

Chinese Township-Village Enterprises as Vaguely Defined Cooperatives¹

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This paper concerns the paradoxes and dilemmas raised by Chinese township-village enterprises. The main purpose of the paper is to argue that a TVE is best described as a vaguely defined cooperative, meaning an essentially communal organization quite far removed from having a well defined ownership structure. The extraordinary success of the TVEs presents a severe challenge for traditional property rights theory, which we investigate in the paper. *J. Comp. Econom.*, April 1994, 18(2), pp. 121-145. Harvard University, Cambridge, Massachusetts 02138; and London School of Economics, London, WC2A 2AE United Kingdom. © 1994 Academic Press, Inc.

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1. INTRODUCTION

Fully one-third of the world's population currently seems to be moving away from centrally planned socialism toward some form of a market econ-

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omy. Suppose we refer to the broad process of making a transition from some form of socialism to some form of capitalism as a process of transformation. It appears as if there are essentially two different models of transformation.

In principle, the more revolutionary changes are required by what might be called the standard model. Basically, the standard model involves making a transition to the standard capitalist economy as quickly as possible, with the essential core of the transition being centered on the aggressive establishment of well-defined private-property rights. This model is more or less familiar to us because the existence of well-defined private property rights seems an absolutely essential precondition to the proper functioning of a capitalist market economy. Such a basic truth comes at us from theory and from practice. To a western-trained economist, the centrality and immediacy to any transformation process of establishing well-defined private property seems so self-evident as to hardly merit discussion. It is little wonder that, leaving aside the sometimes more immediate issues of macroeconomic stabilization, the officially sanctioned position of Western governments and international lending organizations places the highest priority on the rapid establishment of well-defined property rights.

While it seems fair to say that the standard model serves as a general policy guide for East European transformation to a West-European-style economy, this does not mean that the policy has been implemented easily. In fact, one of the major problems with East European transformation has concerned the great difficulty of establishing well-defined private property rights. In this sense, a fair statement might be that the problem with the East European experience thus far is not that it has followed the standard model, but rather that it has not followed the standard model sufficiently thoroughly because private property rights have not been instituted in a sufficiently consistent, clear, rapid or thoroughgoing fashion.

The second, more evolutionary model of transformation is perhaps somewhat less familiar. It might be called the Chinese model, because of its close identification with China.² This model calls for a more gradualist strategy of allowing market-oriented enterprises to develop from within the interstices of the economy. Rather than being transformed dramatically by privatization in the short run, state enterprises, particularly medium and small ones, are pushed, outcompeted, and outgrown by non-state sector firms and are gradually replaced in the long run. The non-state sector in China's rural areas basically means the TVE (township-village enterprise).

² Some people may argue that, without a political revolution, China has only reforms and is not really making a true transition. But what we care about here is the essence of the change process, not its label.

While it will be important to present the Chinese model in greater detail, and to quantify more precisely the role of TVEs, for present purposes it suffices to note that the TVE is a major driving force in the Chinese reform.³ The primary point of this paper is to argue that the TVE is essentially what might be called a vaguely defined cooperative. We realize that viewing TVEs as vaguely defined cooperatives is likely to be controversial and develop this argument later in some detail; here only a brief summary is provided.

It is well documented that a typical TVE is not a privately owned firm.⁴ A TVE is basically a communal organization very far removed from having well-defined property rights. There is a deep involvement of the community government in its operation. The legal system related to the TVE is also ill-defined from a capitalist perspective. The typical TVE seems almost the exact opposite of the type of private organization at the center of the standard model, as the TVE appears to go almost completely against the grain of standard property rights theory.

Yet the Chinese model, with a central role being played by TVEs as the dominant form of non-state enterprise, is, in fact, enormously successful, much more successful so far than any actual applications of the standard model. Casual observation and independent econometric studies (Svejnar, 1990; Pitt and Putterman, 1992) indicate that TVEs are as efficient as private firms. So we have on our hands a significant paradox. Why do vaguely defined cooperatives seem to perform so well? Does this not represent some contradiction with the basic precepts of property rights theory? Can a transforming country actually choose between the two models, and can a transition strategy be reliably based on the performance of vaguely defined cooperatives?

This brings us to the second, and more speculative, part of the paper. It seems to us that the above questions, and some other important issues about transformation, are difficult to address meaningfully from within the framework that underlies the standard model. In the second part of this paper we attempt to sketch the outlines of a possible expanded framework for addressing these issues.

It seems fair to say that standard property right theory aspires to be a universal or culture-free theory. The theory assumes, explicitly or implicitly, that all people are indiscriminately non-cooperative regardless of their cultural background. Under this assumption, a major role of ownership is to resolve conflicts or to enforce cooperation in an economic organization.

³ The fundamental role of the TVE in Chinese reform has been recognized by many economists and policy makers. Deng Xiaoping admitted in 1987 that the amazing growth of the township and village enterprises was the greatest achievement of the reform and was completely unexpected (Chen, 1989).

⁴ See Lin (1987), Byrd and Lin (1990), Oi (1992), and Nee (1992).

However, if there are variations in cooperative behavior among people of different societies, then the significance of ownership in solving conflicts in economic organizations may also vary.

By using a fundamental concept of repeated game theory, it is possible to integrate formally the seemingly cultural element of a cooperative spirit with standard property rights theory to arrive at a somewhat more general version of property rights theory. In this paper we propose, at the level of verbal theorizing, a more general approach. This general approach may reconcile the originally posed paradox, and may have implications for understanding other interesting and puzzling phenomena, such as certain aspects of the Japanese economy.

The paper, then, divides into two parts. The first part, which constitutes the basic message of the paper, argues that TVEs are best viewed as vaguely defined cooperatives with weak or poorly developed property rights. Yet, as we will show, the performance of the TVEs is at least as good as the private firms that they dominate in the non-state sector and much better than the state-owned enterprises. Thus, the outstanding TVE performance would appear to represent a paradox or challenge for traditional property rights theory.

In principle, there might be several ways to answer the challenge. We propose in the second part of the paper one particular way of dealing with the issue, based on a notion of cooperative culture. While this approach seems useful to us, we would not claim that it represents the only way of resolving the problem. In any event, the second part of the paper is necessarily more speculative than the first and should be treated as such.

