

THE MOVEMENT OF LABOR IN CHINESE RURAL AREAS: WITH A FOCUS ON DEVELOPED REGIONS

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INTRODUCTION

THE Chinese economic reform program implemented in the past ten years has two components, one agrarian (reforming the agricultural economy) and the other urban (reforming the enterprise system). Under the agrarian reform program, a system of responsibility emphasizing household farming was introduced into agricultural production, and consequently the people's communes were dissolved. The industrial and employment structures in rural areas have also been modified. Thus a large number of changes have been carried out bringing positive results in a number of areas.

Table I indicates the changes in the composition of people employed in industry and the annual average rate of increase in different categories of the working population over the period from 1981 through 1988. One of the first things to note is that the portion of labor in the primary industry declined 15.6 percentage points during the seven years, while the share of those employed in nonagricultural sectors rose from 5.9 per cent to 21.5 per cent during the same period. The annual average rate of increase in the primary industry labor force during this period came 0.5 per cent, which means that most of the labor force increment in rural areas was absorbed by the secondary and tertiary industries. The number of employed persons in all nonagricultural sectors climbed rapidly except in the scientific and educational services where the growth rate was rather low.

The above-said change in the composition of employment as a macro phenomenon is already known, and has been analyzed in quite a few studies already published. But not much is known about what is happening at the micro level with regard to the employment situation for rural labor, the pattern of labor movement, the institutional mechanism involving labor migration, and the causes for such migration.

This paper sheds more light on the change in employment structure in rural areas and the inter-industry movement of labor, and deals with the following three aspects of this theme. First, we will examine the institutional aspect of the movement of labor, paying special attention to the *hukou zhidu* (the residencies and population system) and the employment-welfare-insurance system (the so-called three-in-one system). In doing so, we will analyze the patterns and range of movement in the labor force. We will also examine the socioeconomic structure as well as the labor market mechanisms in rural areas as the basis for the movement

of labor (Section I). Second, we will identify the forms of employment and the characteristics of the labor market in rural areas (Section II). Third, we will metrically quantify the factors that influence the job-related behavior of the work force in agricultural households as well as the mechanisms regulating inter-industry movement of this work force (Section III).

The analysis presented in this paper is confined to the Sunan area (the southern part of Jiangsu Province) and suburban villages near Shanghai. The data used for this analysis are those collected by me through surveys and questionnaires as well as from the available statistics. It should be said therefore that some of the conclusions drawn from this study do not apply to China as a whole.

I. INSTITUTIONAL ASPECTS OF THE MOVEMENT OF LABOR

The composition of industrial employment changes with economic growth, with a bulk of the population moving from primary to secondary and then from secondary to tertiary industries. This is well known as Petty-Clark's law. It is also common knowledge that in market economies workers move from one industry to another in the same process as they move from one area to another, and that the primary factor determining their job-related behavior is economic.

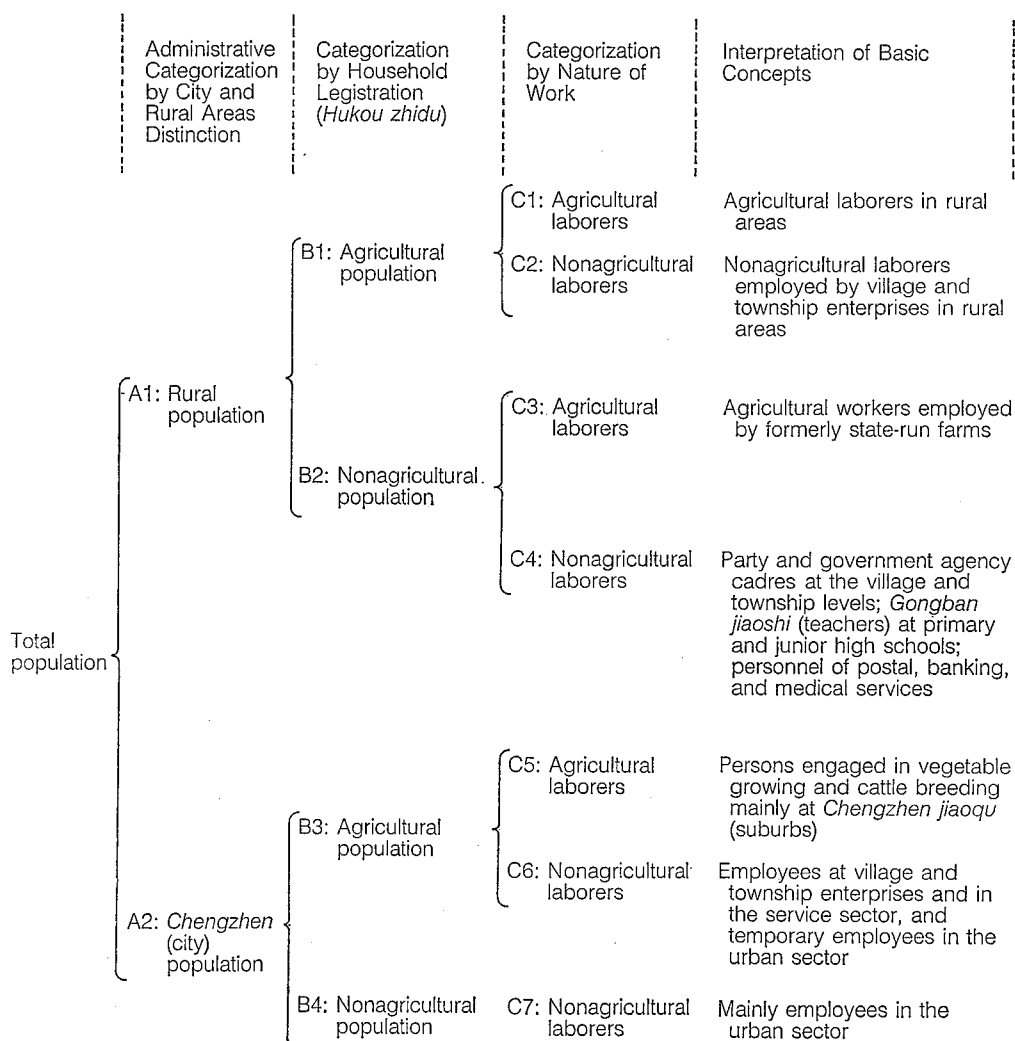
But in the Chinese case it would be almost impossible to understand the movement of labor without taking into full account the impact that institutional regulation has on this matter. This being the case, this paper examines the *hukou zhidu* and social welfare systems as institutions having the closest bearings on the movement of labor.

