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Labour Manoeuvrability and Economic Performance in Township-Village Enterprises: *The Case of China*

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Abstract

The purpose of this paper is to explain the relationship between economic performance and labour manoeuvrability of township-village enterprises in the Jiangsu province, China. We start with a general overview of the development in the Chinese economy and the functioning of labour markets. Next, we perform a statistical analysis on economic performance and labour market behaviour based on a sample of 103 enterprises. The flexibility to fire employees turns out to have a considerable impact on growth in added value of the enterprises, whereas hiring flexibility appears to have negligible effects.

Keywords: China, Township Village Enterprises, Labour Adjustment
JEL-Codes: D21, J21, J23, L10

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Introduction

Political-economic driving forces have exerted a major impact on regional development in China. From 1978 onwards, the Chinese economy has undergone a transformation process from a central state economy to a socialist market economy. In this context, we have observed not only the emergence of private enterprises, as we know them in western economies, but also those enterprises that through government control and ownership structures fall somewhere in between private enterprises and governmentally managed companies (Chang and Wang, 1994). These are not state-owned, collective enterprises, but they do neither exactly qualify as being privately structured. These so-called Township-Village Enterprises (TVEs) are controlled by their Township-Village Government (TVG), which distinguishes them from genuine private enterprises. Local ownership and its distributional effect differentiate a TVE from a state owned enterprise (SOE). When we compare such TVEs with state-owned enterprises, TVEs have disadvantages in terms of labour skills, technology, educational levels of staff, access to bank loans and government support. But the disadvantages are outweighed by the advantages in ownership and governance structures, personal contact systems and labour relations, and conditions of institutional arrangements (Perotti et al., 1999 and Sun, 2001). . Fujitu and Hu (2001) found that areas with a decline of the share of state-owned enterprises and the growth of TVE had a significant influence in aspects of income distribution and production agglomeration.

Notwithstanding positive results, there is much discussion about the TVE sector including the issue of property rights (or the lack thereof). Another important phenomenon is the positive economic performance of the TVEs. Trust in community relationships of a TVE type would be a plausible response to this and these issues have often been mentioned and documented. However, the labour market adjustment in TVEs is as yet not extensively documented in the literature. An interesting contribution on labour market flexibility in Taiwan can be found in Van der Meulen Rodgers and Nataray (1999). Impacts of the growth of TVEs on regional economic growth has been studied by Fujita and Hu (2001). They found that the income and

production levels of regions with a considerable decline of the share of state-owned enterprises and a considerable growth of TVEs diverges considerably from regions where the growth of TVEs do not appear.

In this paper we analyse the high flexibility in labour adjustment by simply hiring and firing personnel as well as the potential positive relationship with a firm's economic performance. In the non-state sector, job mobility is more widespread and labour is even recruited in other regions (Lu and Perry, 1997). The extent to which this takes place is however, unclear, and whether or not recruitment occurs in an efficient way also remains to be seen.

The organization of this paper is as follows. We start by elaborating on the phenomenon of TVEs and the relationship with the Chinese economy. In particular, we focus on the Chinese labour market and its institutional settings. Next, we describe the research design and interpret the outcomes of our statistical analysis, where the focus is on labour flexibility and economic performance of the TVEs. We will also offer concluding remarks and suggestions for further research.

Framework of the Township-Village Enterprises

The Chinese Economy

The purpose of this section is threefold. First, we will describe the institutional framework of the Chinese economy. In the second place, labour markets and labour migration will be discussed, and finally we will pay attention to the phenomenon of township enterprises.

The Chinese economy is a counter example for many (former centrally-controlled) economies in transition. The Chinese economy can be considered as a socialist market economy, where the reforms take place gradually. For a general informative overview of recent developments of the Chinese economy we refer to Chai (1997).

An important emerging sector in the Chinese economy is the rural industry. The growth in this industry has always been closely related to agricultural conditions. Initially, the agricultural sector gave financial support to rural non-state enterprises: the township-village and private enterprises (see Haiyan, 1990). By 1984, this situation was reversed and part of the profit from the TVE-industry was transferred to agriculture.

Important for the performance of the TVEs is the system of rural communities, which can concisely be described as follows. The highest government level is the country level. China is divided into 31 provinces, which include three city-provinces and 5 autonomous areas. The (regular) provinces are split up into (urban and rural) counties. In some cases there are "city-regions". These regions cover not only the city itself, but also the entire surrounding area. In this case, a city can include more counties and towns. Another example of a region can be an area inhabited by a minority. In general however, the level below the province level is the county level. From the next level onwards, a specific division can be made for China's rural sector. There are three levels of rural communities (Byrd en Lin, 1990):

