



BETTING the FARM

China's Rural Labor Markets

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This article has been adapted from a presentation delivered at the Conference on the Transformation of China's Rural Economy, June 7-8, 2001, at the Hong Kong University of Science and Technology. The authors would like to thank James Kung, Louis Putterman, and Yaohui Zhao for comments on this manuscript and acknowledge the support of the US National Science Foundation, the US Department of Agriculture National Research Initiative, and the Ford Foundation, Beijing.

Since economic and political reforms began in China in the late 1970s, the expansion of the rural economy has, in large part, driven the nation's rapid economic growth. The emergence and dramatic evolution of rural labor markets over the last 20 years have contributed to the success of the rural economy. Many observers of China agree that earnings from nonfarm jobs account for a significant part of the rise in rural incomes and productivity.

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Evidence shows that China's rural labor markets are functioning well

The importance of the emergence of rural labor markets, however, transcends their role in providing rural residents with a way to raise their incomes. For China to modernize successfully, the nation must rely on labor markets to facilitate migration, the first step in the process of urbanization. Without vibrant labor markets that allow workers to find higher paying jobs in more productive sectors, the economy will be unable to transform itself from an agricultural to an industrial one. Hence, the essential question is whether rural labor markets have emerged in a way that will allow them to assist this transformation.

Scholars disagree about the role that labor markets have played so far in China's economic growth. Some researchers believe that the household registration (*hukou*) system, land tenure arrangements, and mandatory marketing quotas hinder the movement of labor, and that the absence of smoothly functioning rural labor markets has hindered growth. Others believe that rural labor markets are spearheading China's drive towards modernization. Their work has illustrated the emergence of functioning rural labor markets and the breakdown of the institutional barriers that once kept rural labor on the farm. Indeed, one of the most basic indicators of market health, the level of employment, supports the hypothesis that the functioning of labor markets has improved over time. The disagreement may exist because most analyses typically consider only part of the labor market, focus on only part of the country, or are limited to a subset of questions about labor market performance.

Rural labor markets grow

Consistent with the findings of other national studies of rural off-farm employment, data from the authors' own China National Rural Survey (CNRS) (*see* Box) show that the off-farm labor force expanded steadily between 1981 and 1995. From around 15 percent in 1981, our survey estimates that by 1995, 32 percent of the rural labor force found some off-farm employment. By assuming that neighboring provinces similar to those surveyed have identical rates of off-farm labor participation, we estimate that off-farm rural employment in China rose from less than 40 million in 1981 to more than 150 million in 1995. Although based on a relatively small sample, these numbers demonstrate the consistency of our data with the results from much larger national studies by the State Statistical Bureau (SSB, now known as the National Bureau of Statistics [NBS]) in 1996 and our own 1995 national village survey. For example, the CNRS estimate is almost the same as both the SSB estimate of the nonfarm labor force (31 percent) and our 1995 community questionnaire-based estimates of rural off-farm employment (34 percent).

Despite the Asian financial crisis, China's own structural reforms, and a general slowing of economic growth in the late 1990s, CNRS data show that rural off-farm employment growth continued expanding between 1995 and 2000. By 2000, 43 percent of rural individuals participated in off-farm work, a rise of just 11 percent in the second half of the 1990s. Thus, by 2000, more than 200 million rural individuals worked off the farm, and more than 50 million of them

entered the off-farm labor force during the last five years of the 1990s. Such a large increase in labor flow is one indicator that China's labor markets are functioning well.

Work patterns diversify

Our study also demonstrates that labor markets are providing more than just off-farm income to rural residents and have begun to change the fabric of Chinese society. Trends by employment type clearly show that the target destination of workers over the past 20 years has shifted from rural to urban (see Figure 1). In 1981, nearly 85 percent of rural individuals spent their time in farming. Those who worked off the farm were almost three times as likely to live at home and work within or close to their village (7 percent were local self-employed; 4.2 percent were local wage earners) than to work outside of the village and live away from home (less than 1 percent were self-employed migrants; less than 4 percent were migrants) (see Box for definitions of these categories). By 2000, almost as many off-farm workers were living away from home (more than 85 percent in cities or suburban villages of major metropolitan areas) as in the village. Migrants composed both the largest and fastest-growing component of the rural labor force.