A. *Hukou Zhidu and the Movement of Labor*

Although at a glance the Chinese *hukou zhidu* would resemble the Japanese *koseki* (household registration) system, in substance and implementation it is something quite different. The Chinese *hukou zhidu* is a complete social system in its own right, not only registering the population, but also regulating population movement (including work force movement), social policy implementation, and all other aspects of social life. As such it is also utilized for administrative control. This system was created in 1958 with the completion of the collectivization of agriculture and the socialist transformation of urban economies, and has remained in effect to the present. It is linked with the employment system in the urban sector, and with the social insurance and rationing systems. Years ago it had been combined with the people's communes. Its main purpose has been to prevent the movement of population with the intention of obstructing population concentrations in cities, and thus facilitating planned management of the national economy [4].

Let us now examine the relationship between *hukou zhidu* and labor force movement. *Hukou*, or registration, is divided into two categories, nonagricultural and agricultural as shown in Figure 1. People registered as agricultural are classified as part of the agricultural population and those registered as nonagricultural are part of the nonagricultural population. As registry is hereditary, the division between the agricultural and nonagricultural populations takes on the nature of

Fig. 1. Concepts of Population and Labor Force in China



a status division. If a person's parents or mother carry nonagricultural registry, he/she is given nonagricultural registry no matter whether he/she lives in a city or in a rural area. This means that a household can have among its members both agricultural and nonagricultural members. Though one is thus born into the agricultural or nonagricultural category, one's status can nevertheless be changed. During the Cultural Revolution for instance, approximately twenty million urban youths, workers, and cadres were rusticated and sent to rural areas or the peri-

pheries of the country. Their registries as nonagricultural were canceled and replaced by agricultural registries. Conversely, a young person from a rural village acquires nonagricultural status if he/she enters a college or technical and vocational school. A worker or cadre originally from a village is nonagricultural in status while he/she is working in a city, and recovers his/her agricultural registry when he/she retires and returns to his/her original village. Upon returning, his/her child is qualified to move to a city and take up a job there in place of his/her parent, and the registry of the child is accordingly changed from agricultural to nonagricultural. These cases help show how this system works.

At the same time, the actual job a person holds has little to do with his/her registration. Persons registered as agricultural do not necessarily do farm work. As the nonagricultural sector in rural areas expanded rapidly following the economic reforms of the seventies and eighties, a large segment of the "agricultural population" was absorbed by village and township enterprises. Also quite a number of people classified as "agricultural population" have simply left their villages to work in the urban sector as temporary employees, as shown by C2 and C6 in Figure 1. On the other hand, C3 in Figure 1 shows that there are also people who are registered as nonagricultural but are doing agricultural work.

As these cases indicate, the registration categories do not coincide with job categories. Usually those who are registered as nonagricultural and reside in rural areas can be employees in the urban sector (for instance as employees of state or collectively run enterprises), but those in rural areas who are registered as agricultural do not have this privilege.

B. *Three-in-one System and the Movement of Labor*

The three-in-one system means that employment, welfare, and insurance are integrated into a single system in China. This system guarantees secure living for the urban population registered as nonagricultural and makes it practically impossible for the rural population registered as agricultural to move into the cities [4] [5]. First let us examine how workers are hired. The general practice is for urban enterprises, particularly state enterprises, to hire new workers not at their own discretion or out of their business needs but on the basis of personnel allocation by the Labor Bureau. Only those who are registered as nonagricultural are allocated in this manner. In other words, every nonagricultural person, having reached a certain age, is automatically or preferentially given a job while a person registered as agricultural generally cannot hope to be a regular employee in the urban sector unless he/she (1) goes to college, (2) is a child of a repatriated soldier of certain categories, (3) is a member of a farming household whose land has been requisitioned, or (4) is a child having the right to replace his/her retired and repatriated nonagricultural parent.

Let us turn now to the welfare and insurance systems. When an urban Chinese person gets employed, he/she obtains more than a job. Once hired as a regular employee in the urban economic sector, he/she can enjoy a wide range of benefits including supplies of foods and other daily necessities sold at the state-regulated prices or provided in kind, housing medical and educational services, life-insurance,

and pensions. He/she also is seldom subject to dismissal and so has little fear of being unemployed. In contrast, the rural working people registered as agricultural are not entitled to any such benefits even when they work in urban areas. Their status remains agricultural, and they can only hope to be hired as temporary workers in the construction industry shunned by urban status people, or they can work only in petty peddling businesses or services in the informal sector. Nor can they enjoy social welfare and insurance benefits. Their jobs are not only temporary, but unstable, subject to the given economic situation and policy changes. All this is because they are registered as part of the agricultural population. Generally their migration to major urban settings is institutionally prohibited, and though exceptions do exist, moving to urban sector and settling there as full-status citizens is extremely difficult for people registered as agricultural.

