11. Demographic Transition in Rural China:

A field survey of five provinces

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Introduction

Rural–urban migration and labour mobility are major drivers of China’s recent economic growth. Despite the importance of migration to China’s continuing economic success there have been few attempts to understand what is happening on the ground.¹ This chapter will look at questions such as how and to what extent China still enjoys the benefits of large-scale internal migration after three decades, and the extent of rising wages in rural areas. Parallel with these questions, the negative impacts of long-term large-scale migration on agriculture and predictions for the future of the rural labor force will be discussed.

The futures of rural–urban migration and of the rural labour force are determined by the remaining rural population and labour force and the demographic structure—for example, the gender and age structures of the population and labour force. It is understandable that, with the same total population, one aged rural society might have a relatively smaller percentage of population of working age, and hence less workers working in agriculture and less labourers looking for off-farm jobs as migrants, compared with another but much younger society. But the demographic structure holds more relative importance. China’s population pyramid has been impacted significantly by the ‘One Child Policy’ since the 1980s and, to a lesser extent, the sustained famine in the early 1960s. The irregularities in China’s population pyramid make meaningful analysis of the rural population and labour force more difficult than they would otherwise be. Studies of the demographic dynamics of China’s rural population and labour force have been insufficient to date. The sampling procedures generally adopted have not been sufficient to describe the demographic change in rural areas and the official population census data are not released in a timely manner. To fill the gap in the current research, this study has used surveys of whole villages to obtain comprehensive pictures of rural demographic dynamics. The aim of this study is to improve on previous

1 More detailed discussions on the impacts of rural–urban migration can be found in a number of publications, such as Chen et al. (2011); Huang (1999); Rozelle et al. (1999).

explanations of rural–urban migration and the projection of future trends. At the same time, we aim to improve understanding of China’s rural labour force engaged in agriculture, in terms of total quantity and gender and age.

As a corollary, this study provides insight into China’s ‘left-at-home’ children. China’s rural–urban migration has long been characterised by seasonal migration and/or leaving some family members at home. Such migration raises serious issues with children left at home and the impacts on their physical, mental and emotional wellbeing and their education, health and human capital developments. Our study aims to provide a systematic description of the current status of ‘left-at-home’ children and plausible explanations with regard to the job opportunities their parents face.

Field Survey: Procedures, coverage and reliability

As stated above, the purpose of this survey was to obtain a comprehensive picture of demographic dynamics in rural China that could reveal the impact of rural–urban migration, both permanent and seasonal. The traditional sample procedure does not serve this purpose due to exclusion of those who have already migrated to urban areas; the only way to obtain an accurate picture of rural demographic dynamics is to conduct a village-wide survey, covering all households, including permanent and seasonal migrants.

The survey relied on the cooperation of villagers to provide necessary information regarding absent household members.

The lowest rural community unit (*cunmin xiaozu*) typically consists of 20–30 households, and members are generally close, with a large portion being relatives. In such a social structure, a local student collecting the survey data could obtain necessary demographic information of all households of the village, including those absent, with the help of parents, relatives and village leaders.

Although this approach is considered to provide the fullest picture of rural demographic dynamics, it could (as with all surveys) have some shortcomings regarding the quality and reliability of the survey data especially in regard to information provided on behalf of absent villagers. In order to decrease the potential survey error, we expanded the sample size and reduced the information requirements.

The pilot survey targeted five provinces with high rates of outward migration: Anhui, Hunan, Henan, Sichuan and Jiangsu. Twenty counties in each of the provinces were selected based on per capita income levels. Balanced

between the availability of students who could collect the survey data and other considerations, two villages were selected in each of the counties. In the selection procedure, villages close to county centres and/or major towns were avoided to reduce the possible bias of including in the sample an over-proportion of villages/labourers with better migration opportunities.

To ensure reliable information was collected, especially for absent villagers, the survey was restricted to demographic information that was non-sensitive and easily accessible. The demographic information of each individual was recorded—for example, age, education, marital status, occupation, months staying at home in a year, the starting year working outside the village either permanently or seasonally, and residential status outside the village.

The survey covered five provinces, 121 counties, 203 villages, 7317 households and 28 021 people. On average, there are 36 households in a village and 3.83 people in a household.

