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**China's Township and Village Enterprises and Their
Evolving Business Alliances and Organisational
Change**

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CHINA'S TOWNSHIP AND VILLAGE ENTERPRISES AND THEIR EVOLVING BUSINESS ALLIANCES AND ORGANISATIONAL CHANGE

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ABSTRACT

The economic literature suggests that the success of China's TVEs has arisen due to special circumstances. This paper argues, to the contrary, that they are likely to remain a significant feature of the Chinese economy, albeit in new organisational and ownership forms, for some time. Their evolving strategic business alliances, including that with science based research institutions, it is argued, will make this possible.

Key words: TVEs, business alliances, organisational change, ownership change, sustained growth

1. Introduction

One of the most striking outcomes during China's period of economic reform since 1978 has been the rapid growth of the non state sector. This consists of four broad types of business entities: township and village enterprises (TVEs); urban collectives; private and individual enterprises; and joint ventures and wholly foreign owned enterprises, which together are called foreign funded enterprises (FFE). The sector has attained major outcomes in terms of output, employment, and export growth as well as in technology upgrading, profitability and gains in total factor productivity. By the mid 1990s the non state sector produced two thirds of industrial output and over 70 per cent of total national output, as both agriculture and the personal services sectors are largely privately owned. The industrial output share of state owned enterprises (SOEs) and collectives has dropped, while that of the more dynamic TVEs and local private and foreign enterprises has grown rapidly. Indeed the highest growth rates more recently have been recorded by the privately owned enterprises and FFEs. A similarly radical shift has occurred in industrial employment patterns. While in 1980 SOEs employed more people than all other forms of enterprises combined, by the mid 1990s the non state sector's contribution had increased substantially and the TVEs had become the single largest source of employment for industrial workers. TVE employment, overall, more than quadrupled between 1980 and 1995.

The non state sector dominates light industry and has generated about three quarters of total export growth since 1978. It also produces over 80 per cent of industrial output in the coastal provinces. In fact the pre-eminence of the non state sector in these provinces is one of the main sources of dynamism of the coastal region. In the past the non state sector confronted discriminatory tax and other policies, and, even today, still has some concerns regarding security of property rights. Difficulties remain in accessing bank finance, upgrading technology, obtaining access to skilled labour and management personnel, dealing with government interference in the management of some enterprises, and securing product transport and distribution. However, legal and regulatory reforms and political developments in the 1990s have greatly improved the position of non state sector firms, contributing to the sector's dramatic growth.

The dynamism of the industrial sector during the period of reform has been primarily provided by that of the TVEs, which have achieved a remarkable performance. Their output increased by 25 per cent a year from the mid 1980s to the mid 1990s, resulting in their share of GDP increasing from 13 per cent in 1985 to over 30 per cent by the mid 1990s. During the past fifteen years they have also created over 100 million new rural jobs. A comparison of their performance with that of the SOEs is also remarkable. Although the capital-output ratio in collective industry, of which the TVEs are a crucial component, in China is only 25 per cent of that in the state sector, labour productivity (output per capita) is close to 80 per cent of that in state enterprises and rising at more than 10 per cent a year. Total factor productivity in TVEs is also considerably higher than in the state sector, and is growing at 5 per cent a year. This is more than twice the rate in state enterprises. The factors behind this remarkable performance, and its sustainability within the framework of the TVE organisational and ownership form, will be emphasised.

The paper proceeds as follows. Section 2 conducts a brief review of the TVEs in terms of: their development; their unique organisational form; the issue of property rights and the TVE performance

paradox; and the prospects for their sustainable development. The TVEs' contribution to the economy in terms of output, employment and exports as well as their performance in terms of profitability, total factor productivity and upgrading of technology is identified in section 3. The reasons behind the success of the TVE organisational form is discussed in section 4. Section 5 focuses upon the evolving business alliances involving TVEs, including those with publicly funded research institutes and universities, as well as organisational and ownership changes which will be required if the TVEs are to sustain their development within China's rapidly evolving market economy. Finally, section 6 presents a summary of the major conclusions from this paper.

2. TVE background and contemporary issues

Background

The origins of the TVEs can be found from the agricultural collectives, or communes, established at the time of the Great Leap Forward in 1958, and which were held responsible for establishing and promoting rural industry. So called 'commune and brigade run enterprises' were the outcome from this process. These remained in place until the end of the 1970s when the household contract responsibility system gradually replaced the people's commune system, and commune and brigade run enterprises began to enjoy greater autonomy. In this new environment they had an incentive to increase production, improve productivity, and develop new businesses. In addition, the government implemented various policies encouraging their development such as loans on favourable terms, tax reduction or exemption, and technical assistance. All these measures laid the foundations for the further development of rural industries. With the effective demise of the agricultural collectives by 1983 the responsibility for the commune and brigade run enterprises was transferred to local government industrial departments, which contributed start up funds, appointed managers, and were ultimately involved in strategic decision making.

In 1984 commune and brigade run enterprises, of which there were approximately 1.4 million, were officially renamed as village and township enterprises (TVEs), but it was also decided that the label would apply to individual rural enterprises and those based on farm cooperatives. This meant that the number of TVEs suddenly increased five fold to about 6.1 million in 1984. Hence four types of ownership structures involving TVEs, as defined by a government document in 1984, existed: county and township run enterprises; village run enterprises; farmers' cooperatives; and individual or family run businesses. The first two categories are owned collectively by townships (formerly communes) and villages (formerly brigades). The cooperatives are owned by households/farmers who pool their resources together for production. The latter category consisted of enterprises owned by individuals. Many of the first two types, that is county, township or village run enterprises, followed on from the commune and brigade enterprises. The additional farmers' TVEs were mostly very small. Because of the family quota contract system, farmers produced an agricultural surplus and found themselves with some free time. They were encouraged and supported by the government to use this time to develop certain new businesses. Unlike SOEs, TVEs' finance, supplies, sales, production, and personnel were not subject to state planning, however they became intimately linked with local government.