Nor is migration to small local towns (*zhen*) easy. The State Council's decree issued in 1984, titled "Notification on the issues of farmer migration and settlement in towns" (Guanyu nonming jinru jizhen luohu wenti de tongzhi), stipulates that farmers who are permitted to move to *zhen* (not including prefectural capitals) for settlement are only those who plan to work in the industrial, commercial, or service sectors of the *zhen* concerned, have proven ability in management, and have a permanent address in the *zhen* or have a family member(s) residing there, or have already been engaged in village and township enterprises for a long time. After moving to the *zhen*, the migrants are statistically treated as nonagricultural population, but they are not entitled to low cost food rationing. The people's communes in rural areas used to have their own three-in-one system, but this system collapsed as the communes were dissolved. Farmers thus totally lost social security advantages. This certainly works as a push factor causing farmers to migrate to cities in spite of the poor urban living conditions awaiting them.

C. *Patterns and Ranges of Labor Force Movement*

In spite of all institutional restrictions, the change in the employment structure as shown in Table I has continued to accelerate since rural reform got under way. There are four major patterns of labor force movement [5]. The first is inter-industry movement of the work force within the same town or village. This is called *litu bu lixiang*, meaning "leaving the homeland but not the rural area." This type of labor force movement occurs, as Figure 2 shows, between agricultural sector and the local nonagricultural sector which still remains integrated with the rural economy. The institutional restrictions of the registration and three-in-one system are the background against which change of jobs of this type occurs. Both the push factors on the part of the agricultural sector (small amount of farm land, low farming income, and hard farm work) and the pull factors on the part of the nonagricultural sector (higher income, attraction of nonagricultural work, and more job opportunities) work to accelerate this movement. Those individuals who quit agriculture still live in the same houses and villages, and continue to depend partly on agriculture for their income (they do farm work during the busy agricultural seasons). Since the beginning of the rural reforms, *litu bu lixiang* has been the major form of inter-sector labor force movement.

TABLE I
CHANGING EMPLOYMENT STRUCTURE IN CHINESE RURAL AREAS

	Composition of Employees		Annual Average Rate of Increase (%)
	1981	1988	
Primary industry	94.1	78.5	0.5
Secondary industry	3.8	12.3	21.9
Manufacturing	2.7	8.5	21.3
Construction	1.1	3.8	23.5
Tertiary industry	2.1	9.2	27.1
Transport, communications	0.3	1.5	27.6
Commerce, service	0.4	2.0	30.4
Science, education	1.2	1.2	3.1
Government agencies	0.1	0.3	20.4
Others	0.1	4.2	177.3

Source: State Statistical Bureau, *Zhongguo tongji nianjian* [Statistical yearbook of China] (Beijing: Zhongguo-tongji-chubanshe), 1981 and 1989 editions.

The second pattern is the inter-industry movement of labor force simultaneous with inter-regional movement. This is called *litu you lixiang*, meaning "leaving the homeland and the rural area at the same time." Falling in this category are students entering college, young people joining the military service, and other people becoming construction workers or service personnel in cities. Other than the case of students who definitely leave their villages and agriculture, the people who leave agriculture can do so only tentatively. Most of the soldiers after completing their term of service have to go back to their villages as agricultural registered persons while the workers in the informal sector in cities can lose their jobs any time at the whim of government policy and be returned home.

The third pattern is the movement of labor force between villages. This may be inter-industry movement or intra-agricultural sector movement. In some areas where economic development has been rapid, fast-growing village and township enterprises experience a labor shortage, requiring the importation of labor from other areas. In fast developing regions, a large part of the agricultural population is flowing out of villages causing a labor shortfall in the agricultural sector. In such regions importing labor from other areas is a must. On the other hand, economically backward regions have a labor surplus with many seeking jobs in other areas. Though still confined to specific areas, the inter-regional movement of labor force not accompanied by an inter-industry movement is already a visible social phenomenon.

The last movement of labor force is the recent explosion of the vagrant population. For economic and other reasons, a vast number of people are moving constantly throughout the villages and cities all over the country.¹

¹ This phenomenon will be dealt with in Wakabayashi's paper (see Chapter 7 of this issue), and will not be taken up here.

