Job Placement and Job Shift across Employment Sectors in Reform-Era China: The Effects of Education

Lijuan Wu

University of Maryland

Abstract:

Using the first wave (1989) and the fourth wave (1997) of the CHNS data, this study investigates the effects of education on one aspect of the labor market outcomes—individuals' access to different employment sectors in the era of market-oriented economic reform in China, specifically, the job placement among the employment sectors for young workers (age 17 to 24) and the job shift across the employment sectors for older workers (age 25 to 44). The change of these effects on young workers' job placement from 1989 to 1997 is also examined. It is found that education is important in determining young workers' employment sectors and older workers' destination of employment sector if they change jobs, and the better-educated workers are more likely to have the access to the state and collective sector. The findings suggest that the access to different employment sectors is not equally distributed among Chinese workers. The hierarchy of employment sectors is reproduced through the procedure that assorts individual workers of different education levels to different employment sectors.

Introduction

The past two decades have witnessed the rising interests on how the market transition in China has been changing the stratification of the society (for a review, see (Bian 2002), especially the labor market outcomes. The theoretical debate is concentrated on the rising influence of human capital and the declining power of political capital in determining the socioeconomic status of individuals(Nee 1989; Nee 1991; Nee 1996; Walder 2002; Wu and Xie 2003; Xie and Hannum 1996; Zhou 2000). The majority of the empirical studies developed around the debate focus on one specific labor market outcome, that is, income inequality (Cao and Nee 2002). However, considering that the labor markets in China are essentially segmented (Bian 1994) and the entrance into the core sectors constitutes the primary goal of status attainment (Lin and Bian 1991), it is necessary to investigate the procedure that sorts individuals into different sectors of the labor markets in the reform-era. This research attempts to fill the gap by focusing on the access to different employment sectors as the outcome variable. The aim of this study is to understand how education has influenced the job placement and job shift across employment sectors during the era of economic reforms. Specifically, I address the following questions: is there any differentiation on the access to different employment sectors among individuals with different levels of educational achievement? Has the influence of education increased as the economic reform proceeds?

To answer the research questions, this research uses the longitudinal data obtained from the first wave (1989) and the fourth wave (1997) of the China Health and Nutrition Survey (CHNS). Recognizing that entering an employment sector at the very early stage of one's career is different from transferring to an employment sector from another sector

at the later stage of the career, I do separated analysis on the job placement of young workers (age 17 to 24) and the job mobility of older workers (age 25 to 44).

The Structure of Employment Sectors in China

Prior to the market-oriented economic reform, which was launched in 1979, China was featured as a state-socialist economy. The agricultural production was collectivized and the nonagricultural production was nationalized. More importantly, the government played a central role in the economy through its control on the productions and sales of almost all the agricultural and nonagricultural products. The private sector barely existed in the economy. Moreover, the employment system under the state-socialist economy before the economic reform was characterized by immense disparity and high-degree segmentation of the agricultural (rural) and nonagricultural (urban) sectors. The nonagricultural sector was no doubt superior to the agricultural sector in terms of income, benefits, and prestige (Parish and Whyte 1978; Riskin 1987; Selden 1993; Whyte and Parish 1984). The reform has conspicuously transformed the structure of China's employment sectors.

At the very early stage of the economic reform, the collective agricultural production has been dismantled. The farmers' households have become the unit of production since then and are in full charge of the farming land that is contracted to them (Knight and Song 1999). In the meantime, the government encouraged the development of small private businesses in both urban and rural areas with caution. The private sector gradually revived during the economic reform period, and the government eventually legitimized the private ownership of businesses, small or large (Garnaut and Song 2004).

Nevertheless, unlike the Eastern European countries, China does not take its state-owned and collective enterprises down to the route of mass privatization. Instead, reforms from inside had been the approach to improve the performance of the state-owned and collective enterprises during the first 15 years of the reform. Even after the large-scale ownership reform began in the mid 1990s, many enterprises with good economic performance remain to be state or collectively owned (Lardy 1998). As a result, the state-socialist economy and the market economy coexist in contemporary China. And the proximity to the market economy varies among the economic sectors.

Clearly, having been growing outside the economic planning system of the government, the private sector is closest to the market economy. Family farming seems to be under the market economy except that the land is still owned by the government and equally distributed among farmers' households. In addition, the agricultural production has to bear the burden of "urban bias" resulted from the government's macroeconomic policies for development. Since the state and collective sectors are inherited from the pre-reform era, they have maintained many features of the state socialist economy and may be the farthest from the market economy. To put it together, the private sector, the sector of family farming, and the state/collective sector are three employment segments that operated under different institutional arrangements in China's economy.

Although the pre-reform hierarchy of the nonagricultural and agricultural employment sector has been shaken loose in the reform period due to the emergence of new employment opportunities in the private sector that are not directly controlled by the government in both rural and urban areas, the economic reform does not erase the disparities between the nonagricultural and agricultural sectors. As shown in Table 1, the

per capita income has been rising in both urban and rural areas since 1979. However, the urban-rural gap in per capita income is persistent during the economic reforms. Figure 1 presents the urban-rural ratio of per capita income from 1979 to 1997. When the economic reform began, the urban income was about 2.4 times higher than the rural income. The head start of rural reform helped close the urban-rural income gap during the early stage of the reform era. But the trend did not continue. After 1985, the urban-rural income inequality went up and by 1991 surpassed the level of 1979. The gap had further widened in the following three years and then started to drop a bit. In 1997, the average income of urban residents was about 2.5 times higher than that of rural residents.

In addition, the rise of new employment sectors has added some complexities to the picture. In rural areas, while wage work has been found to be an important route to improve income for ordinary rural residents (Knight and Song 1999), starting a business is no doubt the fast track to becoming rich (Cook 2000). However, the land tenure system after the economic reform does not encourage rural residents to completely give up family farming. Farmers' households have the rights to use the land assigned to them. But they would have to return the land to local authorities if they had permanently left agriculture (Yang and Zhou 1999). By turning in the land, the farmers' households would give up not only the future land earnings but also the economic security provided by the land because there is always the risk of losing an off-farm job or losing money in business and rural residents are not entitled to social welfares that are available to low income urban households whose official household registration status is "nonagricultural". As a result, except for a few highly industrialized rural areas where

farming lands have been massively taken over to build factories, family contract farming is still an indispensable economic activity for most rural households.

The situation in urban areas is similarly, if not more, complex. During the reform era, the wage levels have been rising in the state, collective, and private sectors of urban economy (Table 2). However, there are significant wage gaps among the employment sectors. Figure 2 displays the private-state and collective-state wage ratios since 1979. Relative to the state sector, private sector has always had a higher wage rate after the economic reform started. The wage gap between these two sectors had been widened until 1993. Since then, the gap has been stable. By 1997, the wage rate of the private sector is 1.3 times higher than that of the state sector. In contrast, the collective sector has constantly suffered lower wage rate compared to the wage level of the state sector. The collective-state wage ratio fluctuated in the 1980s and further dropped in the 1990s. In 1997, the average wage of the collective sector is only 67 percent of the wage of the state sector. Although the private sector enjoys the highest wage rate, the average levels of insurance and welfare benefits are much higher in the state sector than in the private sector. The collective sector does not have the advantage on the welfare benefits over the private sector. However, the state and collective sectors invest heavily on employee's housing, while the private sector rarely does so (Zhou et al. 1997). Therefore, the state and collective sectors provide more latent benefits than the private sector. In addition, job security was not a problem at all in state and collective sectors until more mid-sized enterprises were involved in the ownership reform in 1995. Even so, the jobs in government agencies, public institutions, and large state-owned enterprises with good records on financial performance are still safe.