The rest of the paper is organized as follows. To facilitate the later discussions, Section 2 gives a brief survey of standard property rights theory. Then, the standard model of transition is briefly discussed in Section 3 and contrasted with the Chinese model. Section 4, constituting the core of the paper, describes, with some evidence, the TVE as a vaguely defined cooperative and shows the basic contradictions with standard property rights theory. In Section 5, which begins the more speculative part of the paper, we describe the fundamental folk theorem concept of repeated game theory and show how it may be applied to provide a theoretical foundation for reconciling orthodox property rights theory with a cooperative cultural element. Within this framework of a generalized property rights theory, the central paradox of the paper is seemingly reconciled, although, as we emphasize, this is not the only possible reconciliation. Some further implications of the generalized property rights approach are discussed in Section 6.

2. THE STANDARD PROPERTY RIGHTS THEORY

Our basic thesis is that the Chinese township-village enterprises are best described as vaguely defined cooperatives that perform extremely well in

practice despite seeming not to be based on well-defined private property rights in the standard or conventional sense. To develop further our thesis, we need to state the essence of the standard or conventional property rights theory.

There is no single universally accepted statement of so-called property rights theory. Most presentations of the theory are essentially verbal expositions representing a combination of philosophical thinking, empirical generalizations, and reasoned theoretical assertions.⁵ There are a few rigorously constructed theoretical models; these theories are developed under more or less the same culture free assumptions as the verbal formulations.⁶ Despite the lack of a single canonical form that can readily be cited, it seems fair to say that there is a consistent spirit to the basic thesis of the property rights school. Its essence may be summarized as follows.

In property rights theory, the existence of well-defined private property rights is viewed as a basic precondition to the proper functioning of a capitalist market economy.⁷ Well-defined property rights typically includes the following three basic elements:

- (1) To every property is assigned a well-defined owner or owners with exclusive rights of ownership.
 - (2) To the owner of the property goes the residual income accruing to the assets.
 - (3) The owner has the right to control or determine use of the existing assets, to restructure the property, and to sell or lease it.⁸
- Concerning applications of the property rights approach to the firm, the theory identifies the owner of the firm with the ultimate director of its important decisions. The theory implies, and this is a fourth point, that
- (4) Without well-defined private ownership the firm will tend to operate relatively badly, and any system without widespread well-defined property rights will tend to perform relatively badly.⁹

⁵ For example, Alchian and Demsetz (1972), Demsetz (1967), Furubotn and Pejovich (1974), and Williamson (1985).

⁶ See, e.g., Grossman and Hart (1986) and Hart and Moore (1990).

⁷ Alchian (1974), the founding father of the new property rights approach, admitted that the argument that private property rights are the precondition of a well-functioning market economy is a belief or a proposition which is "not yet derivable from economic theory nor fully validated by sufficient evidence." In this section, we are summarizing property rights theory as a broad generalization or abstraction rather than an ironclad rule about how capitalist economies actually operate. In reality, there are some examples of public enterprises that outperform stagnant or failed private enterprises in the same industry. Also, there are some examples of regulation and even coercive government policies in capitalist economies that seem very successful.

⁸ Demsetz (1967) and Furubotn and Pejovich (1974).

⁹ Alchian and Demsetz (1972).

There may be many reasons for this fourth point. One reason frequently cited in the comparative systems and the transition economics literature is that without true private ownership there tend to arise problems associated with the soft budget syndrome; since there are no clearly identified owners to pay for mistakes or bad luck, someone else pays, typically the state.¹⁰ When true property owners or residual claimants exist, it is ultimately they who are uniquely positioned, by having the proper rights and the incentives, to: observe or to monitor input behavior, to negotiate and to enforce contracts on behalf of the firm, to hire and lay off or fire workers, to sell off or buy property, and to take other decisions to increase the profitability of the firm because it is they who ultimately must pay for mistakes or bad luck. When private owners cannot readily obtain compensation for losses from the state, then all of the rights enjoyed by the owner play a critical role in blocking the infinite regress of inefficiency and shirking that typically characterizes the soft budget syndrome of a system without true ownership of private property. While this section relates an extremely succinct version of the property rights approach, which glosses over some fine points, we believe the four features highlighted here fairly summarize the essence of the theory.

3. THE STANDARD MODEL AND THE CHINESE MODEL

In describing the standard model of transition, we will concentrate on principles or fundamental strategies rather than the actuality of implementation. Our discussion will be very brief because the basic features are familiar.¹¹ Remember that we are operating at a high level of abstraction, glossing over many possible differences among many different countries.

A common strand of the standard model is the central role of private property within an appropriate monetary and fiscal structure. Transition strategy is centered on developing the basic institutions of capitalism. These include well-defined ownership rights in the conventional sense, with a corresponding legal system, commercial code, contract and bankruptcy laws, and so forth. A reward system that makes the owner the true residual claimant is viewed as critical to prevent shirking throughout the system. The wedge of true private property blocks the infinite regress of inefficiency and shirking that characterized the old socialist regime, because the true property owners have the power, and incentives, to harden budget constraints, stop losses, and encourage profitability at the point where the owners are wedged into the hierarchy.

¹⁰ Kornai (1992).

¹¹ By this time there is a sizable literature on transition economics. See, for example, the Fall 1991 symposium in the *Journal of Economic Perspectives*.

The standard model focuses sharply on privatizing formerly state-owned enterprises. There are, as we know, various strategies of privatization, but the underlying goal is always to introduce well-defined private property rights in a context of market competition.¹² Any compromise with tainted institutions like producer cooperatives, worker management, state-private partnerships, semiprivate or semicooperative firms, and so forth, is viewed with hostility. The weak property rights and loose reward structures associated with such ill-defined institutions are deemed likely to result in the same poor performance, for many of the same reasons, from which the formerly socialist economies are trying to escape.

As a guide to policy, the standard model follows well the precepts of contemporary economic theory, most especially the tenets of the property rights school. Of course, it is one thing to have a guide to policy and quite another thing to enact the policy. It seems fair to say that there have been varying degrees of success in establishing property rights in Eastern Europe, but nowhere has it been easy or routine. In other words, the existence of what we are calling the standard model does not mean that the model has been quickly or easily implemented. In fact, the opposite has more nearly been the case for Eastern Europe.