Fig. 2. Socioeconomic Structure of Chinese Rural Areas

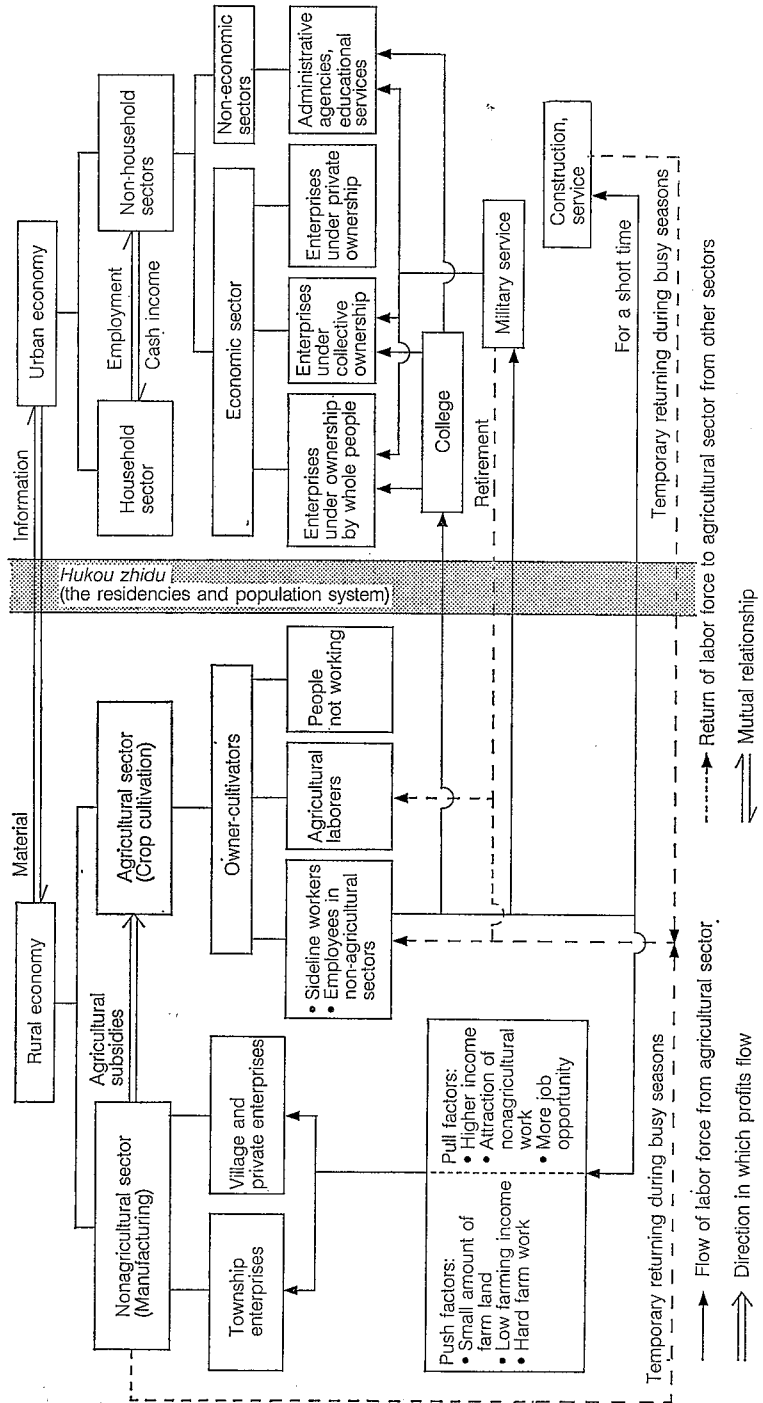


TABLE II
FORMS OF EMPLOYMENT OF THE FARMING FAMILY WORK FORCE IN THE SUNAN AREA
(January 1987)

	Family Farming Only	Mainly Family Farming	Mainly Other Industries	Only Other Industries	Not Working	Total
Male	74 (7.6)	22(2.2)	285(29.3)	38(3.9)	82 (8.4)	501 (51.5)
Female	162(16.7)	19(2.0)	197(20.2)	36(3.7)	58 (6.0)	472 (48.5)
Total	236(24.4)	41(4.2)	482(49.5)	74(7.6)	140(14.4)	973(100)

Source: From the results of my questionnaire survey conducted in January 1987.

- Notes: 1. Figures in parentheses are the percentages shares.
2. "Farming family work force" means the whole working population aged 14-65.
3. "Mainly other industries" means those spending half or more of their annual working days employed in industries other than agriculture; similarly, "mainly family farming" means those who spend half or more of their annual working days in farming.

II. FORMS AND CHARACTERISTICS OF RURAL LABOR EMPLOYMENT

How have the forms of employment in rural areas been modified under the said institutional restrictions? What are the characteristics of the rural labor market? These questions will be examined in this section using information obtained from my surveys.²

A. *Forms of Employment in the Farming Family Work Force*

Let us first take a look at the forms of employment in the farming family work force. I used a questionnaire to conduct a survey in the Sunan area, a typical rural area experiencing economic growth. Table II shows the forms of employment of the farming family work force by sex and by five categories: family farming only, mainly family farming, mainly other industries, only other industries, and not working. If the second and third categories are grouped together as "part-time farmers," the majority of the rural work force in Sunan falls into this category. It is clear from the table that farm laborers who engage exclusively in farm work account for only a quarter of the farming population. There is a clear difference between men and women, however. While a large group of men work mainly in other industries, women are polarized between "mainly other industries" and "family farming only."

B. *Forms of Employment of Persons Engaged in Agriculture*

Figure 3 shows the number of questionnaire replies from persons engaged in agriculture. Of these, 93.3 per cent said that their main work was farming. But

² For the outline of the surveys, see [2], [3], [4], and [5].

Fig. 3. Breakdown of Farm Laborers Working Days and Off-season Time
(Based on Questionnaire Survey)

Days Worked per Year	Ways Surplus Time Used during Off-seasons	Days Worked per Year for Sideline Businesses	Sideline Businesses Farmers Worked for
- 60 (11.0)			Village and township enterprise (20.9)
61-200 (47.4)	Working around the house (50.5)	- 30 (38.5)	Transportation (13.2)
201-250 (13.2)	Working in sideline businesses (30.8)	31-60 (24.2)	Commerce or service (12.1)
251-300 (12.1)	Enjoying leisure (4.4)	61-120 (17.6)	Construction (17.6)
301- (15.3)	No leisure time (14.3)	121- (18.7)	Others (36.2)

Source: The same as Table II.

Notes: 1. Based on the responses given in the questionnaire by ninety-one agricultural laborers.