All students who collected the survey data were trained by the author and conducted the survey during the winter of 2010–11 in their home villages when the number of villagers staying at home was at its peak. After checking completeness and consistency of the information collected, the basic statistics of the effective survey data are summarised in Table 11.1.

Table 11.1 Sample Statistics

Province	Jiangsu	Anhui	Hunan	Henan	Sichuan	Total
County	24	20	21	36	20	121
Villages	51	42	40	39	31	203
Households	2246	1276	929	1305	1561	7317
Persons	8950	4833	3506	5230	5502	28 021

Source: Calculated from field survey data.

The reliability of the survey data was crosschecked with data contained in the *China Statistical Yearbook* and *China Population and Employment Statistical Yearbook* to ensure its accuracy. For example, the average size of the rural household reflected in the survey was 3.83 persons per household at the end of 2010–beginning of 2011; the corresponding figure is 3.98 nationwide, according to the National Rural Household Survey conducted by the National Bureau of Statistics at the end of 2009 (NBS 2010).

A more direct test was undertaken by checking the gender and age structure of our survey data with that for the nation as a whole. Two population pyramids are shown in Figure 11.1—one from our survey (at right) and another from

national population and employment statistics (at left) (Department of Population and Employment Statistics of NBS 2010). The two population pyramids are generally consistent.

Figure 11.1 Comparison of Rural Households' Demographic Structures

Source: Department of Population and Employment Statistics of NBS (2010); field survey.

Considering the time difference in survey conducting, the similarity might increase if the pyramid generated from the survey moves down one or two years; however, there are two features requiring further explanation: the first gap is rather smaller in our survey compared with the national population and employment statistics data. A plausible explanation is that all five provinces have been major grain producing and exporting areas for a long time and the rural population might have relatively better access to food compared with those living in food-deficit regions, which could lead to relatively higher birth rates as a result, even during times of famine. The second point of inconsistency is that the population reproduction cycle seems to extend based on our survey. The second gap centres on the group of those aged thirty-five, but the third gap does not show a clear sign of ending or bouncing back. One of the plausible explanations for this could be that rural young people have delayed their marriage and reproduction due to uncertainty associated with migration.

Basic Features of Rural Demographic Dynamics

As mentioned above, to ensure the quality of the data, the questionnaires were short and straightforward, focusing primarily on demographic information.

After preliminary work cleaning the data, some useful information was organised to show three aspects of the rural demographic dynamics: the residential and employment status, the demographic structure of the rural labour force and the custody status of the 'left-at-home' children.

Residential and Employment Status

In our study, all persons with local residence registration status are classified into five groups based on their length of stay at home in a calendar year: none—that is, already migrated; less than three months; more than three months but less than six months; more than six months but less than 10 months; and more than 10 months. The official statistical criterion for permanent residence is living in a place for more than six months in a calendar year. We specify two much longer periods—that is, between six and 10 months and more than 10 months—in an effort to separate farmers more precisely according to their major employment by working place.

The survey was conducted in the winter of 2010–11, and preliminary findings are presented in this chapter.

Among the 28 021 respondents, 13 169 people live more than 10 months at home per year; however, a significant portion of this population has already found off-farm employment to supplement their income. The number of villagers who had already migrated was 8020 (28.6 per cent); if these respondents are added to those who are at home less than three months per year (18.5 per cent), those who might be considered not staying at home account for another 47 per cent of the total rural population. The number of persons who move between home and work more frequently—that is, stay home between three and 10 months a year—is relatively smaller, at less than 6 per cent of the total (see Table 11.2).

Table 11.2 Residency Status of Total Population Surveyed

Time staying at home	Persons	Percentage of total
Already migrated	8020	28.62
Less than 3 months	5174	18.46
Between 3 and 6 months	899	3.21
Between 6 and 10 months	759	2.71
More than 10 months	13 169	47.00
Total	28 021	100.00

Source: Calculated from field survey data.