TVEs and Their Contribution to Promoting Rural Industrial Development

The impetus for the initial growth of the TVEs arose from the success of China's agricultural reforms of the late 1970s and early 1980s, which greatly expanded rural savings, freed millions of workers to seek non farm employment and increased rural demand for consumer goods, as well as the decentralisation of fiscal revenue raising in the mid 1980s. The importance of the TVE form of industrial enterprise in the context of promoting rural industrial development in China has been due to the following features. Firstly, the TVEs allowed rural communities to translate control over assets and resources into income, despite the absence of asset markets. The growth of product markets provided rural communities with the opportunity to realise value from locally controlled resources. Secondly, TVEs provided a way to convert assets into income without solving the difficult problem of privatisation. The Chinese government then, and reconfirmed in 1993, was unwilling on ideological grounds to permit mass privatisation. The administrative difficulties involved with privatisation would have been immense due to the sheer size of China and the lack of administrative apparatus. The difficult problems associated with privatisation were probably insoluble in China during the 1980s. Hence the TVEs circumvented this difficulty while contributing importantly to competition and the opening up of markets. Thirdly, with well functioning markets urban firms would have purchased land and hired suburban labour. In the absence of such institutions TVEs represented an alternative solution. Urban SOEs could sub-contract to TVEs providing in the process technology and equipment, or rural governments could take the initiative in this regard themselves. Many TVEs grew up as complements to state run industry. The majority of TVE growth has been concentrated in advanced periphery-urban regions. For example in 1988 in the three provinces of Jiangsu, Zhejiang and Shandong, producing half of all TVE output, linkages with urban firms were central to TVE growth.

Finally, TVEs facilitated access to capital on the part of start up firms. In China local government ownership played a key role in the process of financial intermediation. Local governments could better assess the risks of start up businesses under their control, and were diversified and able to act as guarantors of loans to individual TVEs. By underwriting a portion of the risk of entry, local governments enabled start up firms to enter production with a larger size, starting with some mechanisation, and exploiting economies of scale. With local governments playing an important role in the flow of capital to rural enterprises, such firms were able to take advantage of China's relatively abundant household savings. In return, the profitable opportunities and reasonable risk levels in the TVE sector kept real returns high and contributed to the maintenance of high savings rates.

TVEs and Local Government

Township and village leaders are typically appointed from above by county administrators, who in turn designate the managers of TVEs. They in effect possess all the key components of property rights: control of residual income; the right to dispose of assets; the right to appoint and dismiss managers; and assume direct control if necessary. Local residents possess no 'right of membership' in the TVEs, nor do TVE workers possess any rights to participate in TVE management. Township and village officials' compensation is determined by a 'managerial contract' with explicit success indicators covering economic and social objectives. TVE output and sales value, profits, and taxes enter into the compensation schedule, as well as family planning, maintenance of public order and education. However there are strong pressures to stress profits since the township or village as a unit

is subject to a fairly strong hard budget constraint. The successful township official maximises his own career prospects by producing economic growth during his term as a community leader, and this is likely to crucially depend upon maximising net revenue from the TVEs. Managers of TVEs not performing in a satisfactory fashion in accordance with such criteria can be dismissed.

The role of China's TVEs is unique in the context of an economy in transition. In no other such economy has public ownership played such a dynamic role. However the collective ownership form, which TVEs are classified as being, does not have a precise definition in the country, leading to uncertainty about ultimate ownership rights. The literature would suggest that public ownership combined with vague ownership rights would present a recipe for economic disaster (Weitzman and Xu (1994)). However the performance of the TVEs in terms of output growth, employment creation, profit rate and growth of total factor productivity (TFP), indicates to the contrary that the TVEs have accomplished a good record in comparison to its private counterparts and much better than that of the SOEs (Svejnar (1990), Pitt and Putterman (1992)). Under a collective ownership with an unclear delineation of property rights, the success of TVEs therefore seems to pose a paradox for the standard property rights theory which states that a well defined private property rights system is a precondition for eliminating disincentive and free rider problems as well as other opportunistic behaviour (see Alchian and Demsetz (1972), Demsetz (1972), Furubotn and Pejovich (1974), and Cheung (1982)). Weitzman and Xu (1993) attempt to reconcile this by arguing that the success of the TVEs has arisen from their internal institutional form, which facilitates cooperation through implicit contracts among community members.

Naughton (1994), argues, on the other hand, that the success of the TVEs has been largely due to a set of external conditions to which they have been an effective adaptation. They have been an effective response to a distinctive feature of the Chinese transition process that saw the early development of product markets, without well developed markets for factors of production and assets. The latter in fact only developing gradually, such that even in the 1990s it is still at a very early stage of development. Naughton therefore argues that the TVEs were a flexible and effective but basically ordinary adaptation to this environment. Such a view would suggest that TVEs may not represent an enduring organisational form, and that as underlying economic conditions change rural industry will lose ground to large domestic firms, enterprise groups, and joint venture companies during the course of the 1990s and beyond.

However, although predominantly owned by local government, an increasing number of TVEs are now privately owned. Many are now involved in joint ventures with SOEs and foreign companies and a high proportion incorporate a complex network of affiliations and alliances involving scientists, engineers, academics and business entrepreneurs. This has enabled them to gain access to technology and to become competitive. It is these evolving alliances that will be essential to the sustainability of the TVE form of enterprise, and is discussed further below.

3 TVEs' performance and contribution to the economy

Greater autonomy, financial support, freedom from bureaucracy and entrepreneurial drive resulted in a stunning rate of growth for the TVEs during the period of economic reform, contributing significantly to the rapid growth of the Chinese economy during this period. Major progress was made by the TVEs on a number of fronts including that of output, employment, export growth, as

well as improvements in efficiency as measured by both labour productivity and total factor productivity, an upgrading of technology, and sustained profitability

Output

Table 1 shows the output value, number of establishments and employment level of the TVEs during the period of economic reform. The output value of TVEs increased from 49.3 to 6,891.5 billion yuan over the period from 1978 to 1995. In line with this rapid expansion in output, TVE numbers also increased rapidly from over 1.5 million in 1978 to 22 million by 1995. The latter figure, however, being almost 3 million less than for 1994. In 1995 the GDP (value added) of the TVEs accounted for 25.5 per cent of the national total, and in 1994 they contributed some 30 per cent of gross industrial output (see Table 2). Between 1979 and 1991 the average growth rates of GDP and industrial output in TVEs were 30 per cent and 26 per cent respectively, while those at the national level were 10 per cent and 12 per cent respectively. Table 2 indicates that by the mid 1990s TVEs were contributing over 30 per cent of industrial output, over 40 per cent if urban collectives are included, which compared with a figure of 22 per cent in 1978. In conjunction with these developments the SOE share of industrial production has fallen steadily during the period of reform, from 78 per cent in 1978 to around one-third by the mid 1990s. There has also been a rapid expansion in the contribution of privately owned and foreign funded enterprises, whose share of industrial production increased from being negligible in 1978 to over 25 per cent by the mid 1990s. The latter represents a rise almost as spectacular as that of the TVEs themselves, and potentially has important implications for the future evolution of the TVEs in terms of their organisational as well as ownership form. Although growth of the TVEs continued apace during the 1990s (see Table 1), more recent developments during 1996 and 1997 suggest a slowdown in their growth. The reasons for are discussed in section 5.