2. Figures in parentheses are shares in per cent.

the breakdown of farm laborers by the number of days worked indicates that close to 60 per cent are working 200 days or less annually on farms. As high as 11.0 per cent do farm work for only 60 or less days a year. This means that agriculture is still overpopulated. The surplus of labor over the necessary labor may be appropriated for work around the house, for sideline business outside of the village, and for leisure. The largest group, or more than half, spend their surplus time working around the house. Slightly more than 30 per cent use surplus time doing sideline work, working mainly for village and township enterprises, engaging in transportation, or doing commercial or service businesses within the agricultural areas. Close to 70 per cent do sideline work outside their villages for 60 days or less a year. Only 4.4 per cent said they spend surplus time for leisure activities.

The conclusion drawn from the above analysis is that in the Sunan area a seasonal surplus in the agricultural labor force still exists in spite of the rapid growth in the local nonagricultural sector.

C. Forms and Characteristics of Employment for Part-time Employees

1. Employment situation by age

Table III divides part-time farm laborers by sex, age, and days worked annually, and groups them into two categories, namely, those mainly working for other industries and those mainly doing family farming. The number of people surveyed totaled 973. Of this, 523, or 53.8 per cent, were engaged in part-time farm

TABLE III
 JOB SITUATION FOR PART-TIME FARM LABORERS IN THE SUNAN AREA
 (January 1987)

Days Worked per Year	Male (%)						Female (%)				Total								
	15-20		21-40		41-60		61-65		15-20		21-40		41-60		61-65		Persons	%	
	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%			
Mainly other industries	4	0	0.8	0	0	0	4	0.4	0.2	0.2	0.2	0	0	8	1.5	8	1.5	15.5	
101-200	46	0.8	4.2	3.4	0.2	3.4	35	1.5	4.0	1.1	0	0	81	15.5	81	15.5	47.2	27.9	
201-300	152	1.9	18.4	9.2	0.2	9.2	95	1.7	13.2	3.3	0	0	247	47.2	247	47.2	92.2	92.2	
301-365	83	0.4	11.5	3.4	0.2	3.4	63	2.3	8.2	1.5	0	0	146	27.9	146	27.9	92.2	92.2	
285	3.1	34.8	16.0	0.6	0.6	197	5.9	25.6	6.1	0	0	482	92.2	482	92.2	92.2	92.2		
Mainly family farming	3	0	0.6	0	0	0	5	0	0.7	0.2	0	0	8	1.5	8	1.5	3.6	2.7	
101-200	11	0.4	0.7	0.6	0.4	0.4	8	0	1.0	0.4	0.2	0	19	3.6	19	3.6	2.7	2.7	
201-300	8	0.1	0.6	0.6	0.2	0.2	6	0	0.4	0.8	0	0	14	2.7	14	2.7	0	0	
301-365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0.5	1.9	1.2	0.6	0.6	19	0	2.1	1.4	0.2	0.2	41	7.8	41	7.8	7.8	7.8	7.8	
Total	307	19	192	90	6	216	31	145	39	1	523	100	100	100	100	100	100	100	100
Persons	307	19	192	90	6	216	31	145	39	1	523	100	100	100	100	100	100	100	100
%	58.7	3.6	36.7	17.2	1.1	41.3	5.9	27.7	7.5	0.2	100	100	100	100	100	100	100	100	100

Source: The same as Table II.

labor. But the rate rises to 62.8 per cent if those doing no work (140 people) are discounted. There is a further division of part-time farm laborers, based on the number of days worked annually, into those working mainly for other industries and those working mainly in family farming. I call the former type-one part-time employees and the latter type-two part-time employees. Type-one represents 57.8 per cent and type-two 5.0 per cent. There is no significant gender difference in the type-two group, but in type-one the rate of men is 16.8 percentage points above that of women. This shows that more male farm employees go into non-agricultural jobs than do females.

For those doing mainly family farming, the disparity between men and women in the number of days worked per year is minimal. Thus in this category both men and women are underemployed. By contrast, those doing mainly other work are almost fully employed. Moreover, most of those in this category are 21-40 years old.

2. *Length of time since becoming part-time laborers, classified by sex*

We will examine next the number of years the part-time farm laborers have been engaged in sideline jobs. Of those who answered the questionnaire (Table IV), the largest group, or 52.7 per cent, reported that they had worked at their sideline jobs for less than four years. Of the eighty-eight persons who had side-work experience of eight years or more, seventy-two were men, most in their thirties, forties, or fifties. I have concluded from this that in the initial stage of growth in the nonagricultural sectors in rural areas, men composed the overwhelming majority of new employees.

Also, by comparing the distribution of the figures in italics in Table IV, it can be seen that the figures for men are located conspicuously to the lower right, while those for women are at the upper left. In fact, women of thirty years old or younger account for 62.9 per cent of the part-time female employees, which is far higher than the comparable 40.5 per cent figure for men.

3. *Educational levels and forms of employment of those leaving agriculture*

Table V gives the educational levels and forms of employment (permanent or temporary) considered related to educational careers. The table shows that those who have been formally hired by factories, i.e., permanent employees, account for 74.8 per cent. This indicates a high degree of stability enjoyed by part-time farmers. The table also shows that very few part-time employees at all educational level move outside of their own prefectures, and that the overwhelming majority pick up jobs at enterprises in their own economic areas, mostly in villages but in towns also. When looking at the correlation between jobs and educational levels, it can be seen that the lower the level of education the lower the level of enterprise employing them, the lowest being the village enterprise. For village enterprises, 25.4 per cent of part-time employees were primary school graduates, 17.1 per cent junior high school graduates, and 12.3 per cent senior high school graduates. Conversely, the higher the level of education, the larger the percentage of those employed by township enterprises, 64.8 per cent were primary school graduates, 71.3 per cent junior high school graduates, and 76.7 per cent senior