Migrants have also been venturing further and further from home over the past two decades, a trend that has continued in recent years (see Table). In 1990, just under 30 percent of migrants left the province in search of work. By 2000, almost 40 percent of migrants worked outside the province. The shift into the migrant sector was especially striking among workers under the age of 30. In 1990, 31 percent of

young workers were leaving home, but by 2000, this figure had reached 45 percent. The trend is much less pronounced, or nearly nonexistent, among workers older than 30. These observations are consistent with our 1995 community-based questionnaire, which found that only 25 percent of workers moved out of the province in 1988, but by 1995 roughly 40 percent did.

Indeed, the data reveal one of the most striking characteristics of China's changing employment patterns: younger workers are increasingly dominating off-farm employment. Our data show that in 1990, participation rates of all age cohorts fell into a narrow range, from 20.5 to 33.6 percent. There was no clear progression when moving from the oldest to youngest cohorts. By 2000, however, the rise in the off-farm participation rates of younger workers accelerated relative to older ones, and a distinct ranking appeared as one moved from the oldest to the youngest cohort. In 2000, young workers in the 16-20-year-old cohort participated at rates more than three times (75.8 percent) those of 16-20 year-olds in 1990 (23.7 percent). Those in the 21-25 and 26-30 year-old groups doubled the off-farm participation rates of their 1990 cohorts. In contrast, older workers, while still increasing their participation rates by 17 percent, worked off the farm at less than half the rate, only 37.6 percent, of those in the 16-20 year-old cohort.

Our data illustrate a growing tendency for young workers to live away from home and engage in less farm work. In 1990, for example, of the younger workers who had off-farm jobs, more than half spent time (either part time or during the busy season) working on the farm. By 2000, less than a quarter of the youngest cohort who worked off the farm spent any time in agriculture. In contrast, in 2000, of those in the 41-50 year-old group who worked off the farm, over 80 percent were still working in agriculture, either on a part-time or seasonal basis.

The trends that are emerging across China's provinces vividly illustrate the changing nature of labor markets and the nation's emerging development path. For example, off-farm participation rates in the richest province in our sample, Zhejiang, are both historically higher and have grown faster than those in other provinces. By 1990, total off-farm labor participation in Zhejiang neared 40 percent, a level well above the national average. By 2000, the off-farm participation rate of rural residents across all of Zhejiang (including its poorest southern and western counties) had risen to nearly 65 percent, well above that of poorer provinces. In poorer provinces, such as Sichuan and Hubei, off-farm participation started at a much lower rate in 1981 and grew slowly until 1990. Since 1990, as migration has emerged as the dominant type of labor activity, labor participation rates in these provinces have accelerated. If the labor market

Comparison of Location of Migrant Employment (Percentage of Migrants Working in Specific Locations) by Age, 2000 and 1990

	Off-farm Job Located Within:		
	Own County	Province, But Outside of County	Another Province
All Off-farm Workers			
2000	29.8	30.4	39.9
1990	42.2	28.9	28.9
Workers Under 30 Years Old			
2000	26.1	28.9	45.0
1990	36.8	32.2	31.0
Workers Over 30 Years Old			
2000	37.4	32.9	28.7
1990	42.0	30.5	27.3

NOTE: Table compares workers who were, for example, 25 years old in 1990 with workers who were 25 years old in 2000.