[INSERT TABLES 1 AND 2 HERE]

Employment

In terms of employment creation the contribution of TVEs to the rural economy has been truly spectacular. They employed some 28.3 million workers in 1978 rising to 128.6 million by 1995 and to 135 million by 1996 (see Figure 1 and Table 3). This has made a major contribution to the employment of surplus labour in rural China, in a cost efficient way, as well as raising rural incomes. These are two essential tasks in the development of China's rural economy. Table 3 indicates that the TVEs are the largest employers of industrial labour. Indeed over the period 1978-96 they provided an additional 100 million jobs in the rural sector.

[INSERT FIGURES 1 AND 2 AND TABLE 3 HERE]

While the output growth of TVEs has remained at a high rate concern has, more recently, arisen from the fact that expanded TVE employment has increased at a much slower rate (see Figures 1 and 2). For example the net output of TVEs increased by 125 per cent at fixed prices from 1991 to 1995 but employment expanded by only 27 per cent. There is a general concern by the authorities that the

non state sector as a whole may not be able to expand sufficiently to absorb unemployed labour in both the rural and urban economies.

Exports

Until 1984 exports from TVEs were negligible, but starting from 1985 they increased rapidly. In 1986 TVEs' exports of US\$5 billion accounted for one-sixth of China's total exports. In the same year about 20,000 TVEs specialised in production for export, 2,400 TVEs were involved in equity and cooperative joint-ventures, and about 10,000 were engaged in compensation trade and production according to clients' requirements or samples. In 1987 China's new policy of accelerating the economic development of coastal regions gave 14 cities the status of coastal open cities, with extra freedoms and tax breaks for foreign trade and investment and gave a further impetus to the development of TVEs. From the second half of 1988 to 1991 both central and local governments put great emphasis on the development of export oriented businesses to acquire capital, technology, and raw materials from western companies and international markets. Although during the same period the central government was tightening money supply and controlling investment in domestic markets, export oriented TVEs began to take off. They succeeded because of their operating flexibility and customer oriented approach. The position of TVEs in China's foreign trade became increasingly important thereafter. From 1987 through 1992 TVEs' exports and imports grew by an average of 60 per cent per year. Their exports of US\$20 billion in 1992 accounted for a quarter of China's total exports (US\$85 billion). By the mid 1990s about 80,000 TVEs were engaged in export oriented production, accounting for over 40 per cent of China's total exports and over 30 per cent of China's GDP.

Profitability

Table 4 compares the profit rates between TVEs and state owned industrial enterprises (SOIEs) during the period of economic reform. This suggests that for most of the years from 1978 to 1994 the pre tax and after tax profit rates of the TVEs have been higher than that of the SOIEs, except for the years from 1986 to 1989. However to obtain a more accurate picture of their respective performances, the profit rates of the SOIEs must be discounted by the subsidies provided by the central government. These budget subsidies increased from 11.7 billion yuan in 1978 to 36.6 billion yuan in 1994, and for most of the years this accounted for a share of more than 10 per cent of total government revenue. Therefore if the profit rates of the SOIEs recorded in Table 4 are discounted by this factor, their performance has lagged considerably further behind that of the TVEs which operate in the absence of government subsidy.

[INSERT TABLE 4 HERE]

Upgrading of Technology

During the period 1991 to 1995 the capital stock of TVEs increased by 142 per cent, and was the primary factor behind the rapid growth in TVE output during this period. This expansion of capital intensity of TVE production is confirmed from Table 5, which clearly indicates an upgrading of the technology employed by TVEs. The vast majority of the funds for which has come from bank loans

and retained earnings, with the latter becoming of increasing significance during the period of the 1990s (see Table 6). While this is of benefit to some TVEs, as they move to increasingly higher value products, it does present a strange paradox in a labour surplus economy, and explains the slowdown in labour absorption in rural China as previously indicated. Why has labour been substituted for capital in this way? Recent research (see Liu (1997)) suggests that in the coastal provinces the reason for this is that most of the surplus labour has already been absorbed, and that further production is being achieved by increasing relatively cheap capital for increasingly costly labour. In the poorer inland provinces with surplus labour the marginal productivity of labour is already low, and hence expanded production could come about more easily through an expansion of capital rather than labour. This, Liu concludes, has important policy implications for labour migration and training, and for the allocation of capital, to improve labour absorption in rural China across its provinces. Labour should be encouraged to move to the coastal provinces, and capital to the poorer inland provinces.

[INSERT TABLES 5 AND 6 HERE]

Efficiency

There is strong empirical evidence to support the proposition that TVEs are more efficient than that of SOEs. Weitzman and Xu (1994), compared the growth rates of output (Y), capital (K), labour (L) and total factor productivity (TFP) of the SOEs and the TVEs from 1979 to 1991 (see Table 7). They found that the growth rates associated with the TVEs were much higher than that of the SOEs. It is particularly evident for the growth of TFP, which grew three times faster for the TVEs in comparison to that of the SOEs. Similar results were derived by Jefferson and Rawski (1994), see Table 8, who found that the collective form of enterprise performed better than that of the state sector both in terms of labour productivity and more importantly in terms of TFP. The outstanding performance of the TVEs, however, is most noticeable. These results reflect that TVEs have achieved a considerable level of technological progress as previously mentioned, and particularly relative to both the SOEs and collective industries in urban areas.

[INSERT TABLES 7 AND 8 HERE]

The reasons behind the phenomenal success of the TVEs during the period of economic reform, as well as outstanding problems, are discussed in the following section.

4. Reasons for the success of the TVEs

A number of reasons have been advanced in the literature to explain the phenomenal growth and superior efficiency record of TVEs relative to that of the SOEs in particular. The major ones include the following:

- *Small, flexible and market driven.* From the outset TVEs had to rely on markets for sourcing supplies and selling products. Many TVEs positioned their businesses in areas where there were severe shortages, or where SOEs were weak. Most were small and autonomous compared with SOEs, and thus had flexibility to respond to market changes quickly. Their management was also more market oriented.