The changes in the structure of employment sector from the pre-reform to the reform era are summarized in Figure 3. The economic reform has restructured the employment sectors of China in following ways. The first and most obvious one is the emergence of new sectors. Specifically, the growth of the private sector in urban economy and the nonagricultural sector in rural economy has changed the composition of the employment sectors in the reform era. The second aspect is about the mobility across employment sectors. Compared to pre-reform era, job mobility has become relatively easier because of the partial reforms of the household registration system and the elimination of the urban rationing system. Lastly, relative to the clear-cut division of employment sectors in the pre-reform era, the hierarchy of the employment sectors has become more complicated by the diversified rewards across employment sectors. On the one hand, the newly emerged private sector seems to offer its workers the highest income. On the other hand, family contract farming can be considered the most secure job. It should be noted that the relative position of the state and collective sectors to the private sector is a bit uncertain due to the ongoing reforms in the state/collective sectors.

To conclude, the segmentation of the employment sectors based on a series of economic and social institutions had made the employment sector an important dimension of social stratification in pre-reform China. Although the structure of the employment sectors has changed in the reform era due to the transformation of the old employment sectors and the emergence of the new employment sectors, the differentiations on monetary and non-monetary rewards between the employment sectors do not diminish. Rather, the different institutional arrangements among the state/collective sector, the private/other sector, and the sector of family contract farming

lead to the differences in the rewarding system of each employment sector. Consequently, working in different employment sectors means the differentiations in the opportunity structures faced by individual workers. From that perspective, the employment sectors continue to function as an important dimension of social stratification in reform-era China. Therefore, the access to the employment sectors deserves to be investigated to gain a better understanding on the impacts of the economic reform on the process of social stratification in contemporary Chinese society.

The Return to Education in Different Employment Sectors

Education is viewed as one of the most important factors of human capital, which determines the productivity of workers, by economists (e.g.(Schultz 1971). To understand the relationship between education and the access to different employment sectors in China, the return to formal education in each employment sector should be taken into account. The market transition theory, first articulated by Victor Nee (Nee 1989), (Nee 1996), suggests that the sectors that are closer to the market economy may value education more than the sectors that closer to the state-socialist economy. If that is the case, better-educated workers will prefer to work in the sectors where the mechanisms of market economy dominates. However, further examinations on the reward system of each employment sector finds that the differences in the economic returns to formal education among the employment sectors is more complicated than the market versus state dichotomy suggested by the market transition theory.

First of all, the reward system of the state/collective sector in reform-era China also values education. Researches on the determinants of income in the state/collective

sector find that educational achievement is positively associated with earnings (Peng 1992; Wu 2002; Zang 2002). In addition to economic returns, college-educated workers have become significantly more likely to be recruited by the Communist Party during the reform era, and the party membership is an important political capital for career advancement in the state/collective sector (Walder 1995; Walder et al. 2000; Zhou et al. 1996; Zhou et al. 1997). In sum, better-educated workers are in an advantageous position in terms of gaining both economic and non-economic rewards in the state/collective sector.

Secondly, the mechanism determining the economic returns to education in the private sector is different from the private/state sector. Peng (1992) suggests that pay differentials between different education levels "are written into the remuneration system" (p. 208) in state-owned enterprises. However, the reward system in the private sector is mostly based on the workers' performance. It is found that while a worker's education level is positively associated with his or her wage in the state/collective sector, such a pattern cannot be found among workers without college education in the private sector. Therefore, it is likely that education is only rewarded to the extent it enhances performance in the private sector (Zang 2002). In other words, education is directly rewarded in the state/collective sector, but indirectly rewarded through workers' performance in the private sector.

Thirdly, the private sector does not reward formal education universally. By making the distinction between workers who entered the private sector before and after 1987, Wu and Xie (2003) found that only those who entered the private sector after 1987 enjoyed significantly higher earnings than did those who had continuously worked in the

state sector. Moreover, the earning advantage of working in the private sector is limited to those workers with high levels of education. The findings imply that the private sector does not have any inherent nature which leads to a higher returning to education.

Lastly, the state policies have been guiding the economic reform in China and have strong impacts on the opportunity structure of each employment sector. The farming land contracted to farmers' households is usually composed of scattered small plots of land due to the egalitarian approach of land allocation. Moreover, the costs of inputs for agricultural production have risen but the price of grain has not changed much since mid 1980s. Consequently, the agricultural production has been in stagnation (Khan and Riskin 2001). That means the sector of family farming cannot provide many opportunities for individuals working on the family farm. The opportunities in the private sector were limited in the 1980s because of the restriction on the size of the privately owned business. The legitimization of private ownership has stimulated the development of the private sector and created more lucrative opportunities in the private sector in the 1990s (Wu and Xie 2003). The state/collective sector continued to provide many opportunities that are not available outside the sector until the mid 1990s. The large-scale ownership reform of the state/collective sector in the mid 1990s leads to the close of many enterprises and the lay-off of large numbers of workers in the state/collective sector. As a result, the unique benefits of working in the state/collective sector such as lifetime employment and better welfares are disappearing.

In summary, the state/collective sector seems to have developed a systematic way to reward formal education. The distribution of earning and political capital (and hence career development) is closely associated with educational achievement. However, some

advantages of working in the state/collective sector such as job security and better welfares are weakened during the ownership reform in the mid 1990s. The rewarding system of the private sector is more likely to be performance-based. Although better education will probably lead to better performance, the returning to formal education in the private sector is not guaranteed by wage policies. The expansion of the private sector in the 1990s appears to have benefited college-educated workers more in the sector. The sector of family farming does not reward formal education much simply because the low level of earning potential in this sector. To conclude, the differentiation of the rewarding system to formal education among the employment sectors and the evolving reform policies might have influenced the procedure that matches workers of different education levels with different employment sectors.

Based on the literature, I expect the following relationships between educational achievement and the access to different employment sectors.

Hypothesis 1: Among young workers, education levels are positively associated with the possibility of working in the state/collective sector and the private sector but negatively associated with the likelihood of working on the family farm.

Hypothesis 2: The association between education and employment sectors among young workers is changing in the course of economic reform. As a result of the growth of the private sector and the decline of the state/collective sector in the 1990s, the effect of education becomes stronger for entering into the private sector over time. At the same time, the effect of education declines for entering into the state/collective sector. The negative association between education and family farming remains stable over time.

Hypothesis 3: Among older workers, education levels are positively associated with the possibility of transferring to the state/collective sector or the private sector. On the contrary, education levels are negatively associated with the possibility of moving to family farming.

Data and Samples

The data for my study come from the China Health and Nutrition Survey (CHNS), a longitudinal household study conducted in 1989, 1991, 1993, 1997, 2000, and 2004. The survey is sponsored by the University of North Carolina at Chapel Hill and the Institute of Nutrition and Food Hygiene of the Chinese Academy of Preventive Medicine. The main goals of the survey are to inspect how the social and economic transformation of Chinese society affects the health and nutritional status of its population, but the survey collected rich information on household members aged 16 and above, including details of their employment. Therefore, the data can be used to examine the employment sectors of individuals over time. Due to the design of the survey, the CHNS data are not nationally representative, but do represent the surveyed population, which accounted for roughly a third of China's population.

This research uses the first (1989) and the fourth (1997) wave of CHNS to construct two analytical samples. One set of analyses focuses on the combined cross-sectional sample of the youth (aged 17 to 24) from the two survey waves. The second concentrates on the panel sample of adult workers who aged 25 to 44 in 1989 and worked in 1997 as well.

The cross-sectional sample is composed of individuals between ages 17 to 24 in 1989 and in 1997 separately. Due to the 8-year gap between the two waves of the survey, there is no overlap of the individuals in both years. The purpose of this portion of the analysis is to examine the effect of education on the attainment of entry-level jobs in different employment sectors. Considering that a large proportion of this age group may have not joined the labor force due to schooling or prolonged transition from schooling to employment, the youths who were working at the time of the survey are indeed a selected group. A way to deal with the selectivity problem is to treat not-in-the-labor-force as a parallel outcome to working-in-different-employment-sectors. Hence, the cross-sectional sample of the youth includes all the individuals in the age group, regardless of their employment status. The total number of youths in the sample is 4,156, with 2,388 from year 1989 and 1,768 from year 1997.