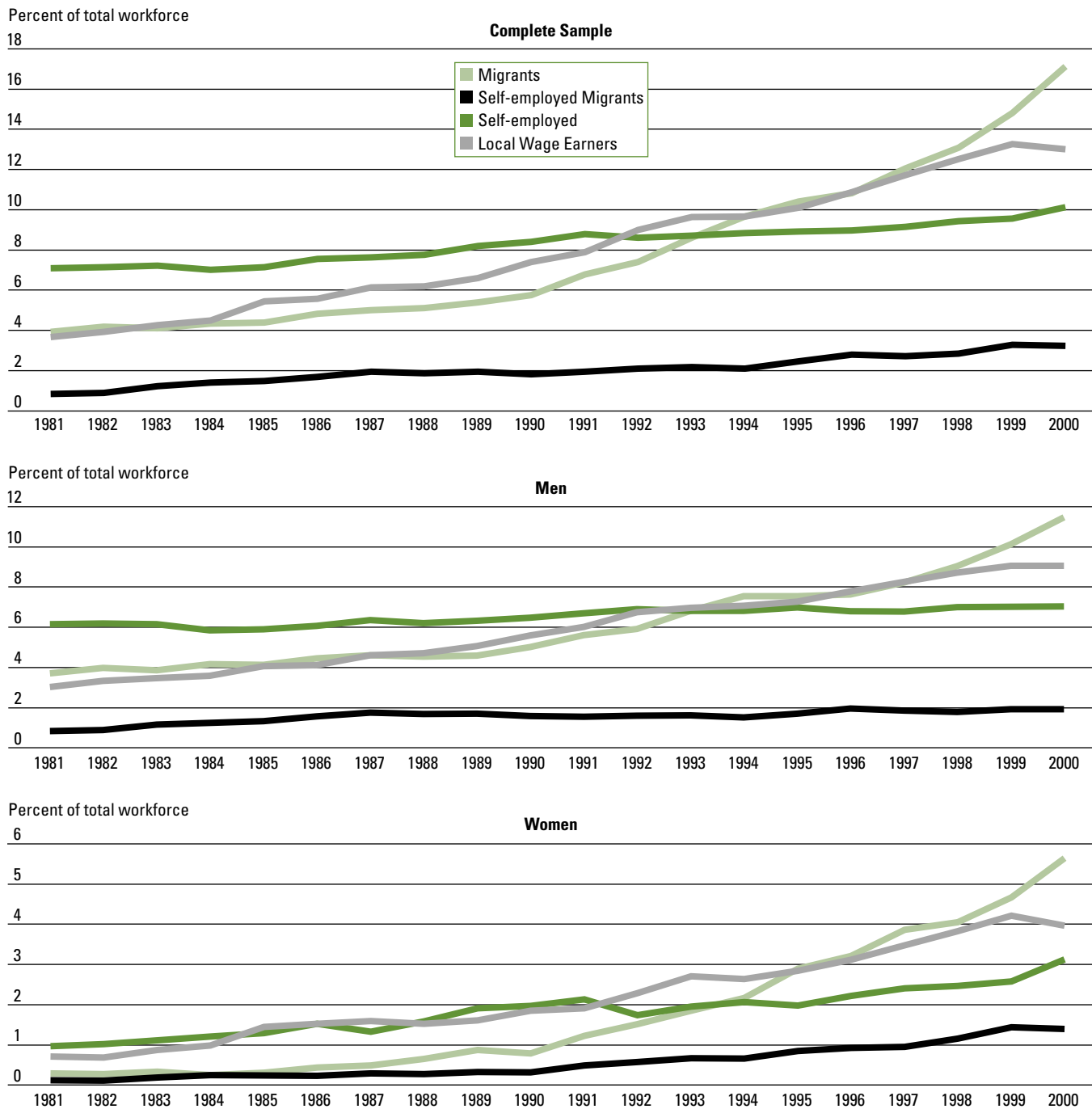
SOURCE: China National Rural Survey (CNRS)

trends of Zhejiang and other provinces portend the future growth paths for China as a whole, then we should expect to see continued strong and accelerating labor market growth in the coming years.