- *Appropriate production technology.* The TVEs faced cheap labour and expensive capital and natural resources, causing them to choose appropriate production technologies. As the reform process progressed prices were gradually liberalised, reflecting more relative scarcity values, and the SOEs found themselves at a competitive disadvantage because of inappropriate capital and resource intensive technologies.
- *Distortions, market opportunities and rural saving.* The TVEs were highly profitable because of the distortions carried over from the formerly planned system. At the beginning of the reform process in 1978, the average rate of profit on TVE capital was 32 per cent (capital being defined as depreciated fixed capital plus all inventories). Most of the new TVEs were in manufacturing, where state price controls kept profitability high so that the state could obtain high revenues from the SOEs. In addition, due to past biases in the planned system against light industry and services, the TVEs could enter market niches for which the SOEs had either failed to produce or failed to innovate and improve quality control. The resulting high profits achieved by TVEs attracted further investment and rapid growth. This was further strengthened by high rural saving and demand following the agricultural reforms of 1978, in conjunction with the limited scope for emigration from rural areas.
- *Low taxation.* Taxes on TVEs were low, requiring them to pay only 6 per cent of profits as tax in 1980, climbing to 20 per cent after 1985. Such low tax rates in China were primarily due to a policy driven desire to foster rural industrialisation.
- *Decision making.* Information channels between the TVE managers and local government authorities tended to be both shorter and simpler compared to that for the SOEs, encouraging greater efficiency. Further, this greater flexibility and autonomy in management has meant that inter-firm alliances and technological alliances with universities and research institutes has produced a 'networked' approach to innovation and industrial production.
- *Decentralisation plus financial discipline.* In 1984 a decentralisation of fiscal power took place in China which allowed lower levels of government to retain locally generated revenues, creating a strong incentive for the development of local industry. A non performing TVE in this system would become a drain on limited resources, therefore local government officials and TVE managers had to focus more upon financial objectives, profit plus local tax revenues, since local governments lacked the borrowing capacity of higher levels of government. Hence the TVE enterprises under their jurisdiction faced harder budget constraints than SOEs, and were more likely to fall into bankruptcy if persistent losses were made. This focused upon the need for TVEs to be efficient, competitive and profitable in a period of a rapid opening up of markets. Meanwhile, managers of SOEs, having responsibility for housing and other social services as well as industrial operations, faced a more complex set of objectives and state obligations.
- *Kinship and implicit property rights.* A number of researchers have suggested that, despite the absence of well defined property rights, the demographic stability of China's rural communities promoted the emergence of 'invisible institutions' to provide a 'moral framework for rights' or a 'cooperative culture' that served to reduce problems of shirking and monitoring found in most public enterprises (see Byrd and Lin (1990), Yusuf (1993a, 1993b), and Weitzman and Xu

(1994)). The incentives facing TVEs is similar to that of private firms in that residual profits are dispersed among a small group, consisting of a stable local community and in particular its local government and TVE manager. Studies have shown the importance of TVE profits in local government budgets and the close links between local economic performance and the status, income and career prospects of local officials.

- *Links with the state enterprise sector.* The state sector also represents an important, and not sufficiently recognised, component in the successful development of TVEs and other non state firms. The TVEs and collectives in general rely on the state sector as a source of capital, materials, equipment, specialised personnel, technology, sub-contracting arrangements and sales revenue. For example in southern Jiangsu province more than two thirds of TVEs have established various forms of economic and technical cooperation arrangements with industrial enterprises, research units, and higher educational institutions in larger cities. Local government officials attempting to develop industry in poor localities are encouraged to pursue joint operations with scientific research organisations or large and medium scale enterprises.
- *Market entry and competition.* The continual reduction of entry barriers associated with China's industrial reform created a domestic product cycle in which new products, materials and processes introduced by innovative state firms were adopted by TVEs and other non state enterprises. They could then use their cost advantages to erode state sector profits and force state industry toward fresh innovations. In addition there has been intense competition for investment, including that for foreign investment, among communities with TVEs. The ability to attract such investment is strongly influenced by the reputation of the TVEs as well as local economic performance. TVEs themselves are being increasingly subject to competition from the even more dynamic but smaller private and foreign invested sectors. An issue developed further in the following section.
- *Dedication to human resources, innovation and quality.* Many TVEs put special emphasis on human resources, innovation and product quality. With their autonomous and flexible systems it is their usual practice to recruit highly competent engineers and technicians from SOEs, to pay them attractive salaries and actively pursue innovation. At the beginning of the 1980s they mainly targeted and sought retired technicians and engineers from urban areas. Since the mid 1980s their attention has shifted to scientists and technicians working in research institutes and SOEs, who are discontented with their working conditions. Currently they are competing with large and medium sized SOEs for talented staff and trying to attract foreign experts. TVEs maintain close links with research institutes. About 60 per cent of inventions and innovations developed by China's scientific and technological institutions have been put into production by TVEs.
- *International orientation.* Many TVEs, particularly those in coastal provinces, are actively pursuing co-operation and joint ventures with SOEs, with other TVEs, and with foreign companies. By developing joint ventures and sub contracts with foreign firms, TVEs have gradually upgraded their technology and many have become involved in foreign direct investment (FDI). Joint ventures between TVEs and foreign companies have grown rapidly in the last few years.

- *Lower cost structure.* TVEs have lower cost structures than SOEs, and they pay less tax. Because their managers historically had to rely on retained earnings and loans instead of government grants, they constantly pressured local authorities to give them tax breaks. Wages in rural areas are also significantly lower than in cities where most SOEs are found. They also do not have thousands of retirees on their books. The TVEs also do not have to offer welfare benefits like healthcare and social security insurance. Workers at TVEs work long hours, and the quality of their production has improved towards the SOE level. Where simple technology is required this represents a big advantage, particularly in light industries like textiles and electrical appliances,

Despite these favourable characteristics, a significant number of TVEs still suffer from a number of difficulties, including the following:

- *Limited funds and supplies.* The growth of TVEs has had to rely chiefly on re-investment of any surplus. Although the Chinese government has implemented favourable loan and taxation policies to support TVEs, it has not directly invested in TVEs as it has with SOEs. Nevertheless, state bank loans have played an important role in sustaining the rapid development of TVEs. Another difference between TVEs and SOEs is that the former never benefited from supplies, at low cost, through the central plan.
- *Obsolete technology.* Many TVEs are still using obsolete technology, partly because their businesses are small and newly established and partly because their managers and employees have only recently stopped working on the land. In fact some still work part time as employees and part time as farmers. Hence, they are incapable of pursuing R&D activities and developing new products. Apart from some TVEs in the southern coastal provinces, most still rely on mechanical or semi-mechanical technology and quite a few on manual work. Many are too small to invest in R&D and keep up with the latest technology, making them vulnerable to competition from financially stronger foreign invested ventures.
- *Low level of employees' education.* One of the major problems in TVEs is the employees' very low level of education. In the early 1990s only about 200,000 employees in TVEs had a degree or higher education, and only 420,000 held a medium level technical qualification. These two figures come to less than 1 per cent of their employees.
- *Profitability not clear.* Many foreign investors partnering TVEs sometimes discover that much of their profitability is based purely on preferential tax policies.
- *Vague property rights.* Growing conflicts of interest may arise from their historically vague ownership status. Because employees theoretically own everything collectively and nothing individually, they often act more like employees than owners seeking to increase their salaries rather than cut costs and maximise company profit. Vague ownership rights and reliance on special privileges could cloud their future.