The panel sample of the adult workers includes employed individuals who were between ages 25 to 44 in 1989 and were in the labor force in 1997. The purpose of the sample is to investigate the determinants of job shifts across employment sectors. Since the CHNS does not collect the information on the employment history of respondents, it is likely that some of the workers in the panel sample may leave the labor force or change their employment sectors between waves. Therefore, the overall rate of job mobility across employment sectors might be underestimated in this study. Additionally, it should be noted that not all respondents in the first wave of the survey were still around in the fourth wave of the survey. Table 3 presents the distribution of the lost cases for various reasons. Among the initial 15,917 observations of the first wave, 9,107 (57%) stayed in the survey during the fourth wave. Of the lost cases, 37.2 percent can be attributed to the

replacement of the survey sites (including the replacement of provinces and communities), 22.4 percent are the households that cannot be found on the revisited survey sites, and more than 40 percent are individuals who are not available anymore in the revisited households. For the analytical sample, there are 4,411 workers aged 25 to 44 in the first wave of CHNS, and 2,833 (64%) of them are tracked down in the fourth wave.[1] Among the 1,578 lost observations, more than half (53.1%) are from the province and communities that are replaced in 1997, 26.4 (n = 416) percent are individuals of the households that are replaced in 1997, and 20.5 (n = 323) percent are individuals who could not be found in the resurveyed households. According to the design of CHNS, the household members who have moved out of the original household of the first wave but stayed in the same community are tracked down. Considering the low mortality rate of this age group (25-44), it is very likely that the 416 households and 323 individuals who could not be found in the re-interviewed sites have moved out of their original communities.

Further analysis shows that the workers who had left the survey (leavers) are very different from those stayed in the survey (stayers) with regard to their demographic and socioeconomic characteristics. Table 4 lists the distributions of age, education, gender, marital status, employment sector, residence, and family's background in each employment sector in 1989 for the stayers and leavers. Considering the multiple reasons of losing cases from 1989 to 1997, the leavers are divided to three subgroups: those who left the survey because the whole survey site was replaced, those who left the survey because the whole household could not be found, and those who left the survey because the individuals could not be found. The characteristics of all leavers are also presented in

[1] The sample size for multivariate analysis is smaller (n = 2,510) due to missing values.

the table. Although there are some variations on those features among the leavers, the observed general differences between leavers and stayers still hold for each subgroup of the leavers. In general, relative to the stayers, leavers tended to be younger, better educated, male, single, employed by the state/collective sector, living in the cities and towns, and from families with other member working in the state/collective sector. This means that the panel sample of adult workers has some bias, and we need to be cautious when interpreting the results from the analyses of the panel sample.

Variables and Analytical Methods

Three sets of dependent variables are derived from the record of employment sector of the respondents' primary job in CHNS. The first one is about the primary employment sectors of young respondents aged 17 to 24. CHNS asked the respondents about the "type of work unit" of their primary job. Based on the answer to that question, a respondent's employment sector is grouped into: (1) state and collective sector, (2) private and other sector, and (3) family contract farming.[2] In addition to the three employment sectors, two other categories—(4) not working, and (5) still in school—are also created to capture those who were not active on the job market at the time of the survey.[3] Employment in the state and collective sector includes working in the state enterprises and institutes, large collective enterprises owned by county, city, and province,

[2] In 1989, however, there is no separate category of "family contract farming" in the answers to the question of the type of work unit. Therefore, the category is constructed from the information of the respondent's primary occupation and type of work unit. If the respondent's primary job is "farmer" and the type of the work unit is "private, individual" or "other", the respondent is assumed to work on thee family farm.

[3] For those who were not on the labor market between ages 17 to 24 at the time of survey, 58% were still in school and 42% were not working. Considering the overall high labor force participation rate in China (about 90% for men and 80% for women between ages 16 to 64 according to the statistics by the United Nations), the unemployment of the young workers is very likely to be temporary.

and small collective enterprises owned by township and district. Individuals working in the enterprises and institutes that are owned by individuals (including the respondents themselves), foreign investors or other private parties are categorized as employment in the private and other sector. Individuals who work on the land contracted to the family by government are categorized as working for family contract farming.

Based on the three categories of the employment sectors—state/collective sector, private/other sector, and family contract farming, the other two sets of dependent variables are about the job shifts across employment sectors among adult workers (age 25 to 44) over time. The first is a dichotomous variable about whether a change of employment sector has happened between 1989 and 1997. A second set of the outcomes of job shifts across employment sectors is limited to individuals who have changed their employment sectors. It specifies the destination of the change. Corresponding to the three categories of employment sectors, there are three possible destinations of the change of employment sectors: (1) moving into the state and collective sector, (2) moving into the private and other sector, and (3) moving into the family contract farming. Accordingly, three dichotomous variables are created for the destinations of job shifts across employment sectors.

The education level is measured by the respondent's total years of formal education completed in all kinds of regular schools. Four levels of education are extracted: (1) no schooling, (2) primary school, (3) middle school, and (4) high school and above, including vocational school, technical school and college.[4] In the multivariate analysis,

[4] Ideally, "college education and above" should be grouped into a separated category. However, on average, only 3.5% of the labor force had college education in 1997 (State Statistic Bureau, 1998), and the proportion was even lower in 1989. Accordingly, a small number of observations in the CHNS have

in addition to education, I control for age, gender, marital status, demographic composition of the family, total family income, the employment sectors of other family members, residence, and province, which are the factors that could have some influence on the employment sector of Chinese workers according to the literature.

I use multinomial logit models to investigate the factors affecting the attainment of jobs in different employment sectors among the youths. The Multinomial logit model is chosen because there are five mutually exclusive categorical outcomes of employment for the youths: in school, out of school but not working, working in the state/collective sector, working in the private/other sector, and working on the family farm. Since the outcomes of the job shifts across employment sectors among older workers are dichotomous, I use logit models to explore the determinants of such job shifts among the adult workers. As I mentioned earlier, there are four outcomes to be examined: (1) changed employment sector or not, (2) moved to the state/collective sector or the other two sectors, (3) moved to the private/other sector or the other two sectors, and (4) moved to family farming or the other two sectors. In accordance, four logit models are estimated. The second to the fourth outcome only applies to those who have changed their employment sectors. In each model, the independent and control variables always take their values in 1989 in order to establish a solid casual relationship between the independent variables and the outcomes, which must have taken place after 1989.

Due to the method of clustered sampling used by CHNS, there is a legitimate concern on the interdependence of the observations. Individuals who came from the same community, county, city, or even province may share some characteristics, so they are

---

college education (N = 412 for the sample of youth, and N = 119 for the sample of older workers), which makes it difficult to have the college education as a separated category in the multivariate analyses.

not truly independent from each other. Most importantly, since the survey collected employment data on each family member aged 16 and over, it is possible that two or more individuals from the same household are included in the same analytic sample. Therefore, when estimating the models for the cross-sectional and the panel sample, the standard errors are always adjusted to specify that the observations are not necessarily independent within household.

Effects of Education on the Job Placement of Young Workers

In Table 5, it is clear that education has strong effects on the employment sectors of young workers. Relative to the young workers with primary school education or less, those with middle school education are more likely to work for the state/collective sector or the private/other sector rather than on family farm. That advantage of education is even greater among those with high school or higher education. With regard to the choices between the state/collective sector and the private/other sector, the youths with middle school education are less likely to work in the private/other sector than those with primary school or less education. Similarly, the youths with high school or higher education are less likely to work in the private/other sector than those with primary school or less education. In other words, better-educated young workers are more likely to work for the state/collective sector than for the private/other sector.