In Jiangsu Province, more than 47 per cent of the rural population has migrated to urban areas, and 11 per cent of the population returns home less than three months each year; the number of rural residents who are considered

to have migrated to an urban area has reached more than 58 per cent and more than 37 per cent of the population stays at home for more than 10 months per year. The number of persons leaving home between three and 10 months a year is small—just more than 4 per cent of the total. There is a rather similar distribution of residence status in Sichuan, where the number of population left home is roughly short by 9 percentage points, while the number staying at home is about 6 percentage points more than that in Jiangsu. In comparison, the proportions of those who have migrated are relatively smaller in Anhui, Hunan and Henan, at about one-quarter, one-third and one-fifth of the level in Jiangsu respectively, with the proportions of population staying at home greater by 13–19 percentage points (Table 11.3).

Table 11.3 Residency Status by Province (per cent)

Time staying at home	Jiangsu	Anhui	Hunan	Henan	Sichuan	Total
Already migrated	47.31	12.48	16.69	9.16	38.51	28.62
Less than 3 months	11.04	24.73	26.30	24.24	14.56	18.46
Between 3 and 6 months	1.9	3.06	3.85	6.44	1.98	3.21
Between 6 and 10 months	2.37	2.79	2.88	4.13	1.73	2.71
More than 10 months	37.39	56.94	50.29	56.02	43.22	47.00
Total	100	100	100.00	100	100	100.00

Source: Calculated from field survey data.

From comparison of the residence status among the five provinces, the rate of rural–urban migration is dependent on economic development due to associated opportunity costs, including the financial costs directly incurred during the migration process, and the human and social capital required for looking for appropriate employment.

The actual speed of migration at any time is partly determined by the gender and age structure of the remaining population. Given total rural population, ageing indicates fewer people seeking migration opportunities hence less mobility of the population. In order to understand past demographic dynamics in relation to rural–urban migration and, more importantly, to understand the future trend, it is necessary to know the demographic structure of the rural population (Figure 11.2).

Figure 11.2 Rural Demographic Structures by Residence Status

Source: Calculated from field survey data.

The data show that most of the 'permanent' rural population who live in home villages more than 10 months a year are either elderly or youngsters with a dependency ratio close to 0.42; the proportions of the 'left-home' population are quite high among those aged sixteen to fifty, peaking about the group of those aged twenty, and declining afterwards; and the ratio of women staying at home is relatively higher, and increasing with age.

If migrants are excluded from the data, the relationship between age and working place is higher. Seasonal migration is common in China from the age of sixteen and increases with age. By age twenty-five, only about one-quarter of the rural population still lives in home villages more than 10 months a year, while the proportion staying home less than three months is as high as 60 per cent. The ratio of seasonal migration declines after age thirty, but even for those aged over fifty, more than 30 per cent of the rural population is still temporarily moving between rural and urban areas.

Demographic Structure of the Rural Labour Force

For agricultural production, the demographic structure of the remaining rural labour force, especially those primarily engaged in agriculture, is more important than that of the total population with formal rural registration status. There are two steps in presenting a clear picture of the status of the remaining rural labour force and its employment distribution. The first step is to clarify who is considered as a remaining, or permanent, rural worker, and to draw the demographic structure of such a rural labour force. Following international standards,² age groups between sixteen and sixty-five are taken as criteria to clarify the labour force. Further, only those who stay home for more than 10 months a year are considered 'remaining' or 'permanent' rural workers. The data from our survey are summarised in Table 11.4.

Table 11.4 Demographic Structure of Permanent Labour Force

Age	Male (persons)	Female (persons)	Total (persons)	Male (%)	Female (%)	Total (%)	Gender ratio (female = 100)
16–25	610	602	1212	6.57	6.49	13.06	101.33
26–35	575	667	1242	6.20	7.19	13.39	86.21
36–45	1094	1434	2528	11.79	15.45	27.24	76.29
46–55	1130	1295	2425	12.18	13.96	26.13	87.26
55–65	972	900	1872	10.48	9.70	20.17	108.00
Total	4381	4898	9279	47.21	52.79	100.00	89.44

Source: Calculated from field survey data.

It is shown that, if staying home more than 10 months and being aged between sixteen and sixty-five are taken as the criteria for the sub-sample, aged and female participation become more important parts of the permanent rural labour force. The absolute number of the permanent rural labour force in either the sixteen–twenty-five or the twenty-six–thirty-five age groups is about half that for older age groups and the gender ratio is significantly biased towards females.

A further step is to discompose employment structure among the permanent rural labour force, and a preliminary picture is shown in Table 11.5.