5. Evolving business alliances, organisational and ownership change

For the TVEs to maintain their remarkable performance, they will be required to evolve into enterprises capable of being competitive within the context of China's increasingly market oriented

economy. This will require making further advances in a number of key areas including that of: management control; clarification of property rights; expanding access to finance; access to developments in science and technology; enhancing the human capital of its employees and managers; ensuring access to input supply; and improving the efficiency of their distribution and marketing systems. Those TVEs unable to make such advances are unlikely to survive within the new economic environment evolving in China. Successful TVEs are likely to be those able to develop into new organisational forms based upon business alliances with other enterprises, involving co-operation and joint ventures between TVEs, SOEs, private domestic and foreign enterprises, and also that with research institutes and universities in order to gain access to advances in science and technology. This will enable them to compete in both domestic and international markets, as well as to invest overseas. The gap between the developed coastal and backward inland regions is likely to widen since TVEs in the coastal region attract and introduce far more FDI than inland regions. This process will encourage more and more TVEs to turn to exports, including processing and manufacturing based on clients' samples and specifications, processing clients' raw materials, and direct export. Joint ventures between TVEs and foreign firms will increase. TVEs in the coastal region will gradually develop their own R&D capacity. More and more capable technicians will be attracted to TVEs in the coastal region, where they enjoy a higher living standard than inland areas and have autonomy and funds to pursue research. Additionally, the intensification of competition, particularly with the rapidly developing private sector, is likely to result in the traditional collective ownership structure of the TVEs no longer being viable. Some of these key issues are now discussed further.

Evolving Business Alliances and Partnerships Involving TVEs

For foreign firms TVEs can be appropriate business partners or sub contractors to pursue a global sourcing strategy and to penetrate China's domestic market, and this process can also bring major benefits to the TVEs in the form of access to finance, technology, managerial expertise, and international markets. The development of joint ventures with TVEs, in comparison with that of SOEs, can bring numerous benefits to foreign companies:

1. TVEs can provide greater commercial focus and are more flexible in comparison with the SOEs, and hence they can respond rapidly to changing market circumstances,
2. they are more sensitive to market signals and are more conscious of the need for efficiency,
3. Joint ventures with ailing SOEs, even in more dynamic provinces, may be too costly, as many of the better ones already have business links with foreign companies. Foreign companies may find that those available have poor potential. Such SOE joint ventures may require excessive investment by foreign partners with long pay back periods,
4. TVEs operate much more independently from state bureaucracy. Such bureaucracy may wish to participate in SOE joint venture hiring and pricing policies,
5. There is a willingness of local party officials at the village level, who sometimes see themselves as patrons of TVEs, to help a TVE/foreign company joint venture with daily problem solving,
6. TVEs have the ability to hire labour as needed without being required to hire unnecessary or unsuitable workers,
7. In most cases TVEs face an absence of financial burdens, such as surplus labour, weak distribution systems, excessive factory space, obsolete equipment, high welfare benefit obligations to current and retired workers,

8. many TVEs are now able to produce goods which are acceptable in international markets,
9. TVEs are eager to develop partnerships with foreign enterprises,
10. in many cases local governments encourage, support, and reward those TVEs which have developed co-operation or joint ventures with foreign firms,
11. land and labour costs are lower for the TVEs than in urban areas. Salaries in TVEs can be 20-30 per cent lower than in SOEs. Thus by developing a partnership with TVEs, foreign firms' products are able to achieve competitive cost advantages in China and in international markets. TVEs have also attained higher productivity in comparison to SOEs,
12. the sense of pressure to make profits is felt more by TVE managers and employees than by those in SOEs, and thus hard work and greater entrepreneurship are often the norm.

For these reasons foreign companies that want to have products manufactured to their own designs and specifications, and to source supplies/components, may find TVEs ideal partners. Products which require frequent changes in design and specifications and whose product batches are relatively small would be particularly suitable for TVEs.

However a large number of TVEs may not be suitable for the establishment of a business alliance with a foreign company, for a number of reasons:

1. they may have limited financial, technological and human resources,
2. they may be in locations away from major urban areas and without essential amenities,
3. they may receive less support from senior political leaders in provincial or central governments, possibly leading to problems of resource allocation and utilities supply,
4. there is the possibility of weaker legal protection for a TVE partner if the political climate of the non state sector deteriorates.

Technology

In order to maintain their competitiveness TVEs have not only been developing relationships with industrial partners but also R&D relationships with research institutes, universities and government agencies. As indicated previously a number of TVEs are rapidly upgrading their technology, relying heavily on retained earnings to do so. It is this horizontal connection between TVEs and science based institutions which is likely to provide the organisational capabilities for their sustainable development. There appear to have been three important areas of reform that have contributed to these developments. Firstly, state driven economic reforms have contributed to an environment that has encouraged TVEs to move into new areas of industrial production and trading. Second, science policy reforms have steered technological alliances with public research institutions toward TVEs rather than toward SOEs. Thirdly, reform at the local government level created an environment conducive to the formation of horizontal alliances among TVEs and other enterprises. As future reforms in the state-owned sector deepen, it is likely that the long term survival of the TVE sector will rest even more on their capacity to build and maintain scientific and industrial organisational networks.