To detect the period difference of the education effects, the interactions between year and education levels are added to the model (Table 6). The likelihood-ratio test shows that the model in Table 6 is significantly better comparing to the model in Table 5, indicating that there is a notable period difference of education effects. The coefficients

of the interactive terms in the model suggest that the positive effect of high school or more education has become stronger on sending young workers to the state/collective sector versus farming (coef. = 1.035) from 1989 to 1997. In addition, the high school or more education has increased the gap in the likelihood of entering the private/other sector versus the state/collective sector (coef. = -.995) in 1997. Nevertheless, the effect of high school or more education on the probability of working in the private/other sector versus farming does not change significantly between 1989 and 1997.

In Table 7, it is obvious that in 1989 the probability of finding a job in the state/collective sector exceeds the probability of working on the family farm if the respondent has middle school education, and the difference in the probability of entering the state/collective sector versus family farming further increases among those with high school or more education. In 1997, however, the probability of getting a job in the state/collective sector does not outrun the probability of farming until the respondent reaches the high school education. The finding suggests that, relative to working on the family farm, it has become more difficult for the youths to enter the state/collective sector over time in the 1990s in terms of its requirement on young workers' educational achievement.

Table 7 also shows that the probability of working in the private/other sector is always lower than the probability of working in the state/collective sector among the young workers in 1989 regardless of the education levels. Nevertheless, young workers with middle school or less education have a higher probability to find a job in the private/other sector relative to the state/collective sector in 1997. Only among those with high school or more education, the probability of working in the private/other sector

becomes lower than the probability of working in the state/collective sector in 1997. Therefore, comparing to the entry of the state/collective sector, high school education demarcates the downward turn of the relative probability of entering the private/other sector in 1997. Such a dividing line on the relative probability of working in the private/other sector versus the state/collective sector by education does not exist in 1989. Considering that the state/collective sector has been declining in the 1990s, the finding suggests that the decline is much sharper for middle school educated youths than for youths with high school or more education. As a result, the educational differences in the likelihood of getting a job in the state/collective sector have increased.

In sum, for the youths, education has a strong impact on the probability of entering different employment sectors. Better education helps in getting an off-farm job for young workers. Between the two off-farm sectors, young workers with better education are more likely to work for the state/collective sector than for the private/other sector. The positive effect of high school or more education in sending young workers to the state/collective sector versus the other two sectors has become even stronger over time. It is understandable that better-educated youths are more likely to work off-farm. The increased income gap between farming and working in the off-farm sectors during the second decade of the economic reform makes farming the least attractive employment sector to the youths. Therefore, finding off-farm jobs could be competitive and make it difficult to enter the off-farm sectors for the young workers with low or no education. Interestingly, in spite of the overall decline of the state/collective sector in the 1990s, better-educated young workers are still more likely to join the state/collective sector than the private/other sector. Moreover, the state/collective sector seems to have become more

demanding on its young employees' educational achievement. The counter-intuitive finding might be understood by taking into account the selectivity issue when the state/collective sector is on decline. The firms and institutions left in the state/collective sector are very likely the ones that are still doing well in the 1990s and therefore remain attractive to qualified young workers.

Effects of Education on the Job Shifts of Older Workers

From Model 1 in Table 8, we see that the effect of education on the overall job change across employment sector is not statistically significant. But education matters in determining the destination employment sector of the job shifts. For instance, Model 2 (Table 8) shows that the higher the education, the more likely a worker is to move into the state/collective sector. Compared to workers of middle school education, workers with no education or only primary education have significantly lower probability of transferring to the state/collective sector. Workers with high school or more education are more likely to make such a transition, although the difference between them and those with middle school education is not statistically significant. That means middle school education is the threshold level of educational achievement that divides the workers into two groups regarding the access to the state/collective sector in their later stage of the career development: those with middle school or higher education have a higher probability of moving into the state/collective sector than those with less than middle school education.

With regard to the job shift toward the private/other sector (Model 3, Table 8), it is clear that, relative to the workers with middle school education, those without any

formal education are significantly less likely to transfer to the private/other sector. The workers with primary education or high school or more education are also less likely to move to the private/other sector comparing with those with middle school education, but the differences are not statistically significant. Hence, the educational threshold for the movement to the private/other sector seems to be primary education. While there is no difference between workers with only primary education and those with more higher education on their chances to move into the private/other sector, workers without primary education are significantly disadvantaged to find a job in the sector from outside.

Model 4 clearly shows that the association between education and the chance of moving into family farming is negative (Table 8). Compared to workers with middle school education, workers with no formal education have a significantly higher probability of making the transition to family farming. Relative to middle-school educated workers, workers with primary education are more likely to move to family farming, and workers with high school or more education are less likely to do so, although the effects are not statistically significant. Therefore, primary education is the threshold level of education to keep workers out of family farming. Workers with at least some primary education are less likely to move from the nonagricultural sectors to family farming than those without any formal education.

The research hypotheses on the effects of human capital on job shifts across employment sectors are partially supported by the importance of educational achievement in helping the workers transfer to the state/collective sector or to the private/other sector or keep them away from the family farming. Nevertheless, the association between education and the probability of moving to each employment sector is not linear. As a

matter of fact, there appears to be a different threshold level of education for transferring to an employment sector from other sectors. For the transfer to the state/collective sector, middle school education makes the difference. Primary education makes it easier to move to the private/other sector and to stay out of family farming. Moreover, probably because of the threshold level of education for moving in varies for each employment sector, the research hypothesis on the effect of education on the overall rate of job mobility across employment sector cannot be uniform across sectors.

The relatively low requirement regarding education for transfers into the private sector than for transfers into state/collective sectors is different from the research hypotheses, which expect that the state/collective sector and the private/other sector have similar educational requirements. There are two possible explanations for the lower educational threshold of transferring to the private/other sector than of moving to the state/collective sector. On the one hand, the employers in the private/other sector might be more flexible regarding education due to the lack of regulations on the recruitment of workers in the sector, and self-employment does not have any formal requirement on education. In contrast, the employers in the state/collective sector must follow the regulations when they recruit workers, which usually put middle school education as the minimum requirement on education. On the other hand, the ongoing lay-off of low-skilled workers in the state/collective sector might have made it more difficult for older workers with relatively lower educational achievements to transfer to the state/collective.

To sum it up, education does not have a uniform and statistically significant impact on the likelihood of changing jobs across employment sectors for workers aged 25 to 44 in 1989. However, among the workers who had moved to a different employment

sector, educational achievement determines the destination of the job shifts. The workers with no formal education are significantly and constantly disadvantaged. They have the lower probability to transfer to the state/collective sector or the private/other sector and the higher probability to move into family contract farming. Primary education significantly facilitates the transition to the private/other sector or prevents the transition to farming. But primary education is not enough for increasing the workers' chances of moving to the state/collective sector, for which middle school education makes the difference. Lastly, it should be reminded that the advantage of better education in increasing the probability of moving into the state/collective or the private/other sector and decreasing the probability of moving into family farming might be underestimated because the workers who stayed in the panel have an averagely lower level of education than those who had left the survey. The findings suggest that the state/collective sector is still more demanding on its workers' educational achievement than the private/other sector, although the state/collective sector has started to downsize during the 1990s. Family farming is the sector that requires the least on education, which is not a surprise since the sector is the least desirable one among all the three employment sectors.

Conclusion and Discussion

Concerning the effects of education on individuals' access to the employment sectors, this study finds that education is important in determining young workers' employment sectors and older workers' destination of job shifts. For young workers, educational achievement is negatively associated with the probability of working on the family farm and positively related with the chance of working in the state/collective

sector or the private sector. Nevertheless, between the state/collective sector and the private sector, it is found that better-educated young workers are more likely to enter the former sector. Moreover, such an effect has become stronger over time in spite of the decline of the state/collective sector in the economy in the 1990s. The finding implies that the downsizing of the state/collective sector is a highly selective procedure. As a result, the jobs in the state/collective sector not only remain their attractiveness to better-educated young workers but also become even more competitive. The analyses on the job shifts across employment sectors of older workers confirm the findings from the young workers. The education threshold of transferring into the state/collective sector is higher than the threshold of moving to the private sector. Workers' education levels are negatively associated with the possibility of moving to family farming, and those workers with no formal education are significantly more likely to leave their jobs in the state/collective sector or the private sector and go to family farming. To sum it up, there is a hierarchical distribution of workers with different levels of education across employment sectors during the reform era: the state/collective sector has been absorbing better-educated workers than the private sector does, and the private sector attracts better-educated workers than the sector of family farming does. In addition, the state/collective sector shows the tendency of becoming more demanding on its workers' educational levels.