- The *Township (Xiang)*: formerly the Commune. This is now the lowest level in China's governmental hierarchy. It has an articulated government structure and the typical township has a population of some 15,000 - 30,000 people. At the township level, the party committee is in charge and the township government carries out routine administrative duties, such as allocating procurement quotas, enforcing the implementation of the quotas and collecting taxes. In addition, the township government oversees the running of township enterprises and provides hospitals and high schools. The head of the township government is usually a member of the party committee. The economic co-operatives at this level provide financial services, agricultural input, supplies and services related to the marketing of output (Carter et al., 1996);
- The *Village (Cun)*: formerly the so-called Brigade. This is not a separate level of government, but it does have governmental functions and a community structure. Villages generally consist of a population falling in between one and two thousand. A branch of the township party committee is in charge of the village. The village committee has similar functions to the township government, but on a smaller scale, such as managing village enterprises and providing health clinics and elementary schools. The village committees have some economic co-operatives, but not as many as exist at the township level;
- The *Production Team (Cunmin Xiaozu)*: a "villagers small group". A production team generally consists of a group between 20 and 30 households or families, with a total of about 150 people. The *cunmin xiaozu* is the equivalent of the former production team. It owns the land (the central government establishes the length of

land leases, currently thirty years), contracts out land-use rights to individual households, and passes on a share of the mandatory procurement quotas to individual households. It is also responsible for distributing tax obligations to each household. Moreover, in some areas this unit provides machinery services and customs work.

Spatial Labour Markets in China

In China the allocation of recruited workers depends on the type of vacancy. Most of the lower educated workers are recruited from labour offices. These offices are left over from the old days when they used to assign personnel to an enterprise. Nowadays, a firm can recruit its own labour from these offices (in line with the Western situation). Specialised labour, for instance, technically skilled labour, is even hired from distant sources if necessary. Some workers within the firm may be given training and schooling to fill a specific vacancy, but the greater part will be recruited externally. For this specific type of recruitment, Chinese enterprises will go as far as using head-hunters for finding suitable personnel. For high-level functions however, China still relies strongly on the old methods. To climb the hierarchical ladder, contacts used to be crucial. As mentioned, this situation is changing; however, the so-called 'nepotism' still exists, especially for high-level functions. This might very well be a reason for unmotivated workforces and low productivity.

To understand migration in China's rural areas it is necessary to look at the spatial labour market boundaries. Xin (1990) recognises three types of labour markets and a set of data is given on labour flows between the different institutional levels. The three levels of labour markets are defined as follows: (1) interregional: among provinces and counties, (2) intercommunity: among villages and townships in the same county and (3) intra-community: among firms in the same community**.** Xin's research on recruitment of personnel shows this to be significantly less from outside the intercommunity labour market level than from inside.

A very important point of discussion in the context of labour-migration is the issue of the Resident Registration System (the *hukou* system). In the early 1950s, the communist government chose to give top priority to the development of heavy industry. In this capital-scarce economy, it was necessary to introduce a package of policies to reduce the production costs of heavy industry. A "cheap food" policy and

urban housing subsidies reduced urban labour costs. In order to maintain this urban-biased regime, the commune system tightly controlled farm-worker migration, thereby preventing rural workers from moving into the cities. At this point the government also introduced the *hukou* system, which treated the urban and rural population differently, so that the number of subsidised urban residents was limited (Carter et al., 1996). With resident registration it became virtually impossible for a person to move to another region or province for the purpose of work. The consequences of this resident registration system are numerous. If a person wants to seek a job at location A, but has his registration at point B, migration becomes very difficult. It remains possible for him to start working in A (provided he can find work, of course), but the implications are far-reaching. First of all, the worker will probably have to be satisfied to earn lower wages than his colleagues who have their *hukou* in location A. He will also have to pay more for his housing and living and, finally, he will have to pay more taxes (information based on interviews and conversations with Chinese in Jiangsu). As previously mentioned, all these discouraging tactics are used as a method to minimise relocation to the "popular" regions.

Under this *hukou* system most farmers will not give up their land, which is viewed as a security of income because of the Household Responsibility System (HRS). Under the HRS, individual households have become independent production units, which maximise their income by optimising their resource allocation. Emigration, or more precisely, employment seeking outside the home village, is not only a migrant labourer's own choice, but, more importantly, the choice of his or her entire family. Chinese migrant labourers are not rootless and they are in fact insured by their lawfully protected (under the HRS) farmland. With this land and the family as an income buffer, the migrant labour wage is highly flexible and the migrant labour market position is less risky. So, while the family stays home to insure the income from the land, the migrant labourer goes out to seek a job in attractive regions. Together with the money earned by his family at home, each income he makes is additional.

Hence, despite the *hukou* system, labour migration persists. With the financial backup of the family, people can work for lower wages and forgo formal resident status. Because of the HRS, workers still choose to migrate, and although the *hukou* system makes it hard, they can still earn more money than when they stay home. Once migrated, workers are encouraged through the *hukou* system to (Wu et al, 1996):

- save more by minimising their consumption in cities (in fact, by hardly participating in urban social life)
- transfer money to their home villages rather than to invest in cities
- minimise their contributions to and even evade their tax obligations.

As a consequence, the *hukou* system results in a continuous flow of money and human capital (return migration) back to rural areas, which stimulates the rural economy. Urban enterprises these days are more willing to employ workers who do not have the formal resident status. However, they experience difficulty in doing so, because the current access to housing and public utility services is designed to benefit only formal urban residents. Although the majority of the food subsidies has been eliminated by the mid-1990s, housing subsidy as well as the HRS barrier to migration to the cities still remain (Carter et al., 1996).