Effects of developing rural labor markets

Women have participated in off-farm work at rates far below those of men throughout the entire 20-year sample period. In 1981, the participation rate of men was more than 25 per-

Figure 1
Percentage of Total Labor Force Engaged in Different Types of Off-Farm Work



NOTES: Each line shows total percentages of all individuals (or men or women) engaged in that type of work. The figures include those who are participating part-time or seasonally in agriculture.

SOURCE: CNRS

cent, while that of women was less than 5 percent. And despite low initial levels of involvement in the off-farm sector, participation rates of women grew more slowly than those of men during the 1980s.

In the 1990s, however, the participation rate of women in the off-farm sector has risen faster than that of men. Women's rising participation rates have been driven by their entry into all job categories, although the most striking absolute gains have come in migration. Throughout the 1980s, less than 1 percent of women left their homes to work for a wage. Since 1990, however, the rate of growth has been higher than any category of job types for either men or women. By 2000, nearly 6 percent of the female labor force worked as wage-earning migrants. One interpretation of this rise in the participation of women is that more competitive labor markets have forced managers to reduce discriminatory hiring practices, therefore opening up new employment opportunities for those who had previously been unable to participate. Alternatively, the rise in women's employment could have occurred as industries that utilize women's skills, such as textiles and other light manufacturing developed.

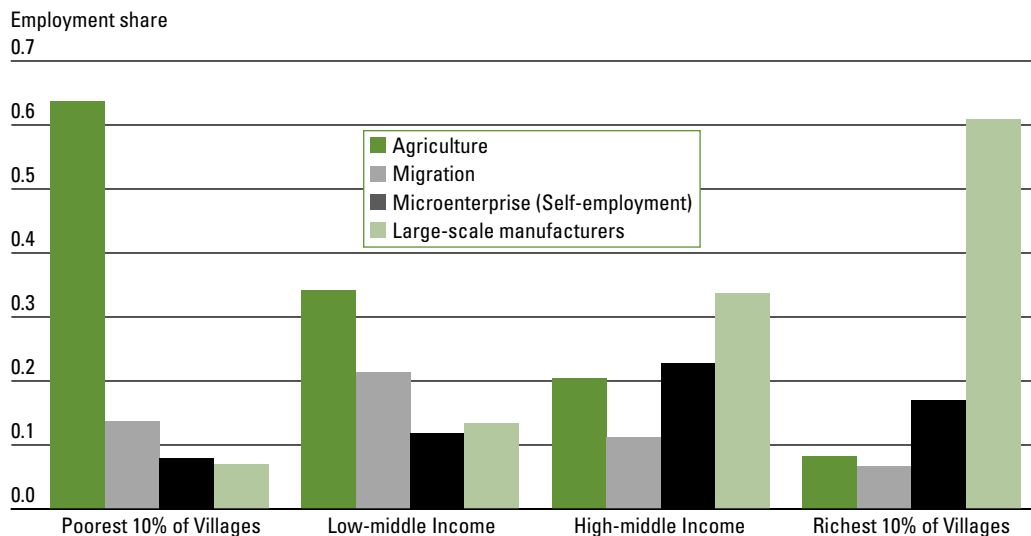
The emergence of labor markets may also have facilitated the emergence of specialized modes of production across China. Drawing on our national community-based survey of 215 randomly selected villages from eight provinces across China in 1995 (including the same six provinces in the 2000 household survey), we find a distinct pattern in the distribution of economic activity. (These 1995 figures are from Sandeep Mohapatra, Scott Rozelle, and Jikun

Huang, "The Evolution of Modes of Production and China's Rural Economic Development." Working Paper, Department of Agricultural and Resource Economics, University of California, Davis, 2001.) The paper of Mohapatra et al. illustrates that employment patterns have been used in a number of studies to represent different types of economic activity.