Through the 1980s China progressively implemented a series of Science and Technology development programs with specially designed objectives. These included the 'Spark Program', intended to direct science and technology towards the development of township enterprises and the

promotion of rural and local economic development; the '863 Program' intended to promote China's high-tech R&D; the 'Prairie-Fire Program' designed to guide agriculture technology training; the 'Harvest Program' aimed at diversifying agriculture, animal husbandry, and fisheries; and the 'Torch Program' directed towards promoting new technologies in industry (China State Science and Technology Commission, 1991). At the same time research institutes and universities, many with well established manufacturing capabilities, have been permitted and encouraged to trade independently. In 1992, for example, the China State Science and Technology Council issued regulations enabling research institutes, engaged in basic or applied research, to engage independently in export and trade - providing they have: industrial capacity to innovate; are internationally competitive; and are export oriented, earning at least US\$500,000 (China State Science and Technology Commission, 1993). A consequence of the reforms has been that research institutes and universities in China have become embedded in new alliances that have produced not only new and economically powerful corporations, but have also led to the establishment of new institutions directed solely toward the production of trained technicians for the new enterprises. These science policy reforms, in the context of broader economic reforms, have stimulated the development of new technological alliances between research institutions and the rapidly growing TVE sector.

These cooperative arrangements between TVEs and other firms, as well as science based institutions, have produced organisational alliances with the capability to compete successfully with the larger and more powerful SOEs. However a major issue is whether this development will also enable the TVEs to compete successfully with the rapidly developing and highly efficient private sector in the future. This may require a change in ownership structure from the collective to private form. This option has been given major impetus arising from decisions made at the 15th Communist Party Congress during September 1997, which encouraged an expansion of other ownership types including that of private ownership. The issue of privatisation has therefore clearly appeared on the agenda for China's small and medium sized SOEs under the control of local governments, and is increasingly being applied to TVEs under their control.

Privatisation

During the period 1993-1996 the Chinese authorities implemented an austerity program with the objective of reducing inflationary pressure within the economy while maintaining a high, but more sustainable, rate of economic growth. With a so called soft landing achieved in 1996 it was anticipated that the economy's growth rate would once again pick up. However in 1997 the economy slowed further to a GDP growth rate of 8.8%, and this was largely due to the collective sector's sluggish 11.7% expansion in 1997 which was down from 17.7% in 1996. During 1998 there were signs of a further slowing in the economy arising from the Asian financial crisis. This general slowdown in the economy has contributed to excess capacity and production in most sectors of the Chinese economy. With China planning to lay off millions of SOE workers in urban areas over the next few years, policymakers treat with considerable concern a slowdown in the rural economy as well. Rural unemployment pressure has been increasing, with surplus rural labour totalling approximately 130 million people at the end of 1997. Slowing labour absorption and prospective lay-offs by TVEs is likely to result in rural dissatisfaction and workers migrating to China's cities in search of jobs. In response to these recent developments, as well as increasing competition from the private sector, there have been many cases of privatisation of TVEs with the objective of reviving

sluggish rural industry. The success or failure of these efforts will have important implications for the Chinese economy, and a key issue is whether this process is temporary or inevitable.

Many of the TVEs have, more recently, experienced a decline in market share and profits. The slowing economy and excess capacity, arising from many domestic and foreign companies expanding production in the first half of the 1990s, has resulted in a surplus of many commodities and especially the low value added labour intensive items that TVEs produce. In this intensively competitive environment, only the best managed and most efficient companies will survive. While some TVEs have made the necessary changes to remain contenders, as identified previously, many have not. Highlighting the limitations of the TVE form of business entity.

For many TVEs low skilled labour, unsophisticated management, capital shortages, inability to attract business partners and engage in alliances with research institutes have made it difficult to upgrade quality, move into higher value types of manufacturing, and increase their scale of production. At the same time, local government ownership can make it hard for company managers to make their own decisions. On the other hand many managers of local government owned TVEs are not held responsible for failures. During periods where profits are being made this may be acceptable, but during periods of declining profits and possible losses, as has occurred more recently, local governments are left with the debts, unsold inventories and workers who need jobs. This is one reason why some township and village governments are considering privatising their companies, selling them wholly or partially to private citizens consisting of former factory managers or outsiders. If such enterprises go bankrupt thereafter, it then no longer becomes a problem for the local government. Shrinking tax receipts for local government has also been another motivation for privatisation. Without good TVE results the local governments cannot collect enough tax revenue to build more roads, schools, houses and other community services.

Privatising TVEs, however, has become popular not just for loss making TVEs. Increasingly local government officials appear to be convinced, and particularly in the richer coastal provinces where most of the successful TVEs are located, that private ownership is the appropriate form of ownership to ensure that organisational developments, essential for sustained competitiveness, take place even for profitable TVEs. TVEs are also being privatised simply because they can. Ideological objections to private ownership have been relaxed over the past few years, and this was formally sanctioned at the Party Congress in September of 1997. Many local governments have taken advantage of such a development.

6 Summary and conclusions

The success of China's TVEs was largely an unanticipated outcome from the process of economic reform, attaining a major market niche in the production of consumer goods for both domestic and international markets. The former arose as a legacy of the central planning system and the SOEs' lack of consumer goods production. Their rapid rate of growth during the reform era has contributed significantly to the absorption of surplus rural labour, the generation of higher rural incomes and saving, assisted more generally in the economic development of local rural communities, and generated revenue for local governments. These developments contributed to reducing the extent of migration to urban areas, and is an outcome that should not be underestimated.

While there are many aspects of the TVEs that are specific to China, they can still provide important lessons for other economies in transition. Most notably the significance of liberal market entry, the benefits of competition, the need for enterprises to operate under a hard budget constraint, the benefits of appropriate fiscal incentives for local governments, and the gains to be had from access to science and technology. However, to maintain competitiveness in China's rapidly developing market economy will require changes in their organisational form, through the development of both business and scientific alliances. The rapid rise of China's privately owned and foreign funded enterprises suggests that the major source of competition will no longer simply be with the SOEs, over which the TVEs' performance has been superior, but rather with these alternative forms of business entities. The pressure for change will be intense, and may ultimately require a change of ownership form of the TVEs themselves.

While the literature in general suggests that the longer term growth of TVEs in their present form is unsustainable, there is much evidence to suggest that many TVEs are already transforming themselves into complex interconnected networks involving science, industry and local government. The status of firms in China is highly dynamic in the present environment. Hence the key issue is not whether the TVEs will be able to maintain their industrial momentum, in the light of deepening reforms, but rather the organisational and ownership form that will enable them to do so.