2 There are slight differences in defining working age, or the economically active age, among countries and organisations. For example, the International Labor Organisation statistics for the economically active population (ILO 2011) cover age groups from fifteen–sixty-five and over, which are similar to the same standards used in many countries. China has a formal retirement age based on gender and occupation in urban sectors, but this is not applied to farmers, and the legal age to start work is set at sixteen, so the working age is taken as being between sixteen and sixty-five in this chapter.

Table 11.5 Employment Structure of Permanent Labour Force

Age	Farm		Non-farm		Both		No-work		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
16–25	154	1.66	240	2.59	458	0.49	360	3.88	1212	13.06
26–35	286	3.08	268	2.89	633	0.68	55	0.59	1242	13.39
36–45	881	9.49	260	2.80	1322	1.42	65	0.70	2528	27.24
46–55	967	10.42	164	1.77	1202	1.30	92	0.99	2425	26.13
55–65	908	9.79	67	0.72	725	0.78	172	1.85	1872	20.17
Total	3196	34.44	999	10.77	4340	4.68	744	8.02	9279	100.00

Source: Calculated from field survey data.

By comparing Table 11.4 and Table 11.5, it is clear that ageing is an even more serious problem in agricultural production than in the rural economy as a whole. Among the 3196 permanent rural workers primarily engaged in farm work, only 154 persons were aged sixteen–twenty-five and 286 persons were aged twenty-six–thirty-five—about one-sixth or one-third of that for older age groups, respectively. The situation is a little better in terms of the numbers working in both the farm and the non-farm sectors, but the figures for younger generations are still significantly lower than those for older generations. If such a structure is maintained, even without further out-migration of young farmers, the total number of those in the rural labour force primarily engaged in agriculture will sharply decline in 20–30 years when those currently aged over thirty-five retire or die.

Custody Status of ‘Left-at-Home’ Children

According to our survey, about 28 per cent of rural residents have left home with all members of their families; there were no so-called ‘left-at-home’ children for those families. For those who have not left with their whole family, about 20 per cent of children under the age of fifteen are staying home less than 10 months a year, possibly going out with their parents (or one of the parents) seasonally. Education and other welfare issues exist for these children too but they are not classified as left-at-home children.

In the sample covered by our survey, there are 3169 rural children under the age of fifteen staying at home for more than 10 months a year. About half the total, 1595 children, are living with both parents at home. The remaining 1574 children are categorised as ‘left at home’: 685 with mothers alone, 54 with fathers alone, 815 with one or more grandparents, and 20 in the custody of

other persons. Detailed custody information of those children staying at home for more than 10 months a year, including regional variations, is listed in Table 11.6.

Table 11.6 Custody Status of Rural Children by Province (per cent)

Custodians	Jiangsu	Anhui	Hunan	Henan	Sichuan	Total
Parents	40.63	47.98	50.00	53.43	64.36	50.33
Mother	25.19	22.94	16.15	28.52	7.13	21.62
Father	2.78	2.10	1.55	0.96	0.84	1.70
Grandparents	29.87	26.17	32.08	16.85	27.67	25.72
Others	1.52	0.81	0.22	0.24	0.00	0.63
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Calculated from field survey data.

Table 11.6 indicates that the percentage of children in the custody of both parents reaches its lowest level of 41 per cent in Jiangsu, and then increases to 48 per cent in Anhui, 50 per cent in Hunan, 53 per cent in Henan and 64 per cent in Sichuan. This regional difference might suggest a relationship between the decision to work outside and that of child care. As the destinations of outgoing migrant workers are concentrated in the south-east coastal regions, the distance between the working place and home is much further for farmers from Sichuan compared with those from the other four provinces. The travel costs will be much higher for Sichuan farmers, not only because of the distance but also because of geographic conditions, so seasonal migrants might come back only once a year. As more and more young couples are not willing to suffer long-term separation, they tend to migrate together or stay at home together. The high proportion of single-mother custody in Jiangsu, Anhui and Henan could be explained by the same reason: with better job opportunities in nearby locations, the husbands might commute between working places and home more frequently, hence the suffering of separation is largely reduced.

Summary and Policy Implications

The above is an analysis of demographic structure in rural China based on a survey conducted in the winter of 2010–11 covering five provinces with a large rural population and a large proportion of rural–urban migration. While in-depth study is yet to be formulated and carried out, some preliminary results can be summarised.