Township Village Enterprises

Before 1949, China was not known for its rural industry. By the early 1980s the country (compared to other poor and populous economies such as those of South or Southeast Asia) stood for a hothouse of rural industrialisation (Putterman, 1997). Clearly the policy of the intervening years helped to spawn such industrial growth. This resulted in an environment in which Township-Village Enterprises (TVEs) came into existence. The TVEs operate in this rural industry sector. The subsequent recent shift to a more competitive, market-mediated economic environment did not mean the end for the TVEs. On the contrary, assets and advantages 'incubated' in the Mao period proved even more gainful in the more competitive and market-driven early post-Mao era (Putterman, 1997).

The primitive stages of TVEs can be traced back to 1958, the time of the great leap forward and the inception of the commune system. The communes set up many small-scale industrial enterprises, and all of them failed shortly after. These failed experiments were the first attempts at rural industrialisation in which community governments played an essential role. During the nation-wide agricultural mechanisation drive of the early 1970s, rural small-scale industrial enterprises rapidly started to re-emerge. Most of these enterprises started as agricultural machine repair shops and food processing mills. Many of them soon became subcontractors of State

Owned Enterprises (SOEs) in nearby urban areas. These community enterprises were known as commune and brigade enterprises (CBEs), the predecessors of the TVEs.
As constraints on non-farm activities were gradually relaxed, more and more resources were freed for allocation in markets, so that both purchasing power and investible resources grew, and the growth of CBEs and their successors accelerated, mainly due to the higher farm prices of the early reform era. Since 1979, the TVEs have become the most dynamic sector in the Chinese economy. As the HRS replaced the commune production scheme in agriculture, the community government shifted its focus to rural industrialisation. In 1984, with the abolition of the commune system, the central government renamed commune and brigade enterprises as township and village enterprises.

In the 1980s the TVEs continued to have favourable access to financial resources, due to both retention of profits and the close ties between rural banks and rural local governments. Moreover, the entrepreneurial and organisational capabilities of local governments continued to offer support to power the TVE engine. The TVE flexibility and the relative absence of bureaucratic hurdles made them attractive partners for foreign businessmen seeking to contract them for labour-intensive assembly and processing work. At the same time, the low TVE wages and land costs appealed to state enterprises looking to subcontract some of their own operations (Putterman, 1997).

The structural position of the TVEs was, however, now somewhat different from that of their Mao-era predecessors. Reform opened up the opportunity for more commercially-oriented activities, and the TVEs competed with state and urban collective enterprises and with nascent private ones. The TVEs were in a privileged position, because they had both greater manoeuvrability and sharper incentives (or 'harder budget constraints') than state enterprise counterparts. At the same time they had superior access to funds and input in comparison to private enterprises.

Thus, TVEs played a large role in the emergence of a new 'third sector' of the Chinese economy, a sector saddled with neither the rigidities of the state enterprises nor the extractive quota burdens of staple agriculture. Moreover, this only truly commercial part of an economy in transition to market co-ordination took centre stage in the accelerated expansion of China's economy. At the end of 1992, China had 48,200 townships and 806,000 villages. On average, each township with a population of 18,000 has 8.2 township enterprises with 66 employees per enterprise. Each village

with a population of approximately 1,000 has 1.4 village enterprises with 23 employees per enterprise (Wu et al., 1996)

Weitzman and Xu (1994) state that TVEs are vaguely defined co-operatives. According to the official definition however, TVEs are collectively-owned enterprises located in townships or villages. More specifically, the township or village that establishes the TVE, owns the firm collectively. The property rights of TVEs can only be executed collectively through the representative of the community. In practice, the most common case is that a community government is regarded as the representative of the residents, and thus is the *de facto* executive owner of the TVEs in the community (Weitzman and Xu, 1994).

As regards 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 collectively sign a contract with the executive owner, i.e. the community government. If the TVE is determined jointly by the community governments and the employees (Weitzman and Xu, 1994), workers in the TVE sometimes also have the right of vote to approve or disapprove the TVG's choice of a manager. For two obvious reasons managerial nominees are hardly, if ever, disapproved of by the workers:

- The TVG has to initiate a vote. If it is satisfied with a manager, the TVG is not required to initiate a vote. The manager can thus remain in office indefinitely;
- The TVG controls many other aspects of a local citizen's life, including who can work in the TVE. Workers therefore would rarely want a confrontational relationship with the TVG.

However, since the local citizens officially own the TVE collectively, control by the TVG means that there is a separation of ownership and control in the TVE (Chang et al, 1994). This is, of course, also common in both capitalist firms and State-Owned Enterprises (SOEs). What differentiates the TVE from these other forms are the source and the completeness of the control right of a non-owner. In capitalist firms, managerial control is derived from the voluntary delegation of the right by the owners through private contracting in a mutually beneficial manner (Chang et al., 1994). Usually when the control right is delegated, mechanisms are also designed to force the

manager to give up this right, should the firm consistently perform below an expected level. Managerial control in capitalist firms, therefore, may be said to be conditional or incomplete. In contrast, the control right of the centre over SOEs is derived from state power. Unless the centre chooses to give up this right, there is almost no means by which citizens can take back this right from the centre. Thus, the control of SOEs by the centre is almost unconditional and absolute.

Higher government authorities appoint the TVG officials. Their control over the TVE is also derived from state power. This is similar to the case of SOEs but different from those of capitalist firms. Since there are no mechanisms for the local citizens as the nominal owners to take back control from the TVG, the TVG's control over the TVE is more complete than managerial control of capitalist firms.