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Table 1
Basic Statistics of China's TVEs, 1978-1995

Year	Number of Enterprises (Million)	Workers Employed (Million)	Gross Output Value (Billion Yuan)	Current Prices Growth (%)
1978	1.52	28.27	49.3	—
1980	1.43	30.00	65.7	—
1984	6.07	52.08	171.0	—
1985	12.23	69.79	272.8	59.5
1986	15.15	79.37	345.1	29.8
1987	17.50	88.05	476.4	34.5
1988	18.88	95.45	649.6	36.4
1989	18.68	93.66	742.8	14.3
1990	18.50	92.65	846.2	13.9
1991	19.09	96.09	1162.2	37.3
1992	20.79	105.81	1797.5	54.7
1993	24.53	123.45	3154.1	75.5
1994	24.95	120.18	4258.9	35.0
1995	22.03	128.6	6891.5	61.8

Source: State Statistical Bureau, *China Statistical Yearbook 1996*, Tables 11-29, 11-30, 11-31, pp.387-389.

Table 2
Gross Industrial Output by Business Type 1990-1994 (billion Yuan)

Year	1990	1991	1992	1993	1994
Total	2392.4	2824.8	3706.6	5269.2	7690.9
SOEs	1306.4	1495.5	1782.4	2272.5	2620.1
Per cent of total	54.6	52.9	48.1	43.1	34.1
Urban collectives	368.7	414.9	514.4	626.3	801.1
Per cent of total	15.4	14.7	13.8	11.9	10.4
TVEs	483.5	593.5	895.7	1395.0	2342.3
Per cent of total	20.2	21.0	24.2	26.5	30.5
Privately owned	129.0	160.9	250.7	440.2	885.3
Per cent of total	5.4	5.7	6.8	8.4	11.5
Other (mainly FFEs)	104.8	160.0	263.4	535.2	1042.1
Per cent of total	4.4	5.7	7.1	10.2	13.6

Source: TVE Statistical Yearbook (1995 and previous years).

Table 3
Employees by Business Type ('000 People)

Year	SOEs	Urban Collectives	FfEs	TVEs	Private	Individual
1980	80190	24250	—	30000	—	810
1985	89900	33240	60	69790	—	4500
1990	103460	35490	620	92650	1700	11050
1995	112610	31470	2410	128620	9560	46140

Source: State Statistical Bureau, *China Statistical Yearbook*, 1996 and previous years.

Table 4
Profit Rates of TVEs and SOIEs 1978-1994 (%)

Year	TVE		SOIE	
	Pre-tax	After-tax	Pre-tax	After-tax
1978	39.8	31.8	24.2	15.5
1979	35.4	29.1	24.8	16.1
1980	32.5	26.7	24.8	16.0
1981	29.1	22.3	23.8	15.0
1982	28.0	20.2	23.4	14.4
1983	27.8	18.5	23.2	14.4
1984	24.6	15.2	24.2	14.9
1985	23.7	14.5	23.8	13.2
1986	19.7	10.6	20.7	10.6
1987	17.0	9.0	20.3	10.6
1988	17.9	9.3	20.6	10.4
1989	15.2	7.1	17.2	7.2
1990	13.0	5.9	12.4	3.2
1991	12.7	5.8	11.8	2.9
1992	14.3	4.8	9.7	2.7
1993	19.0	11.6	9.7	3.2
1994	14.8	9.0	9.8	2.8

Source: ZGTJNJ (1992: 391, 431; 1993: 436-437; 1994: 366; 1995: 403-406)

Note: Profit Rate = Pre or After-tax Profit/Fixed Capital + Working Capital

Table 5
The Capital Intensity of TVEs and SOEs

Year	TVEs' Capital to Labour Ratio	SOEs' Capital to Labour ratio
1985	1362.8	10434.6
1986	1636.5	11488.7
1987	2034.2	12830.2
1988	2522.5	14283.3
1989	3148.6	16459.6
1990	3633.6	18529.9
1991	4110.1	21259.4
1992	5022.3	24292.6
1993	6532.9	29571.9
1994	8808.9	35867.1
1995	11780.9	39741.0
1985-95 % p.a. (nominal)	24.1	14.3
1985-95 % p.a. (deflated)	12.2	2.4

Source: TVE Statistical Yearbook (1995 and previous years).

Table 6
Sources of Enterprises' Investment Finance, 1980-93

	SOEs	Urban Collectives	TVEs	JVs	WFOEs
Plan allocation					
1980-84	12	0	0	0	0
1985-89	9	0	0	0	0
1990-93	12	0	0	0	0
Bank loans					
1980-84	82	80	na	25	na
1985-89	72	67	81	24	37
1990-93	76	78	53	47	27
Retained earnings					
1980-84	6	20	na	75	na
1985-89	18	33	19	74	63
1990-93	9	22	47	47	73
Share/bond issues					
1980-84	0	0	na	0	na
1985-89	1	0	0	0	0
1990-93	3	0	0	6	0

Source: Perkins and Raiser (1994, Table 12) from a survey of 300 coastal province enterprises.

Table 7
Comparison of Growth and Efficiency of the SOIEs and TVEs, 1979-1991

	National Industry	SOIEs				TVEs			
	Y	Y	K	L	TFP	Y	K	L	TFP
Growth Rate	13.3	8.4	7.8	3.0	4.0	25.3	16.5	11.9	12.0

Source: Weitzman and Xu (1994, p. 28).

Table 8
Estimated Rates of Annual Productivity Growth in Chinese Industry (% change)

	1980-84	1984-88	1988-92
A. Total Factor Productivity			
State sector	1.8	3.0	2.5 ^a
Collective sector			
Urban and township	3.4	5.9	4.9 ^a
Township-Village	7.3 ^a	6.6 ^a	6.9 ^a
B. Labour Productivity (real terms)			
State sector	3.8	6.2	4.7
Collective sector			
Urban and township	8.6	7.0	13.8
Township-Village	5.8	14.4	17.7

Source: Taken from Jefferson and Rawski (1994, p.56).

^a Preliminary results.