The Chinese model, in contrast to the standard model, was not consciously designed as a transformation strategy at the beginning of the reforms, but evolved as the reforms progressed. Its essence is that new non-state enterprises, of which the TVE is the overwhelmingly predominant form, will outcompete and outgrow the state enterprises and thereby replace them gradually.

The township-village enterprise (TVE) thus plays a pivotal role in the Chinese model, and it is to this organization that we now turn in the next, central, section of the paper. We are aware that the phenomena under examination are extremely complex and multifaceted, but in this paper we have attempted to step back and paint a broad brush picture that is true in spirit, even while exceptions can be argued for some details. While the actual situation may be very complicated when viewed close up, it is possible to summarize fairly the basic features of the TVE at a high level of generalization. We will put some important qualifications into footnotes.

4. THE TVE AS A VAGUELY DEFINED COOPERATIVE

What is a TVE?

According to the official definition, TVEs are collectively-owned enterprises located in townships or villages.¹³ More specifically, all the residents in

¹² Some of these are described in Stark (1992).

¹³ Many TVEs are located in urban areas. They are called TVEs simply because they are supervised by rural township or village governments and the majority of their employees are registered as rural laborers.

TABLE 1

COMPARISON OF GROWTH AND EFFICIENCY IN THE STATE AND TVE SECTORS 1979-1991

	National Industry	SOE Industry				TVE			
	<i>Y</i>	<i>Y</i>	<i>K</i>	<i>L</i>	<i>TFP</i>	<i>Y</i>	<i>K</i>	<i>L</i>	<i>TFP</i>
Growth rate	13.3	8.4	7.8	3.0	4.0	25.3	16.5	11.9	12.0

Source. Official series on gross value of output, net value of fixed assets, and total employment for SOE Industry and TVE sector; output and capital deflated by ratio of official SOE gross industrial output (at current prices) to official SOE industrial output index (at comparable prices). All data from State Statistical Bureau Yearbooks, 1986-1992. Growth rates shown are annual percentages averaged over the period. An appendix with detailed calculations and explanations is available from the authors upon request.

the township or village that establishes the TVE own the firm collectively. The property rights of TVEs can only be executed collectively through the representatives of the community. In practice, the most common case is that a community government is regarded as the representative of the residents, and thus it is the *de facto* executive owner of the TVEs in the community.

Concerning the management of TVEs, it is typical that the control rights are partly delegated to managers through a contract, officially called the management responsibility contract. In a typical case, employees of a TVE collectively sign a contract with the executive owner, the community government.¹⁴ Then the manager of the TVE is determined jointly by the community government and the employees. Thus, the manager is a representative of the employees and of the government. The degree of the community government's role in the appointment of TVE managers varies from case to case, but it is rarely negligible.¹⁵

TVE Performance

Table 1 summarizes some relevant growth rates for the period 1979 to 1991: *Y* is output, *K* is capital, and *L* is labor. SOE stands for state-owned

¹⁴ There are other forms of contracts in practice: the partnership contract, manager contract, and individual contract. In the partnership contract case, the executive owner, the community government, invites bids for the TVE. Individuals form partnership bidders. The winning partner signs a contract based on its bid with the community government. Then the manager is determined by the winning partner. In the manager contract or individual case, the manager or an individual signs a contract with the community government.

¹⁵ According to a sample survey conducted in 1986, 83.3% of township enterprise directors thought that they were appointed by the township government (Song, 1990).

industrial enterprises, while TVE stands for township-village enterprises. These two categories are not strictly comparable. Data limitations prevent separating collectively owned TVEs from privately owned rural enterprises. The category covered under TVE in Table 1 is somewhat broader than TVEs proper because it includes all rural non-state enterprises. Because the output of TVEs proper constitutes about three fourths of the output of rural non-state enterprises, and studies have shown TVE productivity performance to be no lower than that of comparable private firms (Svejnar, 1990; Pitt and Putterman, 1992), for the purposes of this paper it seems permissible to identify TVEs with rural non-state enterprises. Data limitations likewise prevent the separation of industrial from non-industrial activities within the TVE sector; but industry is approximately 75% of TVE output, and since it is widely held to be the most efficient TVE activity, we may regard the TVE productivity growth rates shown in Table 1 as reasonable lower bound estimates of TVE industry.¹⁶ For purposes of comparison, output growth rates for aggregate national industrial output are also included in Table 1.

Before discussing total factor productivity (*TFP*) calculations, a word of caution is in order. Primarily for technical reasons about the appropriate deflation procedure, but also more generally because there are alternative ways of treating the data, a precise calculation of *TFP* may involve some controversy. We present here our best estimates, but investigating and explaining *TFP* calculations is not the central topic of this paper. The main point we would emphasize is that the estimates we present are sufficiently robust to support easily the basic conclusions we draw.

Total factor productivity is calculated as a residual after subtracting from output growth a weighted average of the growth rates of labor and capital inputs. The weights we use are .7 for labor and .3 for capital, corresponding crudely to a rough worldwide consensus that labor's share of income is somewhere between $\frac{2}{3}$ and $\frac{3}{4}$.

Table 1 reveals several important insights. Total factor productivity grows approximately three times faster for TVEs than for the corresponding SOEs. With *TFP* growth averaging 12% annually, TVEs are expanding primarily by intensive technological progress and only secondarily by extensively siphoning off inputs from other potential users. It is beyond the scope of this

¹⁶ The 75% figure is from the *China Statistical Yearbook, 1992*. Available data show that industrial TVEs are more efficient statically than the whole TVE sector in terms of labor profitability, while they are about equally efficient in terms of capital profitability. In 1989, an average employee in industrial TVEs earned 3200 yuan of net after-tax profit, while an average employee in the whole TVE sector earned 2500 yuan of net after-tax profit. Concerning capital profitability, the profit to capital ratio in industrial TVEs was 1.5, while it was 1.6 in the whole TVE sector. Calculations are based on data from the *Chinese TVE Yearbook, 1990*, pp. 128-136 and pp. 187-191.

paper to provide an exhaustive survey of the literature on comparative efficiency of Chinese SOEs and TVEs. Here it must suffice to state that results of several research papers, some drawn from quite different data sources, are consistent with the basic contention that TFP growth, as defined here, is much higher for TVEs than for SOEs.¹⁷

The TVE growth performance shown in Table 1 is so outstanding by world historical standards that it does not seem unwarranted to label it spectacular. The difference between the growth rate of aggregate national industrial output and the growth rate of SOE industry is almost five full percentage points. Since the spectacular TVE growth rate of 25% per year is largely accounting for this difference, it should not be an exaggeration to identify the TVE sector as a major engine, perhaps the major engine, of recent Chinese economic growth.