Rural–Urban Migration Will Continue, but the Speed Will Reduce

The rural population pyramid (Figure 11.1) indicates that the gap in the pyramid is getting larger with an extended cycle, and the number of children under the age of fifteen is about 30 per cent less than that for those in the twenty-five–forty age group. As a result, even as the One Child Policy is phased out in the near future, the number of annual births might not exceed the current level, so the rural population will shrink purely due to lower birth rates.

The current rural demographic structure (Figure 11.2) further indicates that most young people have at least seasonally migrated (80 per cent about the age of twenty). As young urban migrants are eager to settle down with their whole families, more children will move out before reaching working age. As the number of children under age fifteen is smaller than the number of those in the older generation, a further reduction of this number could lead to lower migration levels by those of working age.

Due to demographic dynamics, rural–urban migration will continue in the near future, while the speed might reduce significantly; however, if measured by official statistics, the index of urbanisation might significantly increase in the next 20–30 years, even without large-scale rural–urban migration. The reason is simple: ageing in rural China. As the population ages due to the out-migration of young generations—pine-shaped, and possibly mushroom or umbrella-shaped—the rural population will dramatically shrink when all those elderly pass away. Urbanisation will appear to progress as the number of rural residents reduces by more than half in 20–30 years, but it will be mainly due to demographic changes and not an increase in migration.

The Number of Agricultural Workers Ageing Will Continue to Increase Rapidly and then Decline Sharply

Table 11.5 indicates that, among those engaged mainly in agricultural production, the number in the twenty-six–thirty-five age group is only about one-third that for the thirty-six–forty-five, forty-six–fifty-five and fifty-six–sixty-five age groups. The same number is even smaller for the sixteen–twenty-five age cohort: only about one-sixth. There is no reason to expect that children under the age of fifteen will participate in agriculture in greater numbers than the older generation when grown up. On the contrary, the number of children permanently staying at home is already below that for the older generation currently, and is likely to reduce further as more parents settle in urban areas.

In general, looking at the permanent rural labour force engaged mainly in agriculture, the age structure looks like a spindle with a tail at the bottom. As the elderly leave employment and youngsters move out, the ‘spindle’ will become thinner and thinner, with the top shrinking much faster. As a result, the ageing of the agricultural labour force could speed up, followed by a sharp decline in the total number of those aged twenty–thirty years.

Decisions Regarding Migration Interact with Those Regarding Child Care

Table 11.6 suggests that the issue of left-at-home children is interrelated with off-farm job opportunities. If off-farm jobs are easily accessible in nearby regions, more children will be left at home with a single parent. Otherwise, more children will be taken with both parents or both parents will stay at home. The figures in Table 11.6 are, however, in percentage terms, and provide only a comparison of custody status for children staying at home for more than 10 months a year among the five provinces covered by the study. One cannot directly infer the percentage of children left-at-home and its relationship with out-migration decisions.

Nevertheless, the relationship between child care and out-migration suggested by such a comparison is still important as it raises some interesting yet inconclusive issues looking into the future. If the local economy in Sichuan and other inland provinces is to be boosted by the Western Development Strategy,³ will more children in western regions be left at home as off-farm jobs are increasingly available nearby? Or, will more children move out with their parents instead? In either case, the movement of children will have some important implications for future development in social security and service systems.

Finally, the above analysis opens up a lot of issues for further study. For example, one could apply the collected data containing gender and age information of the rural population to more rigorous demographic models, systematically simulating and projecting future trends of rural population along with its changing structure. The same data could also be applied to study the timing of each migrant moving out for the first time, re-establishing models of rural–urban migration and systematically simulating and projecting future trends of the migration; to establish a model to explain the relationship between

3 The Western Development Strategy was first formally raised in the Tenth Five-Year Plan (People’s Congress of China 2001), aiming to speed up economic development in the vast western regions with greater allocations of the state budget, along with induced funds from other sectors directed to infrastructure and other investment. More detailed investment plans submitted by the State Development and Reform Commission were approved by the State Council in 2007 and 2012.

the general welfare status of left-at-home children and the employment of their parents; and to explain the different trends of ageing among provinces, and identifying the potential economic and social factors impacting on the ageing status.

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