Several new developments concerning TVEs have emerged since 1994. These developments have caused changes in the situation as described above (Wu et al., 1996). One is the rise of the mixed corporate form known as "joint-stock co-operatives". Under this form, TVE shares are sold or distributed to TVE employees and managers or community residents in the form of both "collective shares" (one-person-one-vote) and conventional individual shares (one-share-one-vote).

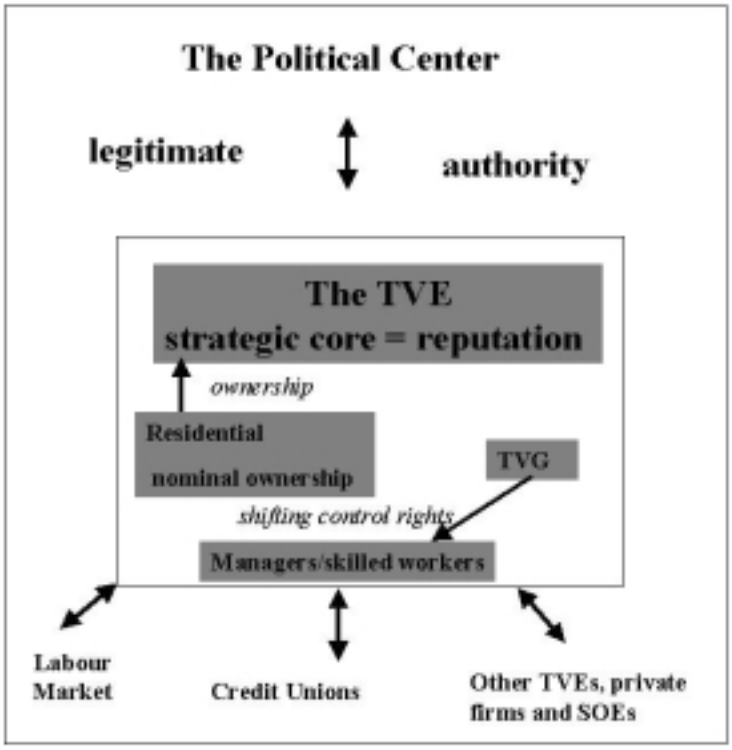
Another development is the partial privatisation of TVEs, mainly in the form of sales of control rights to managers and employees or to foreign investors. After the partial privatisation, the community government continues to play a role in rural industrialisation by concentrating its attention on investment in infrastructure (e.g. power supplies, roads and harbours), co-ordination and urban planning, and other conventional public works. In many cases, the community governments continue to hold a minority stake in partially privatised former TVEs.

The third significant development, which will have potential impact on village-run enterprises, is the direct election of village leaders by the village residents. By 1995, about one-third of the villages had already formed "village self-governing charters", more than one half of the villages had established a "village resident congress" and more than 90% of village residents had participated in the elections. China even promoted direct elections in villages, and model villages were established in 63 counties, in 3,917 townships and in 82,266 villages.

To understand the issue of control and ownership within TVEs, Figure 1 attempts to illustrate the internal and external strategic framework in which TVEs have to operate. In this framework the TVE is presented as a strategic core, which can be

visualised as a “reputation capital” or, in broad terms, “goodwill”. The strategic core or internal structure of the TVE is presented as a combination of ownership and control. The nominal ownership of the TVE is, as proposed by Chang and Wang (1994), assigned to the local residents. In the beginning, the control rights rest with the TVG; however, they shift from the TVG to the managers and skilled workers in the TVE after some time. An arrow indicates this in Figure 1. This last issue finds support in most recent new developments, as outlined above. Figure 1 also shows the relevant external elements of TVEs, in particular other firms, the union, and the (spatial) labour market. This paper particularly focuses on the latter aspect.

FIGURE 1
THE TVE AS AN EXTERNAL AND INTERNAL STRATEGIC FRAMEWORK



Source: Smyth (1997)

Different factors influence the spatial labour market of the TVE sector. One important factor is the educational level of the workers. Lina (1990) provides data on the educational level in the counties Nanhei and Shangro (see Table 1). In this Table, LSE

worker stands for Local State Enterprise worker. TVP are rural non-state enterprises, or township, village and private enterprises. The data in Table 1 do not add up to 100 per cent, because not all workers in the sample responded to this questionnaire. Interestingly, the share of lower-educated workers is much higher in TVP enterprises.

TABLE 1
EDUCATIONAL LEVELS OF WORKERS IN NANHEI AND SHANGRO
(Percentages)

Educational level	LSE workers	TVP workers
No schooling	0.0	2.1
Primary school	2.5	23.9
Higher primary school	13.6	17.8
High school	38.3	39.3
Senior high school	25.9	17.5
Higher education	11.1	8.9

Source: Lina (1990, p. 405)

Another factor is the availability of jobs, which is influenced by, among other things, the location factors of the region. This of course is very important in China, which is such a large country with big differences in economic development per region. For the TVE sector, as for all industries, the favourable regions are the provinces in the coastal area. Economic development is more progressed here than in the more inland provinces, as is the availability of labour.

