). *Under new ownership: Privatizing China's state-owned enterprises*. Washington, DC: World Bank.
Zhang, X., Xie, M., & Li, D. (Eds.). (1994).*Zhongguo siying jingji nianjian, 1978–1993* (Yearbook of China's private sector economy, 1978–1993). Hong Kong: Xianggang jingji daobao she.
Zhang, X., Xie, M., & Li, D. (Eds.). (1996). *Zhongguo siying jingji nianjian, 1996* (Yearbook of China's private sector economy, 1996). Beijing: Zhonghua gongshang lian chubanshe.