The educational differences in the chances of working in different employment sectors reflect the process of reproduction of the hierarchical structure of the employment sectors guided by state policies in the reform era. Different from the prediction of the market transition theory (Nee, 1989, 1996), this study finds that individuals with better

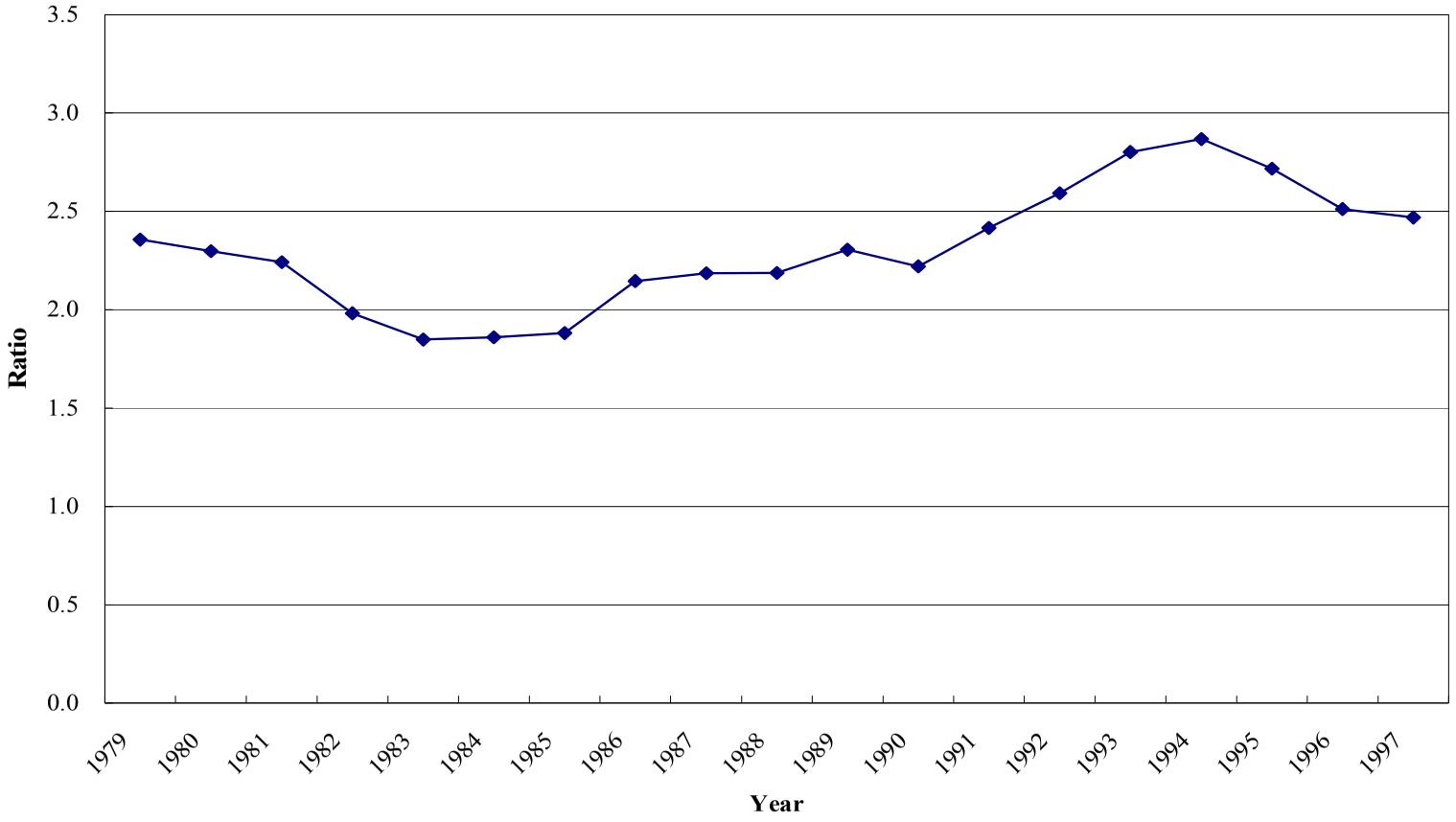
education (and thus higher level of human capital) do not necessarily choose the private sector, which is the closest to the market economy among the employment sectors in China's context. Instead, better-educated workers are more likely to join the state/collective sector, and the educational differentiation in the likelihood of getting a job in the state/collective sector than in the private sector has even become greater in 1997, when the ownership reform and large-scale layoff of workers in the state-owned and collective enterprises have been carrying on for a few years. Such a finding is consistent with a study conducted in 1999 on urban households, which found that the state sector remains as the preferred destination of job mobility among urban workers and rural-to-urban migrant workers (Knight and Yueh 2004). Apparently, the state/collective sector still offers sufficient incentives to attract both young and older workers with relatively high education levels even during the period when the state/collective sector is downsizing due to the ownership reform. In other words, the ownership reform of the state-owned and collective enterprises in mid 1990s does not weaken the state/collective sector. On the contrary, the reform has refined the sector by getting rid of the enterprises with unsatisfactory performances and dismissing workers with low skills. Consequently, the state/collective sector has maintained its superior position among the employment sectors, although its size has become smaller. The finding suggests the persistent power of the state in shaping the institutional structure in the reform era, and supports the argument that the state is still playing a central role in directing the institutional change in China's transitional economy (Zhou 2000).

Table 1: Urban and Rural Per Capita Annual Income (*yuan*): 1979-1997

Year	Urban	Rural	Urban/Rural Ratio
1979	377	160	2.36
1980	439	191	2.30
1981	500	223	2.24
1982	535	270	1.98
1983	573	310	1.85
1984	660	355	1.86
1985	749	398	1.88
1986	910	424	2.15
1987	1,012	463	2.19
1988	1,192	545	2.19
1989	1,388	602	2.31
1990	1,523	686	2.22
1991	1,713	709	2.42
1992	2,032	784	2.59
1993	2,583	922	2.80
1994	3,502	1,221	2.87
1995	4,288	1,578	2.72
1996	4,839	1,926	2.51
1997	5,160	2,090	2.47

Sources: State Statistical Bureau (1986, 1991, 1995, 1998), *China Labor Statistical Yearbook.*