In the light of this study on labour flexibility (and performance), other relevant factors include wages and contracting systems. These two are closely related in the TVE sector. With the introduction of the contract labour system in the 1980s, an enterprise's flexibility in selecting new workers and dismissing unsuitable ones was definitely enhanced. Labour Decree No. 11 of 1983 extended the new system to the employment of all new workers (Chai, 1997). Contract labour replaced tenured labour. No longer were workers hired for life, but for a specific period of time, and so the freedom of enterprises to hire, discipline and fire workers was reinforced.

The reforms also gave enterprises more freedom in determining the pay of workers. Since 1983 the wage fund was no longer fixed, but was allowed to fluctuate either wholly or partially in line with the enterprise's performance. TVEs generally suffer less state intervention, face a more complete market environment and enjoy greater access to the labour market than state enterprises. Also, in general, local labour supply and demand have a stronger effect on wages. Community governments,

however, exercise varying degrees of control over their firms (Quhui et al, 1990). The income of managerial personnel is composed of, for instance, basic wages, position wages, floating wages and annual bonuses. Bonuses are in general related to enterprise performance. The determining of workers' incomes also varies widely in different counties. Although the total wages are usually linked with enterprise profits, the monthly earnings of workers are determined in completely different ways. Township economic commissions can decide the amount, or it can consist of fixed wages, piece rate wages and bonuses. Another method is based on piece-rate wages in combination with bonuses (Quhui et al, 1990).

In the light of the considerations mentioned above, we may conclude that labour is becoming less dependent. Contract systems have been implemented, while incomes of workers, although decided quite differently from place to place, are based more on productivity than on a basic wage. The effect of these two factors could be higher labour mobility, which is an important fact to bear in mind in our further empirical research on labour flexibility in TVEs.

Research Design, Data Collection and Results

Research Design

In an attempt to explain their economic performance, our research focuses on the functioning of labour markets within the TVE sector. First, let us describe labour manoeuvrability. In our analysis we take for granted that labour manoeuvrability is influenced by flexibility and adjustment. Flexibility, in this case, can be defined as the possibilities and capabilities of an enterprise in quickly hiring and firing personnel. Labour adjustment is defined as the actual result of this flexibility.

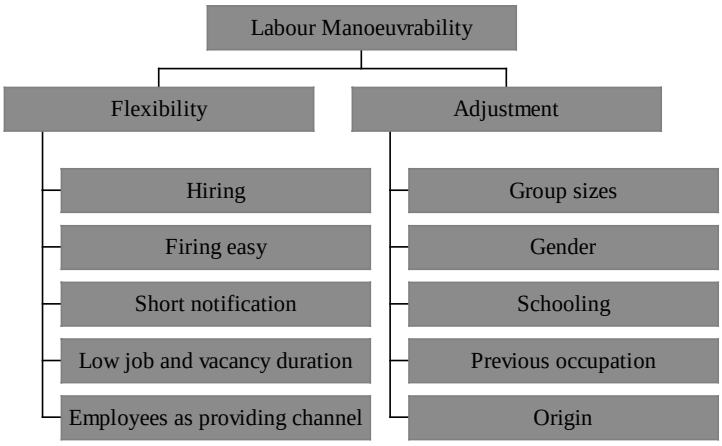
The second step is the way labour manoeuvrability is measured. For this purpose a questionnaire was designed. The questionnaire contained variables, which indirectly, through adjustment and flexibility, affect the latent variable 'labour manoeuvrability'. Therefore, questions are used which measure the adjustment and the flexibility of an enterprise, based on the descriptions given above. To measure flexibility, the questionnaire comprised questions on TVE strategies regarding wages and recruitment, and on managerial steps the enterprise has taken. As mentioned before, the questions on adjustment focus more on the effect of the action undertaken. The size of the group is a possible example of an adjustment indicator. Important other

criteria for flexibility are: difficulty in firing, advance notification, vacancy duration, job duration and the channel that was used to find new personnel. Most questions on adjustment regard gender, schooling, previous occupation and origin. By using these and several other questions in our questionnaire, an enterprise's rate of manoeuvrability is approximated. Figure 2 sketches a picture of how the most important questions can indirectly indicate the rate of labour manoeuvrability.

Another major issue is economic performance. This can be measured by implementing several performance indicators. The questionnaire uses added value, realised profit, taxes and product variety change. Besides these four main indicators, there is also another category. Three detailed questions related to the expansion plans of an enterprise serve to provide a more precise picture of its performance. In the first exploratory presentation of the results, it remains to be seen which of these five is the appropriate indicator to be used in an analysis.

In addition to these main items, the questionnaire also sketches a complete picture of each enterprise. Questions on personnel numbers, origin, education and the firm's institutional structure were used for this purpose. These questions mainly concern the years 1997, 1998 and 1999.

FIGURE 2
INDICATORS OF LABOUR MANOEUVRABILITY



The questionnaire was distributed among TVEs in the Jiangsu province in the year 2000. Jiangsu is a relatively rich province in the generally rich eastern coastal part of China. With a Gross Domestic Product (GDP) of 719,995 million yuan, Jiangsu is the

second largest region in China, after the province of Guangdong. With its 9 per cent of China's total GDP, Jiangsu is an important player in China's economy. The population of 71,820,000 however, also belongs to the five highest regions. Jiangsu probably may not present us with a complete picture of the Chinese TVE sector, but it does certainly present interesting data on the well-performing TVEs, which ultimately is the most interesting input for our research.