As a result of the extraordinarily rapid growth of TVEs, in little more than a decade the status of the TVE sector has changed from that of a subsidiary subsector of agriculture to the second largest sector in the national economy.¹⁸ Compared with the private sector, the TVE is the dominant form. In 1991, 74% of total industrial output produced in rural areas was from cooperatives, which includes 67% from TVEs and 7% from producer cooperatives, while the private sector accounted for 26%.

The high efficiency and rapid growth of the TVE sector has exerted deep influences on the state sector in two major aspects. First, the competition has forced state enterprises to work very hard to avoid making losses.¹⁹ Second, instead of being replaced by massive privatization, as in most East European strategies, if not in practice, the relative role of state enterprises has been

¹⁷ For studies bearing on TVE and SOE performance, see Chen et al. (1988a,b), Lau and Brada (1990), Svejnar (1990), Xu (1991), Jefferson et al. (1992), Naughton (1993), and Woo et al. (1993). Some of the seemingly different results of these studies are due to a different underlying assumption about the relevant factor weights. For example, Jefferson et al. use a labor share of 0.12, which significantly lowers their calculated TFP; if their data were reworked with a labor share of 0.7, results would be reasonably close to ours even though their capital series is differently derived.

¹⁸ The non-state sector's share of industrial output increased from 22% in 1978 to 47% in 1991, while the share of the state sector declined from 78 to 53% in the same period. In the non-state sector, about $\frac{2}{3}$ of the output was produced by TVE and similar cooperatives. This pattern of change can alternatively be presented in specific real outputs. For example, in 1990, about $\frac{1}{3}$ of coal, more than $\frac{1}{4}$ of cement, about $\frac{1}{2}$ of electric fans, about $\frac{2}{5}$ of canned food and paper, and about $\frac{4}{5}$ of completed construction projects in China were produced by the TVE sector. Exports by TVEs increased at an average annual rate of 66% from 1986 to 1990. All the numbers in this subsection are taken from the *Statistical Yearbook of China, 1986-1992*.

¹⁹ Most managers of state enterprises interviewed by one of the authors in 1992 and 1993 in Beijing, Hebei, Guangdong, and Shanghai admitted that the most serious competition faced by the SOEs, which causes losses in many SOEs, comes from the TVEs, because of their competitive prices and quick adoption of innovations.

gradually reduced as they are outcompeted and outgrown by the TVEs. According to an official prediction by the Chinese State Statistical Bureau, in the year 2000 a full half of industrial output will be produced by collectively-owned enterprises, in which the TVE sector is the dominant part; the state sector and private sector will each produce one quarter (*China Daily*, July 15, 1992).

The TVE as a Vaguely Defined Cooperative

To rationalize the success of the TVEs, many Western economists have regarded them as actually being private firms under the protective label of a collective enterprise. But this is not true in general, even though some counterexamples can always be found. While we will explain this theme presently, we note here that it is already well documented in the literature that a typical TVE is not a privately owned firm (Lin, 1987; Byrd and Lin, 1990; Oi, 1992; Nee, 1992).

There is another argument: because of political reasons TVEs are restricted from becoming true capitalist firms based on well-defined private property rights. Although this argument may, perhaps, provide a plausible explanation for the existence of the TVE form, it cannot explain the seemingly extraordinary success of their organizational form. Actually, the fact that TVEs are so successful would appear to contradict the main tenets of property rights theory.²⁰

If TVEs must be forced into a traditional classification, then they are more like producer cooperatives than anything else.²¹ But we prefer to use the term vaguely defined cooperatives to label the collectively owned TVEs, because TVEs seems to be especially ill-defined even by the standards of traditional producer cooperatives.

The following features of the TVE as a vaguely defined cooperative seem especially contradictory with the traditional four basic tenets of property rights theory previously noted:

²⁰ In a property rights experiment designed and implemented by the Regional Experiment Office of the State Council, TVEs in suburban Wenzhou were given the opportunity to clarify their ownership status. Somewhat surprisingly, it turned out that most TVEs did not wish to register as formal private firms under the legal protection of private property provided by the State Council. Instead, most TVEs insisted on registering as cooperatives or as township-village enterprises (personal communication with Mai Lu, the former director of the Regional Experiment Office).

²¹ In their comparative studies of TVEs and other institutions throughout the world, Gelb and Svejnar (1990) also conclude that the institutions most similar to the Chinese TVE are producer cooperatives, including cooperatives in Eastern Europe, Mondragon enterprises in Spain, and labor managed firms in the former Yugoslavia.

(1) For the typical TVE there is no owner in the spirit of traditional property rights theory. Nominally, TVEs are collectively owned enterprises, meaning all the community members are nominal owners. In a typical case, these collective owners do not have clearly defined shares as the term is normally understood. Indeed, there are no shares, formally speaking.

Consistent with this fact, there do not exist any such terms as share holders or even owners to describe this aspect of community membership. Actually, there is no commonly used Chinese word for such a person, neither in common parlance nor in legal documents. The closest Chinese term is *cun-min*, meaning resident of the village. We will use the word resident throughout this paper to emphasize the discrepancy with standard property rights precepts.

In a typical case, participation in a TVE is not a decision made by the residents voluntarily and independently.²² Instead, their participation is determined by their residency and mandated by the community government, through such actions as assigning households to donate money to a TVE (*lingdao tanpai*) or requiring personal investment as a precondition for being hired by the TVE (*yizi dailao*) (Deng, 1992).²³

The community government is the de facto executive owner of the TVEs. Many Chinese economists report that TVEs are usually controlled by local governments and typically there is no separation between the communal government and the TVEs. These reports describe a situation where many TVEs do not have genuine autonomy in business transactions; the communal government has major influence in the determination of managerial personnel and employment.²⁴ A field research report reads: "it is very common to see that the basic rights (of TVEs) are in the hands of the Party and (communal) government apparatus, i.e., TVEs are not genuine cooperative enterprises. A significant portion of the net profit (of TVEs) is used for the administrative budget of TV governments."²⁵

In summary, none of the residents or the executive owner have the exclusive rights of ownership associated with traditional property rights theory. Moreover, there are legal restrictions to prevent a TVE from converting to a *de facto* privately owned firm. For example, in the case where a TVE is contracted out to a manager or an individual, the law requires that "all the assets (including the incremental part contributed by the contractor) are still

²² In our interviews with managers of TVEs, they often acted surprised and even laughed when they were asked about the legal ownership status of the *cun-min*.