Figure 1: Urban/Rural Ratio of Per Capita Annual Income: 1979-1997



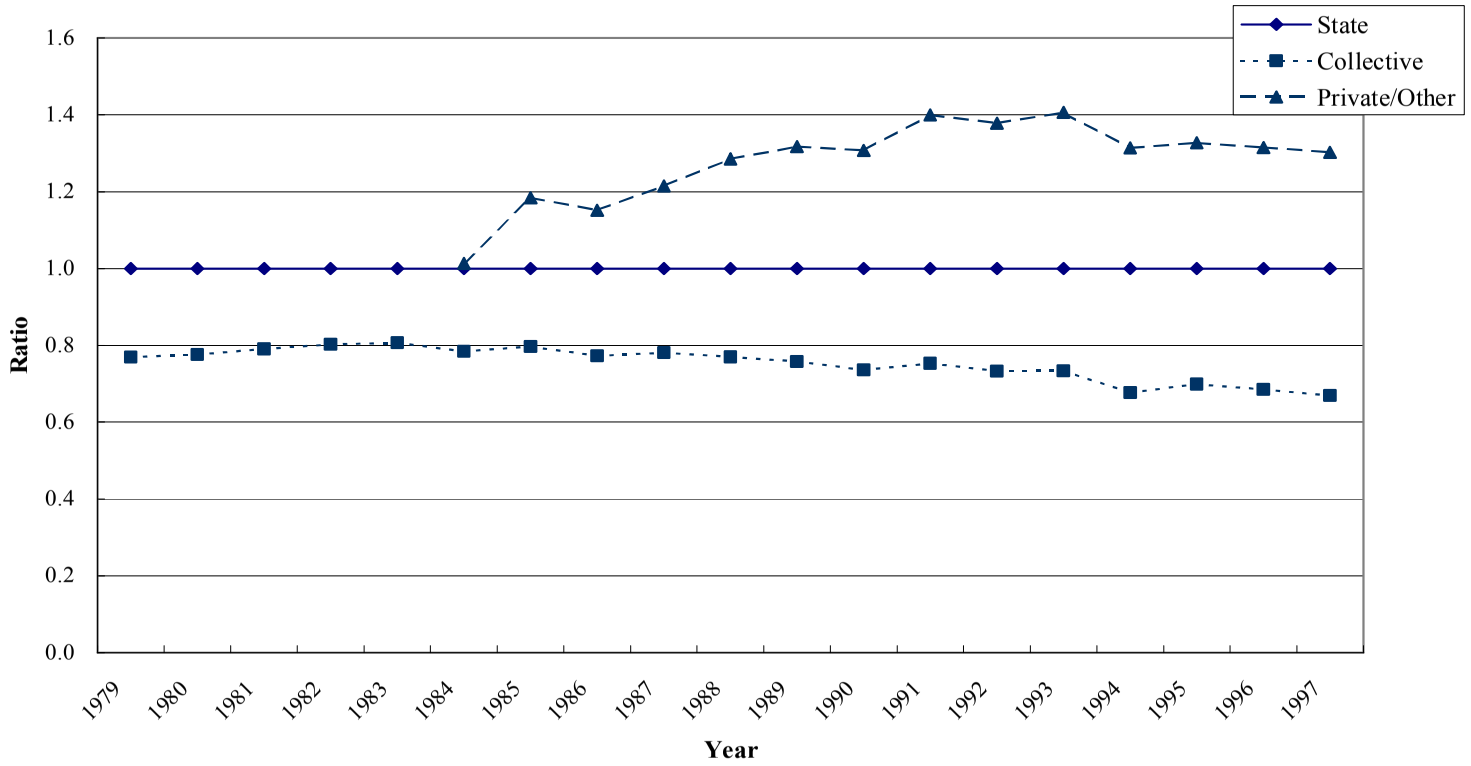
Sources: State Statistical Bureau (1986, 1991, 1995, 1998), *China Labor Statistical Yearbook*.

Table 2: Average Annual Wage (*yuan*) of Urban Employees by Employment Sector: 1979-1997

Year	State	Collective	Private/Other
1979	705	542	------
1980	803	623	------
1981	812	642	------
1982	836	671	------
1983	865	698	------
1984	1,034	811	1,048
1985	1,213	967	1,436
1986	1,414	1,092	1,629
1987	1,546	1,207	1,879
1988	409	1,426	2,382
1989	2,055	1,557	2,707
1990	2,284	1,681	2,987
1991	2,477	1,866	3,468
1992	2,878	2,109	3,966
1993	3,532	2,592	4,966
1994	4,797	3,245	6,302
1995	5,625	3,931	7,463
1996	6,280	4,302	8,261
1997	6,747	4,512	8,789

Notes: Data not available for private/other sector before 1984.
Self-employed and employees of domestic private enterprises are not included.
Source: State Statistical Bureau (1998), China Labor Statistical Yearbook.

Figure 2: Disparity of Average Annual Wage among Urban Employees by Employment Sector: 1979-1997



Notes: Data not available for private/other sector before 1984.
Self-employed and employees of domestic private enterprises are not included.
Source: State Statistical Bureau (1998), *China Labor Statistical Yearbook* .

Figure 3: The Hierarchy of Employment Sectors in Pre-Reform and Reform Era

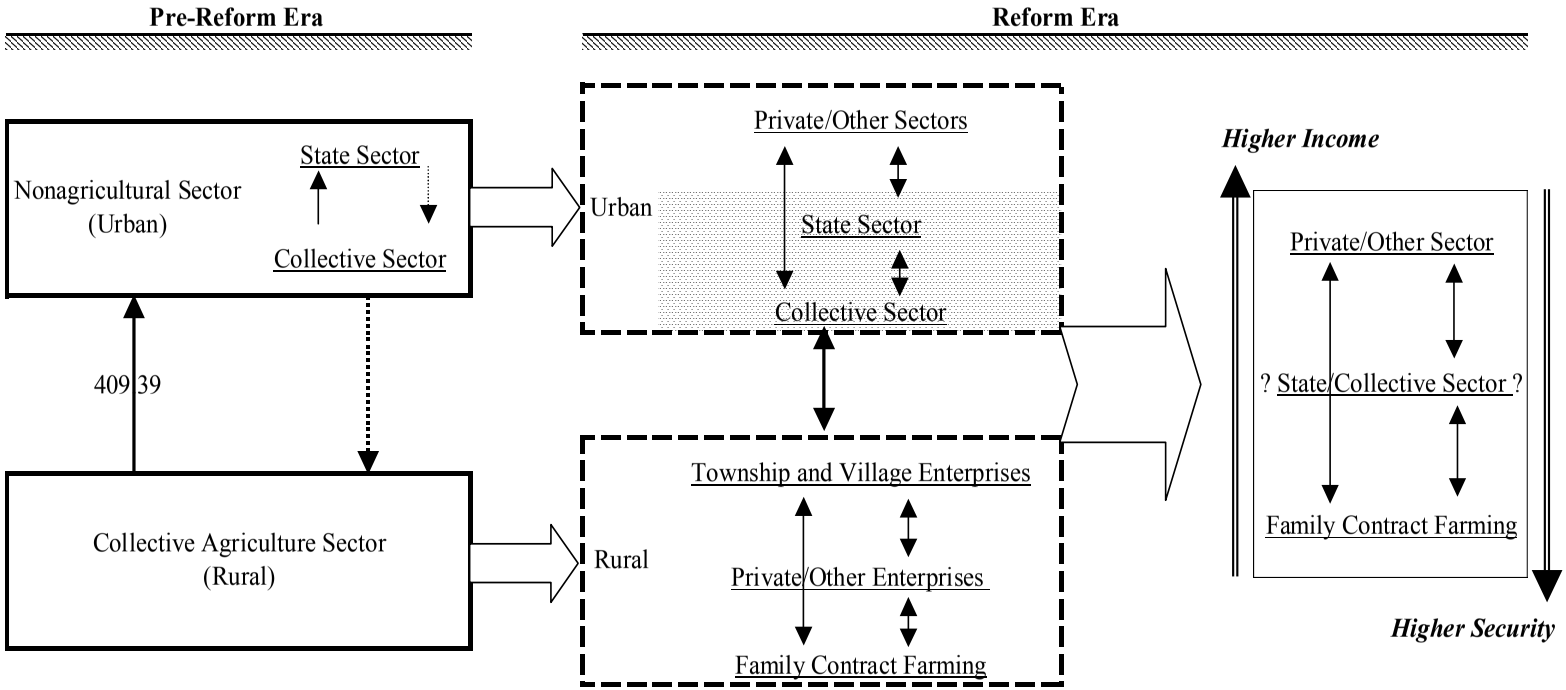


Table 3: Reasons for Losing Observations across Years in CHNS: 1989 to 1997

All:		
N=15,917 in 1989		
9,107 (57.2%) of them were still available in 1997		
Distribution of lost cases		
Province being replaced	1,718	25.2%
Community being replaced	817	12.0%
Household being replaced	1,525	22.4%
Individual not in the household	2,750	40.4%
Total	6,810	100.0%
Individuals in employment in 1989 (age 25-44):		
N=4,411 in 1989		
2,833 (64.2%) of them were still available in 1997		
Distribution of lost cases		
Province being replaced	586	37.1%
Community being replaced	253	16.0%
Household being replaced	416	26.4%
Individual not in the household	323	20.5%
Total	1,578	100.0%