Data collection

The data collection process resulted in a total of 103 completed questionnaires, thereby covering TVEs throughout the Jiangsu province. This process can be characterised by three subsequent stages. In the first stage we sent 180 copies by mail to TVEs all over the province of Jiangsu. This mailing prompted a response of 29 copies. In the second stage, direct face-to-face interviews were held in the Wuxi county. A total of 34 TVEs were visited in two different townships. This period was also used as a test period to determine what difficulty enterprises might experience in filling out certain questions. In the analysis, these problems will have to be taken into account. The enterprises visited at that stage were all different to the 180 that were sent a copy of the questionnaire by mail. This resulted in a subtotal of 63 questioned TVEs. In the last stage, interviews were held in the vicinity of Nanjing. In this way, it was possible to gather a number of 40 copies in a relatively short period. Again, different enterprises were visited, so there was neither any overlapping, nor "checking up" on TVEs that did not respond to the mailing.

Tables 2A-2D show the descriptive statistics of the sample size concerning firm-related data. There are clearly two major structural forms, Collective and Private enterprises. The Joint ventures are an important issue. They are mainly also private enterprises, and as this category is actually almost twice as large, it is better represented than the collectives. A large diversity can be seen in the size of the TVEs and in the different performance indicators. The change in performance indicators (respectively, percentage growth of the added value, realized profits, taxes and product each per employee, abbreviated as PI) is measured as:

$$\text{growth of PI} = \left(\left(\frac{\text{PI}}{\text{size}}\right)_t - \left(\frac{\text{PI}}{\text{size}}\right)_{t-1} \right) / \left(\left(\frac{\text{PI}}{\text{size}}\right)_{t-1} \right) * 100$$

A few TVEs were taken out of further research because their added values stood out too much to be considered as reliable information. The economic growth rates can clearly be seen from the indicators (Table 2C). It seems that added value is the most robust and stable candidate among the indicators to be used in our empirical analysis. Machinery is obviously the largest branch of industry; however there are other, relatively small branches. Altogether, we note a great diversity within the TVE sector (see Table 2D).

TABLE 2A
FIRM RELATED DATA: STRUCTURES

	Frequency (percentage)
Collective	36 (36.4)
Private	26 (26.3)
Foreign investment	5 (5.1)
Joint Venture	17 (17.2)
Limited	5 (5.1)
Collective and Joint	2 (2.0)
Private and Joint	7 (7.1)
Others	1(1.0)

TABLE 2B
FIRM RELATED DATA: TVE SIZES (Employees)

Year	Mean	Standard deviation
1997	355.9	640.8
1998	348.9	643.6
1999	372.7	767.2

TABLE 2C
FIRM RELATED DATA: GROWTH PER EMPLOYEE (In %)

	Mean	Standard deviation
Added Value 97-98	14.5	57.2
Added Value 98-99	17.6	56.3
Realised Profit 97-98	14.7	81.9
Realised Profit 98-99	152.3	773.7
Taxes paid 97-98	21.2	68.7
Taxes paid 98-99	62.5	297.7
Added products 97-98	106.2	278.1
Added products 98-99	1.3	61.7

TABLE 2D
FIRM RELATED DATA: BRANCHES

Branch	Frequency (percentage)
Machinery	23 (22.5)
Food	4 (3.9)
Chemistry	15(14.7)
Clothing	5(4.9)
Building Materials	12(11.8)
Light Industry	7(6.9)
Zippers	2(2.0)
Fabrics	8(7.8)
Printing	5(4.9)
Electricity Utilities	5(4.9)
Painting	2(2.0)
Others	14(13.7)
TOTAL	102(100)

Tables 3A-3E show the descriptive statistics concerning the (new) personnel of the TVEs. On average, the number of hires in a firm amounts to approximately one fifth of the total employees; the firings to about five per cent. The informal recruitment character of the TVEs is apparent from the fact that most employers are attracted with the help of other employees (‘informal networking’) working in the TVE. The employees are upgraded, because the number of employees educated at more than upper middle school level is steadily increasing. The number of employees educated at a lower middle school level remains rather substantial, however. Table 3D illustrates the previous position of the hired and fired personnel. Of those fired, a substantial number was previously unemployed, which may be of interest when analysing the economic performance.

TABLE 3A
PERSONNEL RELATED DATA: GROUP SIZES (In % of total employees)

Persons	Mean (per 100 employees)	Standard deviation (per 100 employees)
Hires	18.7	38.9
Fires	5.0	8.5

TABLE 3B
PERSONNEL RELATED DATA: CHANNELS PROVIDING NEW PERSONNEL

	Absolute	Percentage of total hires
Relatives and Friends	66	5.7
Employees	508	43.9
Poster	212	18.3
Paper	32	2.8
Radio	0	0
Television	21	1.8
Labour Office	212	18.3
Head Hunter	1	0.1
Walk-in	25	2.3
Students (“claimed” while still at school)	47	4.0
Others	33	2.8
Total	1158	100

TABLE 3C
PERSONNEL RELATED DATA: SCHOOLING CURRENT PERSONNEL
(In % of total of given year)