²³ But even in this case, very often there is no share specified for the workers' investments in the TVE.

²⁴ "National Academic Conference on TVE, 1984," in *China Agriculture Yearbook, 1984*.

²⁵ Rural Policy Research Division of the Central Committee Secretariat, "A Summary of Nationwide Rural Socio-economic Sampling Survey," in *China Agricultural Yearbook, 1986*.

owned by all the labor mass collectively."²⁶ That is, the individual contractor is formally prevented from owning the TVE.

(2) There is no residual claimant in the traditional sense. The typical resident waits passively to receive or to enjoy the benefits, of which the major part is not in monetary form but in the form of communal social investment, which is shared by everyone in the community. The amount of the benefit and the form of the benefit which the resident can get are determined by the community government and the manager of the firm.

The residents or the executive owner of a TVE do not have the full right to consume or to dispose of the after-tax income that they have in principle earned from the TVE. In fact, about 60% or more of the after-tax profits of TVEs cannot legally be distributed directly to the residents, but must be reserved for the TVEs. Most of this reserve fund is reinvested, with the remainder used as a collective welfare fund and a bonus fund within the firm.²⁷ Even for the income distributed to the residents, which accounts for less than forty percent of the after-tax profits, the residents still do not have the full rights of disposing with it as they please, since it is intended for social purposes.²⁸

Although most workers of a typical TVE are among the residents of the township or village, their wages are out of their control, even collectively. For example, field researches found that some community governments, e.g., in Shangrao county, force TVEs to copy or to adopt the wage system of the state firms in that county (Meng, 1990); in some other areas, e.g., in Wu Xi county, the total wage bills of TVEs must be approved by community government (Wu et al. 1990). Consistent with these field research results, two econometric studies find that the wages of TVEs are lower than their marginal labor productivities, lower than wages of state enterprises, and are not correlated with the profitability of the TVEs (Xu, 1991; Pitt and Putterman, 1992).

²⁶ Article 4, Chap. 1, "The Stipulation of Contract Management Responsibility System in the TVE (*xiangzhen qiye chengbao jingying zeren zhi guiding*)."

²⁷ According to the law, "more than or equal to 60 percent of the after-tax profit of an enterprise should be reserved for the enterprises' autonomous distribution. The reserved after-tax profit for the enterprise should be mainly used as investment funds for technological transformation and extending reproduction, and also as welfare funds and bonus funds in a proper way" (Article 32, Chap. 5, in *The PRC (People's Republic of China) Regulations of Rural Collectively-Owned Enterprises (RRCOE)* (*zhonghua renmin gonghehuo xiangcun jiti suoyou zhi qiye tiaoli*), Beijing: People's Press, 1990).

²⁸ "The share of the after-tax profit which is distributed to the owner should be used mainly for the construction of agricultural infrastructures, providing agriculture technology services, rural public welfare, and the renewal of enterprises or setting up of new enterprises" (Article 32, Chap. 5, in *The PRC (People's Republic of China) Regulations of Rural Collectively-Owned Enterprises (RRCOE)* (*zhonghua renmin gonghehuo xiangcun jiti suoyou zhi qiye tiaoli*). Beijing: People's Press, 1990).

(3) In a typical case, the TVE assets are non-sellable, non-transferable, and non-heritable both for the residents and for the executive owner. Residents of the township or village will automatically lose their nominal residency if they leave the community, while an outside individual will automatically gain residency by marriage to a resident of the township/village.²⁹ Furthermore, the residents of TVEs do not have the right to determine the use of the existing assets. Residents do not have any individual control rights, although they may have some influence on the operation of the TVE collectively.³⁰

As for the executive owner of a TVE, the community government, not being a legal owner, does not have the residual right of control over a TVE either. For example, in a typical case the government is restrained from firing workers who are residents of the township/village where the TVE is located. Moreover, there are several other formal legal requirements and restrictions on the roles of the local government as executive owner.³¹ Not only is the community government's role different from a private owner, but also its right of control over a TVE is more restrictive than the state government's role *vis-à-vis* state firms in the sense that community governments have to take into account in their decision making the preferences of residents. Field research has found that decisions on the establishment of new TVEs were often discussed and made collectively at village meetings (Byrd, 1990).

In recent years, some joint-stock township-village companies (JSTVCs) that nominally issue shares have appeared. While there is no telling what the future holds, for the time being such firms are still only a tiny fraction of TVEs, except for a few townships. Even in Guangdong province, which is regarded as one of the most advanced provinces in promoting a joint-stock company system, JSTVCs accounted for less than 8% of TVEs.³² Further-

²⁹ There are TVEs which are initiated and managed by individual entrepreneurs, and thus are not typical collectively owned enterprises. But still the right of these TVEs to appropriate assets is very vague. The entrepreneurs borrow the land or other input factors from the community government. As a condition of borrowing the land from the government, the enterprises have to be classified as collectively owned enterprises even though the value of the TVE assets far exceeds the value the entrepreneurs borrowed from the government. Many do not know who is the real owner of the assets. Neither the community government nor the entrepreneur is the residual claimant of such firms.

³⁰ By contrast, the separation of ownership and management in the typical capitalist firm at least allows equity owners the right to withdraw their shares from the firm in which they have invested if they are unhappy about the firm's performance. That is, genuine capitalist owners have the right to control their own investment.

³¹ For example, the law requires that "the owner should provide services for the production, supply and marketing of the enterprise, and *should respect the autonomy of the enterprise*" (emphases added) (Article 19, Chap. 3).