Table 4: Characteristics of Stayers and Leavers of CHNS: 1989 to 1997

	Stayers (%)	Leavers (%)			
		All	Community Replaced	Household Replaced	Individuals not found
Age					
25-29	23.4	35.4	30.9	32.7	50.5
30-39	54.5	48.2	52.6	47.6	37.5
40-44	22.2	16.5	16.6	19.7	12.1
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Education					
No education	13.5	3.7	2.6	3.9	6.5
Primary school	33.5	22.1	22.8	21.6	20.7
Middle school	32.1	41.8	45.1	39.9	35.9
High school	16.5	21.6	16.7	26.7	27.6
College or more	4.5	10.8	12.9	7.9	9.3
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Gender					
Male	51.4	53.8	53.6	50.5	58.5
Female	48.6	46.2	46.4	49.5	41.5
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Marital Status					
Never married	2.7	8.9	3.9	6.0	25.4
Currently married	96.8	89.6	94.8	92.3	72.8
Divored/Widowed/Separated	0.5	1.5	1.3	1.7	1.9
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Employment Sector					
State and collective	36.2	62.9	64.7	66.1	54.2
Private and other	5.4	7.1	4.7	7.0	13.6
Family farming	58.4	30.0	30.6	26.9	32.2
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Residence					
City	12.1	27.9	25.0	32.2	29.7
Suburb	16.3	17.5	19.6	19.2	9.9
Town	12.4	19.7	21.0	16.1	21.1
Village	59.2	34.9	34.5	32.5	39.3
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

(over)

(Table 4 cont'd)

Family's Background in Each Employment Sector					
No other member in state/collective	62.1	35.5	36.4	30.8	39.3
>=1 other member in state/collective	38.0	64.5	63.7	69.2	60.7
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
No other member in private/other	83.9	84.7	91.4	83.4	69.0
>=1 other member in private/other	16.1	15.3	8.6	16.6	31.0
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
No other member in farmily farming	41.1	69.5	72.0	74.3	56.7
>=1 other member in family farming	58.9	30.5	28.0	25.7	43.3
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Number of observation	2,833	1,578	839	416	323

Table 5: Multinomial Logit Models of Job Placement across Employment Sectors: CHNS, 1989 and 1997

	Not Working vs. Family Farming	In School vs. Family Farming	State/Collective vs. Family Farming	Private/Other vs. Family Farming	Private/Other vs. State/Collective
Year *(year 1989 is omitted)*					
Year 1997	1.216**	0.734**	0.366	1.704**	1.337**
	(0.245)	(0.264)	(0.197)	(0.228)	(0.217)
Education *(primary school or less is omitted)*					
Middle school	0.653**	2.022**	0.821**	0.446**	-0.375*
	(0.177)	(0.347)	(0.151)	(0.155)	(0.174)
High school or above	1.126**	5.283**	1.767**	0.994**	-0.773**
	(0.252)	(0.369)	(0.206)	(0.225)	(0.216)
Gender *(male is omitted)*					
Female	0.146	0.003	-0.133	-0.057	0.075
	(0.137)	(0.144)	(0.117)	(0.131)	(0.132)
Having Other Family Member in State/Collective Sector (*no* is omitted)					
Yes	0.427*	0.588**	1.526**	0.386*	-1.140**
	(0.189)	(0.184)	(0.153)	(0.159)	(0.170)
Having Other Family Member in Private/Other Sector (*no* is omitted)					
Yes	1.032**	1.002**	0.663**	2.114**	1.452**
	(0.178)	(0.177)	(0.142)	(0.160)	(0.149)
Having Other Family Member in Farming (*no* is omitted)					
Yes	-3.878**	-2.598**	-3.181**	-2.674**	0.507**
	(0.288)	(0.272)	(0.229)	(0.264)	(0.179)
Age (*age 20 to 24 is omitted*)					
Under 20	0.343*	2.165**	-0.564**	0.003	0.566**
	(0.153)	(0.155)	(0.128)	(0.136)	(0.146)
Marital Status *(unmarried is omitted)*					
Married	-0.758**	-2.914**	-0.749**	-0.983**	-0.234
	(0.227)	(0.610)	(0.179)	(0.215)	(0.231)
Having Chiild (Age<7) in Family *(no is omitted)*					
Yes	0.368	-0.250	-0.347*	-0.099	0.248
	(0.195)	(0.259)	(0.163)	(0.179)	(0.192)
Having Elderly (Age>=60) in Family *(no is omitted)*					
Yes	0.018	0.140	0.106	-0.179	-0.286
	(0.181)	(0.176)	(0.139)	(0.165)	(0.159)
Number of Other Working Age (20-49) Adults in Family *(two or more is omitted)*					
Self only	-0.172	-0.269	-0.447*	-0.273	0.173
	(0.271)	(0.291)	(0.212)	(0.259)	(0.246)
One	-0.079	-0.312	-0.263	-0.171	0.092
	(0.223)	(0.248)	(0.165)	(0.220)	(0.216)

(over)

(Table 5 cont'd)

Residence *(city is omitted)*					
Suburb	-1.997**	-2.251**	-2.079**	-2.131**	-0.052
	(0.655)	(0.662)	(0.634)	(0.661)	(0.264)
Town	-1.663*	-1.858**	-1.742**	-1.994**	-0.253
	(0.648)	(0.657)	(0.629)	(0.658)	(0.254)
Village	-2.816**	-2.207**	-2.692**	-2.552**	0.140
	(0.648)	(0.654)	(0.627)	(0.652)	(0.253)
Province *(central provinces are omitted)*					
Northeast	-0.516	-0.028	-0.169	-0.532	-0.363
	(0.292)	(0.277)	(0.210)	(0.280)	(0.283)
Coast	0.499*	0.717**	1.170**	0.970**	-0.200
	(0.207)	(0.199)	(0.159)	(0.195)	(0.175)
West	-0.154	0.163	-0.467**	0.440**	0.907**
	(0.176)	(0.178)	(0.141)	(0.152)	(0.161)
Constant	3.554**	-0.713	3.524**	3.144**	-0.380
	(0.740)	(0.803)	(0.679)	(0.714)	(0.414)
Log Likelihood	-3746.821				
Observations	4,156				

Notes: Robust standard errors in parentheses.
* significant at 5%; ** significant at 1%

Table 6: The Interactive Effect of Year and Education: Multinomial Logit Model

	Not Working vs. Family Farming	**In School vs. Family Farming**	**State/Collective vs. Family Farming**	**Private/Other vs. Family Farming**	**Private/Other vs. State/Collective**
Year *(year 1989 is omitted)*					
Year 1997	1.033**	-0.568	-0.107	1.871**	1.978**
	(0.374)	(1.079)	(0.387)	(0.322)	(0.413)
Education *(primary school or less is omitted)*					
Middle School	0.592**	1.893**	0.751**	0.580*	-0.171
	(0.226)	(0.376)	(0.175)	(0.236)	(0.236)
High schoor or above	0.833*	4.771**	1.401**	1.062**	-0.340
	(0.332)	(0.415)	(0.256)	(0.349)	(0.316)
Interactive Effect					
Year 1997*Middle School	0.174	1.088	0.428	-0.228	-0.655
	(0.368)	(1.089)	(0.387)	(0.311)	(0.415)
Year 1997*High School or above	0.646	1.863	1.035*	0.040	-0.995*
	(0.485)	(1.108)	(0.460)	(0.448)	(0.472)
Other Variables *(results not shown)*					
Constant	2.397**	-1.238	3.241**	1.344*	-1.897**
	(0.692)	(0.752)	(0.640)	(0.683)	(0.367)
Log Likelihood	-3740.657				
Observations	4,156				