	1997	1998	1999
No schooling	1.4	1.2	0.8
Not finished primary school	3.4	2.7	2.0
Primary school	8.7	8.4	6.6
Lower middle school	46.7	44.9	42.4
Upper middle school	25.8	26.6	26.4
Special or Technical school	9.4	10.9	15.2
Higher education	4.6	5.3	6.7

TABLE 3D
PERSONNEL RELATED DATA: PREVIOUS POSITION PERSONNEL

	Hires	Hires (%)	Fires	Fires (%)
School	206	17.8	4	1.8
Unemployed	230	19.9	89	41.2
Same job	254	21.9	43	19.9
Other job	159	13.7	80	37.0
Others	309	26.7	0	0
Total	1158	100	216	100

TABLE 3E
Personnel related data: duration of vacancies and jobs

Duration	Mean	Standard Deviation
Vacancy (in days)	13.9	26.1
Job (in months)	29.1	34.2

Correlation between flexibility and performance (added value)

Next, we aim to identify structural patterns among the variables flexibility and performance. A correlation analysis of the data presented in the previous part results in the following findings (see Table 4).

TABLE 4
CORRELATION MATRIX

	Hires	Hires by Employees	Hires this town	Hires other province	Fires	Fires unemployed	Fires this Town	Fires other province
Added Value	.06 (48)	.09 (48)	.15 (48)	.17 (48)	.62** (36)	.70** (36)	-.00 (36)	.509 (36)

Note.— number of observations in brackets
**relation is significant at a 5% significance level.

All together, the results presented in this section offer a broad spectrum of the situation in the TVE sector. In a subsequent section a regression analysis will be used to further test the relation between added value on the one hand, and labour flexibility on the other. However, at this point some provisional conclusions can already be drawn. It turned out that the strongest (and most positive) relation exists between the fired personnel and the added value growth. Based on a review of the literature, this was to be expected, since an enterprise tends to fire its least efficient people. It was also mentioned that the former contract system within the TVE sector has been changed mainly to a two-year contract system. These two-year contracts imply that, on average, people will leave an enterprise sooner and that companies are more prepared to fire people who are not performing well. Furthermore, it is no surprise to see that there is no real correlation between the vacancy duration and the added value growth. The average is not even two weeks, including a few really long periods. This confirms the flexibility of enterprises, but it does not say much about the effects on added value, since most durations are approximately the same. What is surprising is

the fact that the hires do not seem to correlate with the added value growth. A possible explanation for this could be that the recruitment of personnel is still mostly done through specific contacts. This “nepotism” is known to affect the performance of an enterprise.

Regressions

We will now present the results of various statistical explanatory experiments with which we aim to find out whether labour manoeuvrability positively affects economic performance. The model we investigated then reads as follows:

$$PI_v = f(LM)$$

where:

PI_v is a performance indictor captured by the growth of the added value of a TVE measured in relative (AV^R) or absolute values (AV^A); in terms of added value per employee;

LM is the labour manoeuvrability which consists of flexibility and adjustment. The linear model with variables to capture flexibility and adjustment of labour markets can thus be formalized as:

$$PI_v = \alpha_0 + \alpha_1 HIRES + \alpha_2 FIRES + \alpha_3 VACDUR + \beta' SCHOOL + \varepsilon$$

where:

$HIRES$ is the number of employees hired per year, in absolute terms or in number of hires divided by the total number of employees per year;

$FIRES$ is the number of employees fired per year, in absolute terms or in number of fires divided by the total number of employees per year;

$VACDUR$ is the vacancy duration in months;

$SCHOOL$ is a vector of schooling characteristics which consists of number of employees without schooling and number of employees receiving less than primary schooling (depending on the most appropriate model, in absolute terms or divided by the total number of employees per year). In the first analysis we also included the following categories: primary school, lower middle school, upper middle school, special (or technical) school and higher education. All categories were taken into

account in absolute and relative terms. Not all indicators shown in figure 2 are operationalized in our model due to data limitations. Labour flexibility is reflected by the number of hires, fires and vacancy duration. Labour adjustment is proxied by the variable *SCHOOL*

Table 5 shows the results of five regression models with the growth of the relative added value as the dependent variable and the number of hires and fires divided by the firm size, schooling characteristics and vacancy duration as explanatory variables. We also performed similar regressions with absolute added values, but they did not lead to better results (see Table in the appendix).

TABLE 5
REGRESSION RESULTS FOR THE MODEL WITH RELATIVE GROWTH OF THE ADDED VALUE

	Model I	**Model IIa**	**Model IIb**	**Model IIc**	**Model IId**
HIRESIZ	-0.02 (-0.02)	-0.24 (-0.24)	-0.08 (-0.09)	-0.15 (-0.16)	-0.06 (-0.06)
FIRESIZ	3.66* (3.95)	2.89* (3.43)	- [(a)]		
FIRESIZ* FIRESIZ			7.85* (3.94)		
F-UNEMPL				5.05* (3.94)	- [(b)]
F-UNEMPL * F-UNEMPL					13.57* (3.99)
NOSCHOOLSIZ[#]	-7.48 (-1.51)	-2.27 (-1.19)	-2.35 (-1.26)	-2.36 (-1.27)	-2.41 (0.20)
NOSCHOLFINSIZ[#]	1.75 (0.80)	1.78 (2.23)	1.55 (1.97)	1.53 (1.93)	1.45 (0.06)
VACDUR	0.00 (0.68)				
Constant	0.01 (0.12)	0.06 (0.82)	0.08 (1.25)	0.09 (1.26)	0.10(1.46)
N	40	85	85	85	85
R^2	0.46	0.19	0.22	0.22	0.23
Log Likelihood	-20.22	-64.59	-62.61	-62.63	-62.43