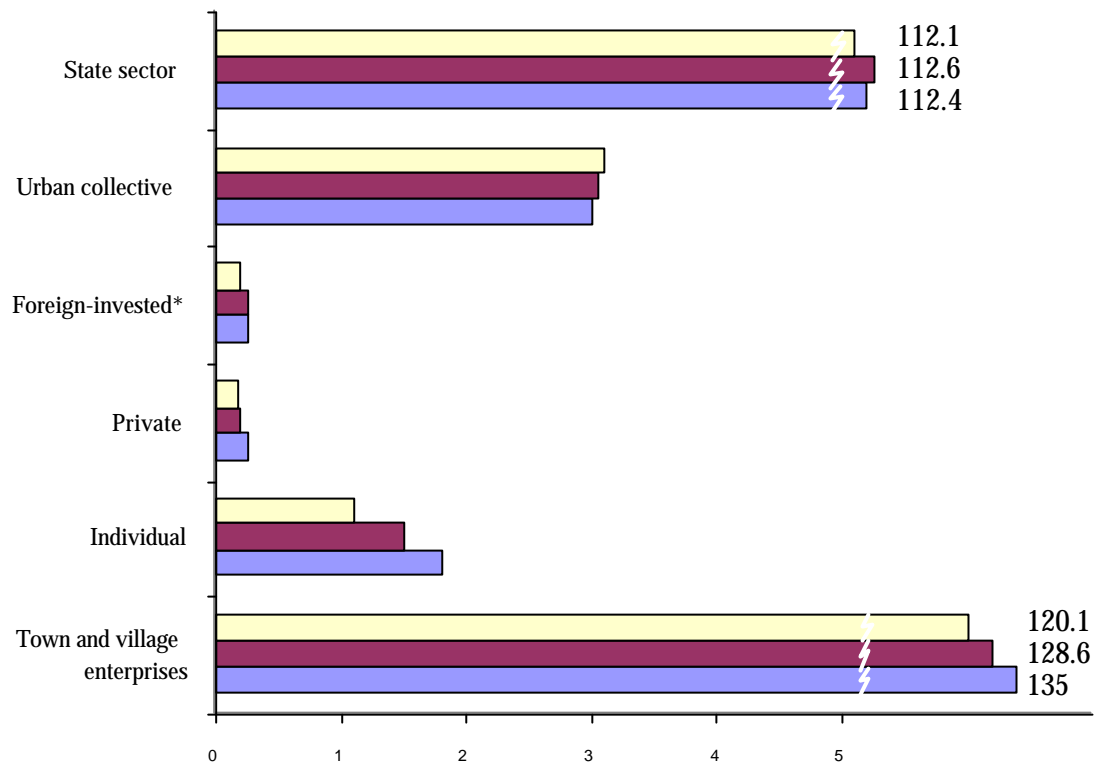
Table 9
Gross Output Value of Industrial Enterprises by Region, 1990 and 1994
(Yuan '00 million)

	Year	SOEs	Urban	TVEs	Private	Others	Total
Coastal Region							
	1990	6570	9313	4072	626	978	21559
Per cent of total		30	43	19	3	5	100
	1994	13262	16430	22323	4584	8180	64778
Per cent of total		20	25	34	7	13	100
Central Region							
	1990	3930	3392	1172	388	36	8917
Per cent of total		44	38	13	4	0	100
	1994	7500	4166	2277	426	843	15212
Per cent of total		49	27	15	3	6	100
Western Region							
	1990	1563	1149	385	145	21	3262
Per cent of total		48	35	12	4	1	100
	1994	4220	1766	1819	1017	631	9453
Per cent of total		45	19	19	11	7	100

Note: The coastal region consists of Shanghai, Beijing and Tianjin municipalities and Jiangsu, Zhejiang, Fujian, Shandong, Guangdong Hebei, Liaoning, Guangxi and Hainan provinces. The five dynamic provinces are Jiangsu, Zhejiang, Fujian, Shandong, and Guangdong. The central region consists of Shanxi, Jilin, Inner Mongolia, Heilongjiang, Anhui, Jiangxi Henan, Hubei and Hunan. The western region consists of Sichuan, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai, Ningxia, Tibet and Xinjiang.

Source: State Statistical Bureau, *China Statistical Yearbook*, 1996

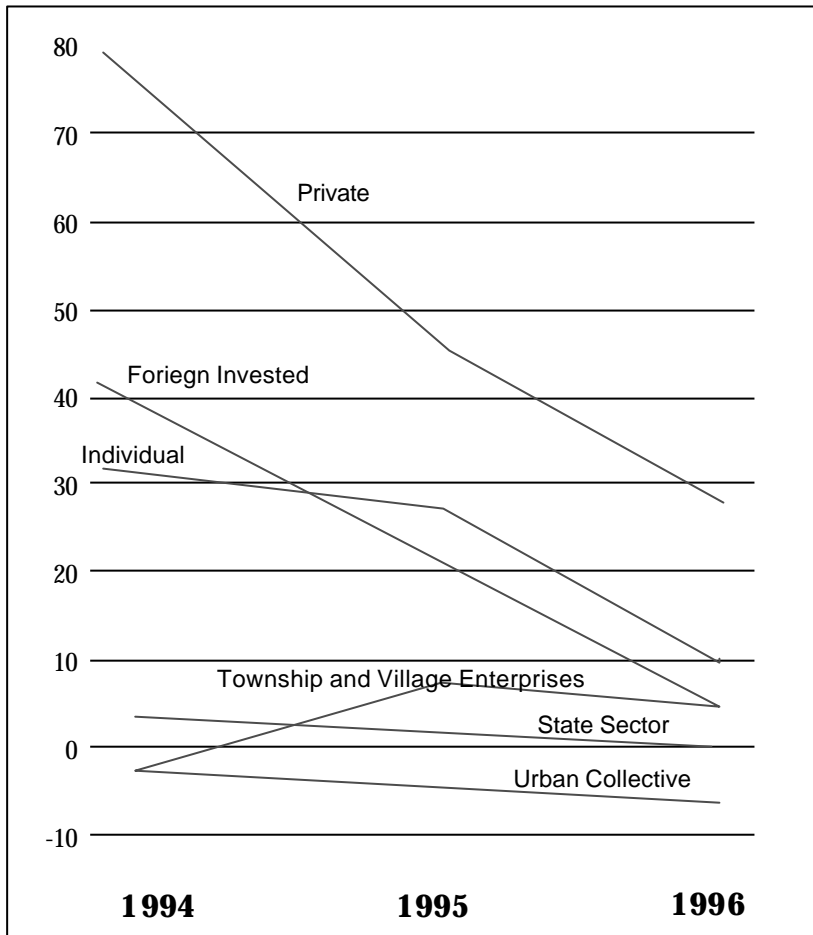
Figure 1
Employees by Sector 1994-96 (millions)



* Including investment from Hong Kong, Taiwan and Macau.

Source: State Statistical Bureau, *China Statistical Yearbook*, 1997.

Figure 2
Growth in Employment By Sector (%)



Source: State Statistical Bureau, *China Statistical Yearbook*, 1997.