TABLE IV
NUMBER OF YEARS PART-TIME FARM LABORERS IN THE SUNAN AREA WORKED FOR NONAGRICULTURAL ENTERPRISES
(January 1987)

Age	Number of Years in Nonagricultural Jobs								Respondents		Average Years in Other Jobs	No Answer
	Less Than 1	1-2	2-4	4-6	6-8	8-10	10-	Persons	%			
Male	14-20	5	6	4	0	0	0	0	15	6.0	1.73	7
	21-30	0	10	29	22	15	8	3	87	34.5	4.82	31
	31-40	4	12	20	9	7	7	19	78	31.0	5.50	31
	41-50	3	4	8	7	6	3	19	50	19.8	6.54	27
	51-60	1	0	3	1	2	2	10	19	7.5	7.74	12
	61-65	1	0	0	0	1	0	1	3	1.2	3.67	3
Subtotal (A)		14	32	64	39	31	20	52	252	100.0	5.42	111
Female	14-20	8	13	13	2	0	0	0	36	21.6	2.13	10
	21-30	5	12	27	13	8	1	3	69	41.3	3.54	21
	31-40	4	6	10	8	6	2	4	40	24.0	4.57	17
	41-50	2	3	8	1	2	0	5	21	12.6	4.73	15
	51-60	0	0	0	0	0	0	1	1	0.6	10.0	4
	61-65	0	0	0	0	0	0	0	0	0.0	0.0	0
Subtotal (B)		19	34	58	24	16	3	13	167	100.0	3.91	67
Total		33	66	122	63	47	23	65	419	(-)	(1.51)	178
(A)-(B)		(-5)	(-2)	(6)	(15)	(15)	(17)	(39)	(-)			

Source: The same as Table II.

Note: The table covers the 597 people surveyed who worked largely or only in nonagricultural enterprise. The 236 people who did no work are not included.

TABLE V
FORMS OF EMPLOYMENT AND TYPES OF ENTERPRISES EMPLOYING PART-TIME FARM LABORERS
BY EDUCATIONAL LEVELS (SUNAN AREA)

	(January 1987)											
	Permanent Employees						Temporary Employees					
	Primary School Graduates (1)			Junior High School Graduates (2)			Senior High School Graduates (3)			(1)	(2)	(3)
A	B	C	A	B	C	A	B	C				
Male	20	42	8	12	75	11	7	39	3	14	23	4
Female	11	37	4	19	54	10	2	17	5	6	10	3
Total	31	79	12	31	129	21	9	56	8	20	33	7
(%)	(25.4)	(64.8)	(9.8)	(17.1)	(71.3)	(11.6)	(12.3)	(76.7)	(11.0)	(33.3)	(55.0)	(11.7)
	122			181			73			60		67
	(24.3)			(36.0)			(14.5)			(11.9)		(13.2)

Source: The same as Table II.

Note: A: village enterprises; B: township enterprises; and C: enterprises outside their village or town (including those in prefectural capitals and other cities).

high school graduates. However, the correlation is unclear for part-time employees at enterprises outside of their village or town as the cases examined were too few.

D. *Characteristics of the Rural Labor Market*

1. *Part-time work generalized*

By the end of 1988, the number of nonagricultural employees in rural areas reached 81.3 million. However, there have been no national statistical surveys done on the employment situation of this population although some case studies exist. According to some available survey results, the ratio for part-time farming families has gone over 90 per cent, and the ratio of part-time jobs for rural nonagricultural employees has come close to 90 per cent in the Sunan area in Jiangsu Province as well as in Zhejiang Province, both economically developed provinces. In Henan and Shanxi, two other economically developing provinces, the ratio of part-time jobs for nonagricultural employees is 99.6 per cent and 90.4 per cent, respectively. All these are high figures indeed. From them it can be inferred that most of the nonagricultural employees on the rural labor market are part-time farmers and that most of the farming families in economically developed rural areas are part-time job holders.

2. *Structural surplus and shortage in nonagricultural employment*

Because of administrative interference in the movement of labor process, an exodus of farm labor has arisen causing overemployment at village and township enterprises. Along with numerical overemployment that plagues village and township enterprises, there are also problems with the quality of labor, generating structural shortages in specific types of labor.

The quality of the work force is determined by the level of education and age composition. We can compare the educational level and age composition of village and township enterprise employees with urban sector employees using data from the village and township enterprise section of the All-China Industry Census of 1985 along with data from a 1986 survey of urban sector workers conducted by the All-China Federation of Trade Unions. The results of this comparison show that the ratio of nonagricultural employees in cities who have finished primary school education and those below that level is the lowest for mixed enterprises (foreign and joint-venture enterprises, 10.8 per cent) and highest for collective enterprises (19.1 per cent). It should be noted that in the urban sector the highest is still less than 20 per cent. Among the nonagricultural employees in rural areas, the ratio is 40 per cent and higher. There is no conspicuous differential between urban and rural areas regarding the ratio of junior high graduates, but the ratio of senior high school and college graduates is 20 percentage points higher in urban than in rural areas. There are so few technical and vocational college graduates working at village and township enterprises that their numbers need not be considered. This imbalance suggests that there is an acute shortage of educated employees in the countryside.

There is also a marked difference between the urban and rural sectors in age composition of employees. The average age of nonagricultural employees in rural areas is definitely lower than that of urban employees. Considering that younger

age means shorter intra-firm training and that most of the village and township enterprise employees are former farmers, this difference may indicate lower technical and skill levels for rural area workers.