Note.— Abbreviations used: HIRESIZ: number of hires divided by the number of employees, FIRESIZ: number of fires (dismissals) divided by the number of employees, F-UNEMPL: fires previously unemployed divided by the number of employees, NOSCHOOLSIZ: employees without schooling divided by the number of employees, NOSCHOLFINSIZ: employees receiving less than primary schooling divided by the number of employees, VACDUR: vacancy duration in months.
(a), (b) Linear term is deleted because it turned out to be insignificant
[#] Other categories were deleted since inclusion did not improve the outcomes of the model.

In the first model (I), besides the number of hires, we included the firings divided by the number of employees and schooling characteristics**.** Since we have limited data on vacancy duration, the number of observations is 40 in this case. The number of dismissals divided by the number of workers shows a positive tendency that is significant for the relative growth in the added value. Model type II deletes the vacancy duration, because in Model type I it does have an insignificant zero effect, which might be partly due to the low number of observations of TVEs with a vacancy in the sample. The effect of the firings divided by the number of workers is somewhat smaller than in the first model, but nevertheless significant. We next continue by

estimating different specifications of model type II to search for the nature of the firing effect. In the second version of Model type II, we included firings as a quadratic term, and this turns out to have a considerable impact. Based on the correlation analysis (Table 4), Model IIc uses the number of fires, defined as previously unemployed divided by the number of employees; this appears to have more effect on the relative growth of the added value than the total number of dismissals divided by the number of employees employed in the previous models. The most considerable impact can be found by using the dismissals of previously unemployed people divided by the number of employees as a quadratic term, which is presented in Table 5 as Model IId.

To sum up, firing workers does clearly enhance labour market performance of TVEs whereas hiring workers does not. Especially the firing of - large groups of - workers that have been previously unemployed appears to have a major impact on added value growth.

CONCLUSIONS

This paper has analysed the impact of labour manoeuvrability on the economic performance of township village enterprises (TVEs) in China. An empirical analysis was carried out with the help of a data set based on the economic performance and labour adjustment of TVEs in the Jiangsu province.

A first exploratory analysis showed that especially the total number of people fired and those fired who were previously unemployed, is strongly correlated with the relative growth of the added value. The TVEs fire their least efficient personnel first. When firing them, they strongly improve their added value. Previously unemployed people are considered less efficient and are therefore dismissed first. Furthermore, the fact that hires do not correlate with the added value was explained by the ever-present “nepotism” situation.

From the regression results we conclude that firing workers appears to be an important determinant of the firm’s economic performance as reflected by the added value growth. In contrast, the hiring of workers does not affect the added value growth of the TVE’s. This finding is in line with our results revealed through the correlations, but now we also take a multi-dimensional, causal structure of the data

into account. Further investigation of the significant impact of fires has brought us the insight that dismissing previously unemployed workers particularly enhances performance. At the same time, it also becomes clear that firing large groups of (previously unemployed) workers appears to be very effective to increase the performance of the TVE. In other words, it turns out that massive downward adjustment of the firm's workforce (in relative terms) - as made feasible in the Chinese economy by the lack of protective legislation – helps to increase substantially the economic performance of that firm. Furthermore, it seems that workers who have been laid-off before are the first candidates in the firm to accomplish such an improvement in added value growth. This raises the interesting, but yet unanswered issue in our field research whether social stigmatization of previously unemployed workers plays a role in the selection process of dismissing those workers that are perceived (justified or not) to be less productive.

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APPENDIX

TABLE A1
REGRESSION RESULTS FOR THE MODEL WITH ABSOLUTE GROWTH OF THE ADDED VALUE

	Model I	**Model IIa**	**Model IIb**	**Model IIc**	**Model IId**
HIRES	0.00	0.00	0.00	0.00	0.00
	(-0.19)	(0.23)	(0.27)	(0.28)	(0.28)
FIRES	0.02	0.01			
	(1.71)	(1.06)			
FIRES*FIRES			0.00		
			(1.18)		
NOSCHOOL	0.01	0.00	0.00	0.00	0.00
	(0.33)	(0.13)	(0.24)	(0.25)	(0.11)
NOSCHOLFIN	0.01	0.00	0.00	0.00	0.00
	(-1.45)	(-0.52)	(-0.67)	(-0.69)	(-0.52)
FIRESIZ				0.04	
(Previous unemployed)				(1.88)	
FIRESIZ * FIRESIZ					0.00
(Previous unemployed)					(1.83)
VACDUR	-0.00				
	(-0.03)				
Constant	0.23	0.18	0.19	0.17	0.18
	(1.91)	(2.36)	(2.60)	(2.39)	(2.52)
N	39	86	86	87	87
R^2	0.102	0.01	0.02	0.04	0.04
Log Likelihood	-29.20	-78.87	-78.72	-78.10	-78.2

Note.— Abbreviations see Table 5.