³² Personal interviews with officials of Guangdong provincial government and Shunde county government.

more, rather than representing a clear movement towards privatization, as some people imagined, such firms usually operate within a collective structure in the sense that the bulk of shares is held collectively. In a typical case, after converting to a joint-stock company, 80% of the shares of a TVE would be held collectively through the company or the township-village government, while 20% of shares is sold to the individual employees of the firm. The stock held by an individual is non-sellable, non-transferable, often even non-heritable.³³

A vivid example that is documented concerns the Zhoucun district of Zibo city in Shandong province, one of the model regions most celebrated for advancing JSTVCs. In 1992, of total stock shares of more than 800 JSTVCs in that district, some 94% were held collectively, while only 6% were privately owned (ZZERO, 1992, pp. 45-46).

(4) Even without well-defined ownership, the TVEs still operate efficiently. This anomaly has also been noticed by other economists. "Entrepreneurial performance in the TVP sector has been especially remarkable in an environment in which ownership and property rights with respect to industrial assets are not clear and pure private ownership is rare in the smallest concerns" (Byrd, 1990, p. 189).

According to property rights theory, TVEs should be operating less efficiently than true private firms. Yet, the facts seem otherwise. An econometric study based on panel data of more than 400 TVEs and private firms in 4 counties over 16 years shows that "private ownership and community ownership appear to have similar effects on productivity" (Svejnar, 1990, p. 253). In the regression, ownership dummy variables are used to investigate vaguely defined cooperatives such as village enterprises and clearly defined cooperatives and private firms such as joint household, family and individual firms, or joint venture firms. The result of the regression shows that the difference between the coefficients of the different ownership dummy variables is statistically insignificant. In a more recent econometric study investigating 200 TVEs and private rural firms distributed in 10 provinces with annual observations from 1984 to 1989, Pitt and Putterman (1992) obtained a very similar result. These studies suggest that productivity in TVEs is similar to private firms, or at least that ownership does not matter in the sample investigated.

Consistent with their good performance, TVEs are subject to hard budget constraints. As evidence of the hard budget constraint on the TVEs, in 1989 about one-sixth, or 3 million, township-village enterprises went bankrupt, or were taken over by other TVEs, while almost all loss-making state-owned

³³ Personal interviews with managers of Beijiao Township Corp., Rongqi Township Corp., Cuokou Village Corp., and officials of Shunde county in Guangdong province and Xianghe county in Hebei province.

enterprises were bailed out by the state.³⁴ As a result of hard budget constraints, in 1990–1991 the loss-making township and village enterprises accounted for about 6% of all TVEs. By contrast, more than half of state enterprises were loss-making.³⁵

The Basic Paradox

According to almost any version of mainstream property rights theory, what we are calling the Chinese model should represent a recipe for economic disaster. Without a true owner who has the clear rights and incentives to operate the firm for maximum profits, there ought to be inefficiency and shirking in TVEs. As a result, the TVEs should operate relatively badly. A transformation strategy centered on vaguely defined cooperatives, even with a hard budget constraint, would seem like the farthest thing imaginable from conventional wisdom in this area.

The central paradox is the enormous success of the Chinese model in practice, contrasted with the predictions of the standard theory and also with the sputtering, tentative, comparatively less successful experience of the standard model. Why do theory and practice seem so diametrically opposed in this important area? Of course, one could attempt to argue that the standard model was never really tried in Eastern Europe or elsewhere; but this explanation begs many further questions and still leaves a big gap between theory and practice in explaining the success of the Chinese experience.

5. COOPERATIVE CULTURE: A POSSIBLE RECONCILIATION OF THE PARADOX

Why do China's vaguely defined cooperative TVEs perform so well? In keeping with the necessarily compressed nature of this paper, there is not space here to explore fully all the possible explanations. Several factors may play a role. We would like to emphasize in this paper one line of thought that seems to us particularly appropriate, even if it should be regarded as somewhat speculative at this stage because other explanations are logically possible.

Conventional property rights theory may be inadequate here because it is missing a critical dimension. The key missing element is the ability of a group to solve potential conflicts internally, without explicit rules, laws,

³⁴ *Zhongguo qiye guanli nianjian (China Enterprise Management Yearbook)*, 1990, p. 342. Beijing: Enterprise Management Press, 1990.

³⁵ According to Mr. Gao Shangquan, Deputy Director of the State System Reform Committee of the State Council of China, in the early 1990's, there had been only $\frac{1}{3}$ of state enterprises making profits, $\frac{1}{3}$ making losses, and another $\frac{1}{3}$ making *de facto* losses (The Keynote Speech at the Chinese Economic Association (UK) 1992 Annual Conference, London).

rights, procedures and so forth. To make this idea more operational, and more internally consistent, we consider a theoretical framework.³⁶ It is possible to criticize this theoretical framework as, in the end, doing little more than elaborating the syllogism that China's vaguely defined cooperative enterprises perform outstandingly well because China's culture is unique and different. Yet we feel it is useful to go more deeply into the structure of a general argument that might reconcile the paradox, both for its own sake and because this line of reasoning could bear on many issues in economics other than the one being addressed here.

A word about methodology may be in order. In this second part of the paper we are largely trying to synthesize and apply already known theoretical results to an important issue not adequately treated so far in the literature. Thus, the treatment here is largely at the level of verbal theorizing, although we believe that a rigorous formulation will ultimately be possible, but difficult. Also, in trying to state our case succinctly, some simplifications and generalizations are inevitable.

The Folk Theorem of Repeated Games and Cooperative Culture

Let us consider the prisoner's dilemma non-cooperative game.³⁷ The only solution to the one-shot prisoner's dilemma game is the selfish Nash equilibrium, which is Pareto inferior to the cooperative solution. However, when the prisoner's dilemma game is played repeatedly, a much richer set of results is possible. Actually, a continuum of solutions is possible, which can often be Pareto ranked, corresponding to a greater or lesser degree of "as if" cooperation. Thus, there is a sense in which a non-cooperative repeated game can yield the kinds of outcomes typically associated with cooperation, collusion, or binding agreements. This family of results is so important, and it has been known for so long, that it has been given a name: the so-called Folk Theorem of game theory.

The Folk Theorem states that the outcome of a repeated non-cooperative game played among sufficiently patient players may look as if it is the outcome of some cooperative process or some legally binding agreement to play cooperatively, or, it may not. It all depends upon an intangible expectational factor that might legitimately be identified with the history or culture of the group of players.³⁸

³⁶ David Kreps has formally developed a notion of corporate culture, some elements of which are similar to the ideas being expounded here. See Kreps (1990).