3. *Low fluidity of the labor force*

Under competitive market conditions, any inter-regional and/or inter-industrial imbalances will inevitably generate population and work force movements to rectify them. In fact, the above observed flow of farm laborers into nonagricultural sectors does represent such a movement serving to redress the income imbalance between industries. But the movement from the agricultural to the nonagricultural sector is but one of the various forms of population movement. Of equal importance are inter-area and inter-enterprise movements of the work force as both are relevant to changes in employment conditions in the rural labor market.

The "flow" of the labor force needs to be used in a specific way. If agricultural laborers who once quit farming in favor of the nonagricultural sector have for some reasons again moved to another nonagricultural job, then and then only do we consider them to "flow." I conducted interviews twice in rural villages, once in January–February 1987 and again August 1988, and learned that management staff and cadres of some village and township enterprises can flow to another enterprise in the same village or town with the agreement of the village authorities or of official agencies in charge of their profession. But I also learned that it is extremely rare for ordinary workers to flow from one enterprise to another in pursuit of their private economic interests. There are three reasons for this.

First, enterprises suffering from a shortage of qualified workers take all possible measures to prevent their outflow. The flow of workers into other areas is controlled with particular strictness. If a worker wants to move to another enterprise located outside of his/her village or town, he/she has to obtain the permission of the enterprise concerned and the village industrial company, and also has to repay the cost that the enterprise had incurred to train the worker in his/her particular skill.

Second, the village authorities constantly adjust wages at the different enterprises under their jurisdiction to prevent local wage differentials from becoming too large. For this reason workers are not strongly motivated to move from one enterprise to another in quest of higher wages.

Third, village and township enterprise workers are largely those who have been squeezed out of agriculture due to the pressure of overpopulation and the scarcity of land; thus right from the start the level of income has not been the key factor determining their inter-industry movement. As stated earlier, most of the non-agricultural employees in rural areas are part-time laborers having the dual status of farm laborers and enterprise employees. This dual status serves the dual purpose of stabilizing and increase their income. Having left agriculture while still holding their land, farming will ensure them a minimum income level while the wage income from the village and township enterprises is to supplement the farming income. This pattern emerges particularly because the wage income is subject to market fluctuations and therefore unstable [1]. All this leads to poor

motivation on the part of village and township enterprise employees to change their jobs.³

III. FACTOR ANALYSIS OF MOVEMENT OF LABOR

The presence of nonagricultural job opportunities is of course the premise for farmers to take up sideline jobs. Along with this premise, however, two factors have to be at work to actually trigger the movement of farmers from agriculture to other jobs. One is the push factor. It is only when farmers find it difficult to sustain their minimum living standard relying only on their agricultural income that they are compelled to seek jobs in the nonagricultural sector. This can occur because of a shortage of land, an excess of labor, or a decline in agricultural prices. The other factor triggering movement is the pull factors such as increased job opportunities following rapid growth in the nonagricultural sector and income gaps between agriculture and other sectors. Following this line of discussion, we will metrically analyze the factors responsible for the movement of labor within rural areas (analysis using questionnaire surveys has been omitted here due to space limitation).⁴

Here we deal with a case study done at Songyen Village in the suburbs of Shanghai. Since available data are limited, we indicate the quantity of labor migration between industries by an indirect indicator, namely, the number of village and township enterprise employees, and examine through multiple regression analysis the factors that have brought about changes in this indicator. In our estimation we have changed to indices the number of village and township enterprise employees. Thus we can identify the factors that have influenced the changes in the number of village and township enterprise employees.

The equation for estimation in this multiple regression analysis is as follows (for the definition of variables, see Table VI):

$$UL_t/UL_0 = a + b_1L_t/P_t + b_2S_t/P_t \text{ (or } S_t/L_t \text{ or } PS_t/L_t) + b_3AI_t/W_t \\ \text{(or } [W_t - W_{t-1}]/W_{t-1} \text{ or } W_t/W_0) + b_4(Q_t - Q_{t-1})/Q_{t-1}.$$

All the data used were collected by me in the surveyed area. The estimation period was subdivided into three partially overlapping spans of time: the fifteen years from 1971 through 1985, the nine years from 1971 through 1980, and the nine years from 1976 through 1985. This periodization is to adequately differentiate the growth stages of village and township enterprises and to take into consideration the changes that occurred during this period in the income distribution formula in rural society. In other words, by this periodization we wanted to eliminate the effects of institutional changes on the inter-industry migration of labor. The results of the estimation are given in Table VII.

The results of factor analyses on the change in the numbers of village and township enterprise employees throughout the survey period are shown in Model 1

³ A detailed discussion is in [5].

⁴ See [2] for an analysis of the replies to the questionnaire.

TABLE VI
DEPENDENT AND INDEPENDENT VARIABLES

		Relation with Dependent Variables
UL_t/UL_0	Index of village and township enterprise employees (dependent variable)	
L_t/P_t	Labor force rate in rural areas	+
S_t/P_t	Cultivated area per capita of rural population	-
S_t/L_t	Cultivated area per capita of rural labor force	-
PS_t/L_t	Planted area per capita of rural labor force	-
AI_t/W_t	Comparative income index of agricultural laborers	-
$\frac{(W_t - W_{t-1})}{W_{t-1}}$	Growth rate of wages for village and township enterprise employees	-
W_t/W_0	Wage index per capita of village and township enterprise employees	+
$\frac{(Q_t - Q_{t-1})}{Q_{t-1}}$	Annual rate of change in the total sales income of village and township enterprises	+

Source: Compiled from data derived from my surveys.

Notes: UL_t = the total number of village and township enterprise employees in period t .