Figure 2 ranks the villages by average per capita income and shows the percentage of each quintile's workforce that is employed in subsistence agriculture (farmers who only have agricultural income), migration, microenterprise (self-employment), and large-scale manufacturing. In the poorest 10 percent of villages in the sample, people work primarily in subsistence agriculture and are relatively more likely to work in subsistence agriculture than those in richer villages. In contrast, the percentage of the workforce engaged in migration is higher in villages in the lower-middle income category than other income categories. Likewise, upper middle-income villages tend to specialize in microenterprise operation and participate much less in migration. Finally, large-scale manufacturing is the dominant employer in the richest 10 percent of the sample villages.

A closer examination of our data shows that village specializations across space are interlinked and demonstrates how labor markets have helped transform China's economy. Much of the labor in rural industry (which is almost exclusively located in the suburbs of major metropolitan regions) has come from other rural areas. The emergence of migrant labor markets has facilitated the concentration of large quantities of labor and may have allowed

Figure 2
Employment Shares Among Off-farm Sectors by Income Levels



NOTE: Shares do not add to one because of "idle" laborers or because of people splitting their time between two endeavors.
SOURCE: CNRS

the rise of large-scale manufacturing in the richest parts of China.

Factors that encourage migration

To decompose the labor market trends during the reform period further and to examine the determinants of off-farm labor participation, we estimated the determinants of migration, local wage employment, and self-employment using the entire 20-year sample. Some of our findings include:

{B} A larger household labor force increases participation in the wage earning sectors.

{B} Male participation in migration is more than 280 percent higher than female participation during the entire sample period. Likewise, male participation exceeds female participation by 107 percent in the local wage earning markets and 229 percent in self-employed activities.

{B} Younger workers are 97 percent more likely than identical individuals who are 10 years older to be migrant workers. In the case of migrant wage earners during the entire sample period, the older an individual is, the less likely he or she is to work off the farm.

Our results also show the importance of human capital—education, training, and experience—in determining an individual's participation in off-farm activities. For each additional year of education, the probabilities of becoming a migrant or a local wage earner both rise by 16 percent. Participation in formal training and apprenticeship programs seems to increase participation in all forms of labor market activity. Individuals also benefit from the experience of other household members. When members of a household in China have experience in off-farm labor markets, other individuals in the same household are more likely to work off the farm.

This pattern appears across provinces in China. In Zhejiang, one of China's most developed provinces, rural residents are participating in markets at younger ages, and are better rewarded for their formal education with employment opportunities, than in other provinces. Zhejiang women are far more likely to have off-farm employment in the province. Additionally, the variables that show that individuals find jobs through family connections (instead of according to their own human capital) are either insignificant or smaller in magnitude for Zhejiang than in the rest of China. In summary, assuming that Zhejiang's labor markets foreshadow trends for the rest of China, the evolution of labor markets nationwide is proceeding in a positive and productive direction.

Promising results for future labor markets

China's rural labor markets are performing in a way consistent with an economy that is shifting from an agricultural to a non-agricultural base and a population that is shifting from rural to urban. Our descriptive analysis illustrates that labor markets have allowed migration to become the dominant form of off-farm activ-

China National Rural Survey

The China National Rural Survey (CNRS), which provided the data for this study, was conducted in fall 2000 in a randomly selected, nearly nationally representative sample of 60 villages in Hebei, Hubei, Liaoning, Shaanxi, Sichuan, and Zhejiang provinces. Data collection involved students from the Center for Chinese Agricultural Policy, Renmin University, and China Agricultural University, and was led by Loren Brandt of the University of Toronto, Scott Rozelle of the University of California, and Linxiu Zhang of the Center for Chinese Agricultural Policy, Chinese Academy of Sciences. Households were paid ¥20 (\$2.42) and given a gift to compensate them for the time that they spent with the survey team.

To reflect varying income distributions within each province accurately, in each province we randomly selected one county from within each income quintile, as measured by the gross value of industrial output. Two villages were randomly selected within each county. The survey teams used village rosters and our own counts to choose 20 households at random, both those with their residency permits (*hukou*) in the village and those without. A total of 1,199 households were surveyed.