³⁷ We assume basic familiarity with the prisoners' dilemma game. See, e.g., Fudenberg and Tirole (1992) and the references cited there.

³⁸ The Folk theorem for infinitely repeated games can be summarized in the following terms (Fudenberg and Tirole, 1991, pp. 150–160): If the players discount the future at a sufficiently low rate, then individually rational payoffs can be supported by an equilibrium. Thus, in the

If each member of the group expects that every other member of the group will play cooperatively and that there will be a relatively severe penalty for not playing cooperatively, then the cooperative solution may become a self-reinforcing equilibrium. On the other hand, if members of the group expect that other members will not play cooperatively and the penalties for such behavior are relatively light, then a non-cooperative solution will emerge as a self-sustaining equilibrium. In general, there will be a continuum of infinitely many such solutions, ranging from more "as if" cooperative to less "as if" cooperative. It seems fair to identify a cooperative spirit or cooperative culture with a set of self-reinforcing expectations that result in a more "as if" cooperative solution.

Let the outcome to a repeated non-cooperative prisoner's dilemma game be quantified by the parameter λ , which is valued between 0 and 1. A high value of λ near one means a non-cooperative solution that comes close to looking as if it were the outcome of cooperative collusion. A low value of λ near 0 means a non-cooperative solution that is far from the cooperative solution, thus yielding low individual payoffs.

The parameter λ stands for the ability of a group of people to resolve prisoner's dilemma type free-riding problems internally, without the imposition of explicit rules of behavior, other things, including the size of the group, being equal.³⁹ With a value 1 of λ , people in a group would be able to resolve completely free-riding problems internally, regardless of the size of the group. With a value 0 of λ , even two people, the smallest group of people, cannot at all resolve free-riding problems. With a value between 0 and 1 of λ , people would be able to cooperate relatively effectively when their group is sufficiently small, but they may not be able to cooperate as effectively when their group is sufficiently large.

The relevant theory appears to allow taking λ as a more or less given function of culture. As we have readily admitted, it could be argued that our approach essentially shifts the paradox back one stage to explaining the deter-

limit of extreme patience, repeated play allows virtually any payoff to be an equilibrium outcome. Because multiple equilibria are generic in the repeated game, economists typically focus on cooperative results or efficient outcomes. But there is no generally accepted theoretical justification for assuming efficiency in this setting.

³⁹ In TVEs, there is a popular spirit called "*gemen*" (buddy-ship commitment and loyalty), which plays an important role in substituting for formal rules, contracts or ownership. Some Chinese economists or businessmen have noted that the *gemen* mechanism replaces contracts or ownership. A series of case studies in Anhui Province find that many TVEs consciously do not use formal contracts to maintain or to strengthen the *gemen* relationship, both in internal management and in outside transactions. People there "regard defining personal interests by written agreement or contracts as damaging *gemen* spirits." "In order to strengthen the atmosphere of stressing *gemen* spirit and downplaying personal interests inside the firm, . . . managers earn not much more than workers" (Cai, 1990, p. 201).

minants of λ . On balance, however, we think there is a useful net gain in understanding. A more serious inquiry would want to probe further, but suppose for the sake of argument we may temporarily treat λ as a quasi-fixed reduced form parameter. Of course it does not constitute proof, but a lot of anecdotal evidence could be cited to justify the general proposition that East Asia is a high- λ society relative to Europe, which by comparison is more of a low- λ society.⁴⁰ The entire topic of defining operationally a λ -value is worthy of further study. For the purposes of this paper, we merely wish to examine the likely relationship of various values of λ , taken as given, with property rights theory.

Ownership

It seems fair to say that the property rights literature is often presented as if it were culture-free, of universal applicability. Ownership gives a residual right to control an asset in the case of a missing contractual provision, thereby resolving potential conflicts and preventing shirking.⁴¹ More generally, it is important to have well-defined property rights and clear reward systems of the right sort because otherwise there is an incentive for opportunistic and shirking behavior that can seriously undermine economic performance.

But if the way of looking at things presented in this paper has any validity, the significance of ownership interacts in a critical way with the ability to solve efficiently internal organizational problems without formal rules, which may perhaps be treated as more or less culturally given in many relevant cases. The orthodox version of property rights theory is not universal; it is really applicable only to a low- λ culture. With low values of λ , it becomes critically important to specify in detail the rules of ownership, rewards, and so forth, because without legally binding rules the low- λ organization will not achieve efficient results. On the other hand, formal property rights and binding legal rules become less important for a high- λ society relative to other issues like competition among organizations.

To give a specific example, let us look at so-called lock-in relationships or lock-in effects between parties, which are common in business practice. The lock-in effect refers to situations where a small number of parties make

⁴⁰ It is possible to cite here some loose evidence to show that there are differences in cooperative behavior under different cultures, but such evidence would probably not convince anyone who did not want to be convinced, and the general subject seems well beyond the scope of this paper.

⁴¹ It has been argued that the residual right to control a property is the most important element of ownership. In addition to the right to decide the usage of the property except to the extent specified in a contract, ownership grants the right to exclude some people from accessing the property (Coase, 1937; Grossman and Hart, 1986; Hart and Moore, 1990).

investments that are relationship-specific, i.e., once made, they have a much higher value inside the relationship than outside. For example, there is a lock-in effect between the firm and its workers when some of the workers' human capital invested today is firm-specific in the sense that their human capital payoff in the future depends on some particular features of their firm.

When there are lock-in effects, with a low value of λ , meaning people cannot trust each other, a long-term contract may be necessary to reduce opportunistic behavior or to induce people to formally cooperate by establishing legally the efficient lock-in relationship. However, if it is difficult or impossible to have a complete long-term contract between the parties, say because certain outcomes are unobservable or because the contract would be prohibitively costly to enforce, then overall ownership may be the necessary condition to maintain efficiency, since the owner of the physical assets, with the residual right or power of employing workers, can direct employees to utilize these assets in accordance with his directions.⁴²

Making a group of people follow the instructions of other people is critical to the success of any large scale economic organization. In this sense, according to the property rights school, a well-defined ownership structure can be regarded as the necessary and unique instrument to make some people, the employees, follow the instructions of some other people, the owners, thereby avoiding potential conflicts in their joint pursuit of economic activities. In conventional property rights theory a low value of λ , or non-trusting behavior, is a fundamental assumption about the players of the game. It is so fundamental that economists simply do not mention it as an assumption.