UL_0 = the total number of village and township enterprise employees in the first year.

L_t = the number of persons in the rural labor force in period t .

P_t = rural population in period t .

S_t = cultivated area in period t .

PS_t = planted area in period t .

AI_t = per capita annual income of agricultural labor in period t .

W_t = annual per capita income of village and township enterprise employees in period t .

W_0 = annual per capita income of village and township employees in the first year.

Q_t = total sales income of village and township enterprises in period t .

and Model 2. In Model 1 the plus or minus signs attached to regression coefficients are all significant. While the regression coefficients for the comparative income index of agricultural laborers are statistically significant, neither the regression coefficients for the labor force rate in rural areas nor those for the planted area per capita of rural labor force are significant. Also the \bar{R}^2 value is not particularly high. Estimations using Model 2 give about the same results as those obtained in Model 1.

For the nine years from 1971 through 1980, five equations for estimating are used in Models 3-7. The analysis of factors using these models show that there was a remarkable improvement that took place through these nine years.

A few common characteristics can be identified from the five models. First, it can be seen from the magnitude and significance level of the regression coefficient for cultivated area per capita of rural population that this variable causes a significant change in the number of village and township enterprise employees. That this coefficient has a minus value indicates that the smaller the per capita of cultivated area the faster the increase in the number of village and township

TABLE VII
FACTOR ANALYSIS OF THE INCREASE IN VILLAGE AND TOWNSHIP ENTERPRISE EMPLOYEES IN SONGYEN VILLAGE

Model	1971-85			1971-80			1976-85	
	1	2	3	4	5	6	7	8
Constant	14.46 (1.37)	4.33 (0.63)	19.11 (3.52)***	22.73 (10.7)***	22.85 (8.58)**	25.90 (12.3)***	20.75 (2.83)***	8.37 (2.01)*
L_t/P_t	5.48 (0.81)	9.98 (1.76)	6.16 (2.74)**	4.49 (3.07)***	4.65 (2.39)*	4.13 (3.05)***	6.03 (2.26)*	1.72 (0.59)
S_t/P_t			-15.18 (-5.3)***	-15.94 (-13.2)***	-16.12 (-10.0)***	-18.96 (-16.4)***	-16.18 (-4.0)***	-6.56 (-2.4)*
S_t/L_t		-1.21 (-1.1)						
PS_t/L_t								
AI_t/W_t	-7.93 (-2.8)**			-1.58 (-2.3)*	-1.55 (-1.6)			
$\frac{W_t - W_{t-1}}{W_{t-1}}$						-1.16 (-3.2)***		
W_t/W_0		0.60 (3.05)***	0.37 (0.79)				0.18 (0.28)	0.23 (1.36)
$\frac{Q_t - Q_{t-1}}{Q_{t-1}}$					0.02 (0.19)	0.21 (3.08)***	0.06 (0.53)	
R^2	0.7057	0.7479	0.9481	0.9824	0.9674	0.9847	0.9468	0.8351
D.W.	3.142	3.159	1.759	1.831	1.807	3.235	1.409	2.210

Source: Data provided by Songyen Village management station.

Notes: 1. Figures in parentheses are *t*-values.

2. Figures with *** are significant at the 1 per cent level, those with ** at the 5 per cent level, and those with * at the 10 per cent level.

enterprise employees. The economic significance of this is that population increase has caused overemployment in the agricultural sector and as a result has lowered the income level of farming households.

Second, the labor force rate is shown to be a relevant factor. The regression coefficient has a plus value, meaning that, all other factors remaining unchanged, a higher labor force rate would mean a higher degree of overemployment in the agricultural sector.

It can be concluded from the above that the two push-pull factors mentioned earlier have worked to cause an outflow of agricultural laborers.

The comparative income index for agricultural laborers seems to have had some effect on inter-industry migration during the survey period, although its influence was limited. This can be seen from the regression coefficient of this variable and its statistical significance. The regression coefficient of the per capita wage index of the village and township enterprise employees is not statistically significant. Yet it is surmised that the rise in wage level had a positive effect that increased the number of village and township enterprise employees, and the survey findings related to wages reflect the impact, if slight, of the income gap between the agricultural and nonagricultural sectors on the inter-industry migration of labor.

Lastly, Model 6 shows the relationship between the annual rate of change in the total sales income of village and township enterprises and the number of their employees. As can be seen, when the enterprises experience smooth growth, their employees also gradually increase.

In short, the mechanism of labor migration between industries at Songyen Village from 1971 through 1980 can be essentially explained by the employment chance theory. From 1976 to 1985, however, the push factor, although still at work within the rural communities, considerably weakened as a cause of inter-industry labor migration. This can be read from Model 8. At the same time, the per capita wage index of village and township enterprise employees registered a moderate increase over the 1971-80 period. This can be seen from Model 7. Thus the indications are that the push factor within the agricultural sector has gradually been giving way to the pull factor from the nonagricultural sector as the prime determinant of labor migration.

CONCLUSIONS

As the preceding analysis shows, labor force movement within the China's rural areas has gathered momentum during the past ten years despite the institutional limitations placed on it. The consequent transformation of the rural employment structure has exerted a major influence not only on the rural economy but on the entire national economy as well. The role of village and township enterprises in bringing about this transformation has become particularly important, especially in raising the income level of farming households, industrializing and urbanizing rural areas, and strengthening ties between rural and urban areas. However, for the sustained growth of the rural economy, and the national economy as well, the functions of the administrative and economic sectors should be more clearly

differentiated, competitive principles introduced into rural areas, and institutional restrictions on population and labor force movement eased. These are issues that need to be dealt with in future studies.

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