The CNRS project team gathered detailed information on household demographic characteristics, wealth, agricultural production, nonfarm activities, and investment. Several parts of the survey were designed to learn about the household's migration decisions as well as its participation in other labor market activities over time. For roughly half of the households surveyed (610 out of 1,199), a 20-year employment history form was completed for each household member and each child of the household head (even when they were no longer considered household members). For each year between 1981 and 2000, the questionnaire tracks each individual's participation in off-farm employment, the main type of off-farm work performed, the place of residence while working (within or outside the village), the location of off-farm employment, and whether or not each individual was self-employed or earning a wage.

Using the employment history data, we separated off-farm jobs into four types: migrant wage earners (migrants); self-employed migrants; local wage earners; and local self-employed workers. Migrants were identified as people with off-farm jobs who did not live in the household while working. Local wage earners were identified as people who had off-farm employment, were not self-employed, and lived at home while they worked. All people who reported being self-employed and living off the farm were categorized as self-employed migrants. The definitions applied to both members of the household and children of the household head.

We asked about the extent of the participation of each member, in each year, in the household's on-farm activities. A household labor force measure was created by aggregating all individuals above the age of 16 who indicated that they were either working in or searching for employment in agriculture or industry in each year. If a person over 16 indicated they had retired, could not work for health-related reasons, or were enrolled full-time in school, they were not included in the labor force total.

We also included variables measured at both the individual and household levels to explain off-farm labor market participation. In most of our estimations, we use data on 2,297 individuals from 610 different households that were employed—in either the on-farm or off-farm sector or both—at some time during 1981-2000. Because some individuals enter the labor force during this period and others stop working, we do not have a full panel of 45,940 observations; rather, we have 34,257 observations in total. We omitted villages in the rare case in which there was zero participation in a particular type of employment. As a result, 33,214 observations from 59 villages were used to explain migration participation, and 33,198 observations from 59 villages were used to explain participation in self-employment.

—Scott Rozelle et al.

ity; been increasingly dominated by young workers; expanded most quickly in economies or areas that are relatively well-off; and increasingly drafted workers from groups in the population, such as women, that had been excluded from participation. Rural workers also showed signs of specialization, particularly when examined by age group and by the average per capita income of their village. Young workers worked much less on the farm than older workers in 2000. Most remarkably, young workers in 2000 participated in much less farm work when compared to those in the same age groups in 1990 and 1981. China could be producing a new generation of rural residents who know much less about farming than their predecessors and who will spend their whole lives off the farm.

We also find robust support for all of the descriptive findings and show that many of the trends most consistent with the emergence of economy-transforming labor markets are becoming stronger. Most notably, the rapid rise in employment continued even during the late 1990s, a time when some feared that macroeconomic conditions might keep rural residents on the farm or drive them back to the farm.

Over time and across China, stronger, younger, and better-educated workers are working off the farm. Barriers to entry are falling for women. Labor markets are showing less and less preference for non-market characteristics, such as personal connections (or *guanxi*). If China continues to change at the pace it has in the past 20 years and as it has in its wealthier regions, we should expect rural residents to continue shifting from rural to urban areas and from agricultural to industrial work. Indeed, all of these trends are consistent with an optimistic view of China's future development—at least in terms of labor markets.

Well-functioning labor markets will also help ease China's rural economy through its accession into the World Trade Organization (WTO). Workers from rural areas, including some of China's poorer regions, will be able to take advantage of new employment opportunities in factories built to meet higher demand after China gains better access to world markets. Moreover, to the extent that households are able to put a member into an off-farm job, adverse effects from WTO-induced lower agricultural prices can be at least partially offset. Foreign companies, both those that are already in China and those that enter after WTO, should expect to find ever more eager, readily available, and better trained workers.