Personally, we think it is plausible that, in a society with a low value of λ , the conventional property rights theory is essentially correct. However, if a society can be described by a high λ -value, or people trust each other, then, without formal ownership, parties may still be able to invest in the relationship or to lock together. In this case, it may not be necessary to have a well-defined owner with a clear-cut right to exclude some people from accessing the asset. With a high λ , or a stronger capability for, or desirability of, cooperating, the threat of firing may not be necessary or may not be the best incentive for inducing good behavior. Put another way, well-defined property rights may not be so crucial in a high- λ society. In any event, the existence of varying degrees of cooperating capabilities among people in disparate societies makes the importance of well-defined property rights itself vary across societies.

It seems to us that in a high λ -society, an implicit contract may be more efficient than an explicit contract. There may be many reasons for high- λ

⁴² General references are Coase (1937), Williamson (1985), Grossman and Hart (1986), and Hart and Moore (1990).

people to prefer implicit to explicit contracts.⁴³ First of all, there may be some saving of time and energy in negotiating, formulating, and enforcing the contract. There may also be an incentive effect of the implicit contract. If people are cooperative or can trust each other, employees may behave responsibly, as if they are residual claimants or owners, in the sense that they are willing to deal effectively with contingencies that may not be written or may not be able to be written in a formal contract. By contrast, in the case of an explicit contract, employees may do only those things specified in their employment contract. Thus, an implicit contract here may generate better incentives than an explicit contract.

In general, the costs of a contract, which include the costs of negotiation, observing or verifying outcomes, and enforcing the contract, are continuous rather than discrete. The value of λ across different societies is in principle also continuous, that is, people from different societies differ in their capability or desire to be cooperative. Thus, the costs and benefits of forming explicit contracts and implicit contracts will be different in different societies. There will be trade-offs between explicit contracts and implicit contracts. There may exist a range of situations where people who are more cooperative may prefer to have a gentleman's agreement, an implicit contract which is self-enforced by custom, good faith, and reputation, while low- λ people may need to have an explicit contract to prevent opportunistic behavior.

Concerning actual TVE contracts, law officials and policy makers report that such transactions are often based on oral agreements instead of written contracts. Even in the case of written contracts, it is often the case that the contracts are incomplete and unspecific in items, or there is no specific punishment for breaching the contract. It has been noted that part of the reason for the popularity of this kind of practice is the importance of long term relationships and connections for TVE transactions (Liu, 1989). "They regard friendship as the most secure way of doing business. They usually try to develop friendship first before doing business" (Cai, 1990, p. 201). Given the importance of long term relationships and connections, when there are disputes many TVEs would rather settle privately instead of relying on the courts because they care more about keeping long-term connections, even though doing so may hurt their business in the short run.

6. SOME IMPLICATIONS OF A GENERALIZED PROPERTY RIGHTS THEORY

If the above story is believable, we have more or less answered the central paradox within the paradigm we have provided. Against the strong predic-

⁴³ In the literature of contract theory, if a contract is not enforceable or prohibitively costly to enforce, the explicit contract will be given up or be replaced by an self-enforced implicit contract (Bull, 1987; Hart and Holmstrom, 1987).

tions of property rights theory, the Chinese model may succeed better in practice than the standard model because traditional property rights theory omits a critical variable and tends to treat only the low- λ case.

In a high- λ society, the evolutionary Chinese model might be a better transition strategy because it may be less disruptive overall and it concentrates effort more directly on the main task of building market-oriented organizations. That these market-oriented organizations are ill-defined cooperatives may not be critically important. In a high- λ society the ownership structure can perhaps be sorted out later, if it even needs to be then. Perhaps China is headed more towards a high- λ Japanese-style capitalism than towards a low- λ European-style capitalism in any event.

As for the idea that a transforming country has the option of choosing between the Chinese and standard models, the framework of this paper seems to suggest that such choice may be largely illusory. If the ideas being put forth here are sound, the value of λ is essentially the product of a path-dependent historical heritage. The costs of changing culture are presumably very high, if culture is changeable at all. So it simply may not be a realistic option for Eastern Europe to be thinking in terms of the Chinese model. It may be that Eastern Europe really has no choice but to take the difficult route of developing and strengthening traditional private property rights appropriate to a low- λ society. By the same token, it is might not be fruitful for China or Vietnam or North Korea to be thinking in terms of the standard model. In a high- λ society, the time and effort needed to formalize property rights, contracts, and so forth is perhaps better spent on developing new products or on penetrating new markets or on increasing productivity or on other more directly productive activities.

The world is a complicated place and there may be many other contributing factors that explain the Chinese miracle. To the extent that these other factors are significant, the Chinese experience may have greater or lesser relevance to the Eastern European debates about the role of privatization and the speed of transformation. At the very minimum, the Chinese experience offers a strong counterexample to the sweeping claim, sometimes made in support of big bang approaches, that gradual reforms must fail.

The main purpose of this paper is to draw attention to the seemingly contradictory nature of the Chinese and standard approaches to transition. We have tried to argue strongly that TVEs are best viewed as vaguely defined cooperatives. The basic question of the paper then is: why, given the usual emphasis by economists on the prime importance of well-defined private property rights for incentives and for a successful transition from socialism to capitalism, should the Chinese township-village enterprises, which seem to operate under poorly defined property rights, have been so successful?

The second task of the paper tries to focus on a readily apparent explanation in terms of the ability to cooperate, or λ -value, of a society. This part is

bound to be more controversial. Even if our explanation is largely true, there is still some question over how it might be applied. And there is no reason why all the countries of Eastern Europe should have the same λ -value. For example, it might be argued that Russia is more of an intermediate- λ society than most of the others. If so, there might be somewhat different policy implications for privatization for Russia than for the rest.

If the approach of this paper rings true, there is a lot of research remaining to be done. As it has been practiced thus far, the standard property rights theory seems to be covering only the low- λ case. How property rights theory interacts with the λ -value of an organization in the more general case may prove to be an insightful way of viewing a number of issues.⁴⁴

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⁴⁴ It was already mentioned that perhaps some aspects of Japanese-style capitalism might be illuminated by this approach.

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