Notes: The model include all the independent variables in Table 5.2.
Robust standard errors in parentheses
* significant at 5%; ** significant at 1%

Table 7: Predicted Probability of Employment Status by Education and Year

	1989			1997		
	Predicted Probability	**95% Confidence Interval**		**Predicted Probability**	**95% Confidence Interval**	
Primary School or Less						
Not Working, Not in School	0.05	0.032	0.068	0.06	0.030	0.082
In School	0.01	0.001	0.010	0.00	-0.001	0.004
State/Collective Sector	0.12	0.094	0.155	0.04	0.016	0.064
Private/Other Sector	0.05	0.032	0.068	0.18	0.133	0.229
Farming	0.77	0.726	0.813	0.72	0.661	0.783
Number of observations	*694*			*290*		
Middle School						
Not Working, Not in School	0.12	0.096	0.148	0.16	0.128	0.199
In School	0.03	0.019	0.047	0.04	0.025	0.050
State/Collective Sector	0.43	0.388	0.474	0.19	0.160	0.226
Private/Other Sector	0.09	0.070	0.114	0.26	0.226	0.301
Farming	0.32	0.275	0.370	0.34	0.299	0.386
Number of observations	*1,203*			*876*		
High School or Above						
Not Working, Not in School	0.08	0.050	0.110	0.12	0.092	0.158
In School	0.32	0.253	0.383	0.46	0.404	0.515
State/Collective Sector	0.52	0.455	0.577	0.28	0.235	0.319
Private/Other Sector	0.06	0.031	0.079	0.12	0.092	0.157
Farming	0.03	0.016	0.046	0.01	0.007	0.021
Number of observations	*491*			*602*		

Table 8: Logit Models of Job Change across Employment Sectors: CHNS, 1989 to 1997

	Model 1 Changed	Model 2 Moved to state/collective	Model 3 Moved to private/other	Model 4 Moved to family farm
Employment Sector in 1989 *(state/collective sector is omitted except for model 2)*				
Farming	-0.776**	-0.598	0.751**	------
	(0.171)	(0.345)	(0.249)	------
Private/Other	0.144	*omitted*	------	-0.120
	(0.238)		------	(0.337)
Education in 1989 *(middle school is omitted)*				
No schooling	-0.321	-0.870*	-0.799**	1.577**
	(0.185)	(0.369)	(0.294)	(0.418)
Primary	-0.186	-0.476*	-0.280	0.178
	(0.128)	(0.239)	(0.176)	(0.265)
High school or above	-0.126	0.079	-0.026	-0.070
	(0.140)	(0.315)	(0.173)	(0.262)
Gender *(male is omitted)*				
Female	-0.386**	-0.706**	-0.420**	0.314
	(0.112)	(0.247)	(0.149)	(0.221)
Having Other Family Member in State/Collective Sector in 1989 *(no is omitted)*				
Yes	0.556**	0.923**	-0.126	0.481
	(0.182)	(0.324)	(0.267)	(0.321)
Having Other Family Member in Private/Other Sector in 1989 *(no is omitted)*				
Yes	0.140	0.036	0.387	-0.100
	(0.159)	(0.351)	(0.201)	(0.334)
Having Other Family Member in Farming in 1989 *(no is omitted)*				
Yes	-0.135	-0.445	-0.215	0.506
	(0.194)	(0.319)	(0.276)	(0.329)
Age in 1989 *(age 30 to 39 is omitted)*				
Age 20 to 29	0.133	-0.508	0.463**	-0.230
	(0.129)	(0.272)	(0.166)	(0.265)
Age 40 to 49	-0.316*	-0.158	-0.493*	-0.100
	(0.148)	(0.279)	(0.199)	(0.335)
Marital Status in 1989 *(unmarried is omitted)*				
Married	-0.197	0.516	-0.172	-0.440
	(0.316)	(0.528)	(0.440)	(0.550)

(over)

(Table 8 cont'd)

Having Child (Age<7) in Family in 1989 *(no is omitted)*				
Yes	0.067	-0.131	-0.078	0.040
	(0.117)	(0.215)	(0.157)	(0.259)
Having Elderly (Age>=60) in Family in 1989 *(no is omitted)*				
Yes	-0.312*	-0.378	-0.355*	-0.062
	(0.138)	(0.294)	(0.180)	(0.281)
Number of Other Working Age (20-49) Adults in 1989 *(two or more is omitted)*				
Self only	0.539	1.786**	0.875	-2.402
	(0.390)	(0.643)	(0.486)	(1.528)
One	0.131	0.374	0.315	-0.199
	(0.184)	(0.423)	(0.247)	(0.413)
Annual Family Income (yuan) in 1989 *(3,000 to 4,999 is omitted)*				
< 1,000	0.305	0.558	-0.392	2.178**
	(0.202)	(0.338)	(0.307)	(0.589)
1,000 to 2,999	0.170	-0.217	-0.243	1.132**
	(0.130)	(0.258)	(0.183)	(0.261)
5,000 to 6,999	-0.116	-0.290	0.320	-0.698*
	(0.177)	(0.357)	(0.206)	(0.346)
>= 7,000	0.583**	0.374	0.777**	0.127
	(0.163)	(0.306)	(0.199)	(0.335)
Residence in 1989 *(city is omitted)*				
Suburb	2.036**	1.218	0.207	3.826**
	(0.258)	(0.858)	(0.305)	(1.038)
Town	1.854**	-1.148	1.394**	3.264**
	(0.253)	(1.098)	(0.266)	(1.052)
Village	2.203**	0.475	-0.228	5.549**
	(0.248)	(0.855)	(0.313)	(1.027)
Province *(central provinces are omitted)*				
Coast	-0.156	0.661**	0.480*	-1.410**
	(0.130)	(0.247)	(0.192)	(0.230)
West	-0.236	-1.048**	0.731**	-0.980**
	(0.126)	(0.281)	(0.161)	(0.358)
Constant	-2.541**	-2.175	-2.625**	-5.333**
	(0.474)	(1.195)	(0.623)	(1.235)
Log Likelihood	-1272.312	-379.831	-789.350	-316.012
Observations	2,510	1,622	2,384	1,014

Notes: Robust standard errors in parentheses.
* significant at 5%; ** significant at 1%

References:

Bian, Yanjie. 1994. "Guanxi and the Allocation of Urban Jobs in China." *The China Quarterly* 140(Dec.):971-99.

Bian, Yanjie. 2002. "Chinese Social Stratification and Social Mobility." *Annual Review of Sociology* 28(1):91-116.

Cao, Yang and Victor Nee. 2002. "Remaking Inequality: Market Expansion and Income Stratification in Reforming State Socialism." Unpublished.

Cook, Sarah. 2000. "Employment, Enterprise and Inequality in Rural China." *The Chinese Economy Under Transition*, editors Sarah Cook, Shujie Yao, and Juzhong Zhuang. New York: St. Martin's Press, Inc.

Garnaut, Ross and Ligang Song, editors. 2004. *China's Third Economic Transition: The Rise of the Private Economy*. New York: RoutledgeCurzon.

Khan, Azizur R. and Carl Riskin. 2001. *Inequality and Poverty in China in the Age of Globalization*. New York: Oxford University Press.

Knight, John and Lina Song. 1999. *The Rural-Urban Divide: Economic Disparities and Interactions in China*. New York: Oxford University Press.

Knight, John and Linda Yueh. 2004. "Job Mobility of Residents and Migrants in Urban China." *Journal of Comparative Economics* 32(4):637-60.

Lardy, Nicholas R. 1998. *China's Unfinished Economic Revolution*. Washington, D.C.: The Brookings Institution.

Lin, Nan and Yanjie Bian. 1991. "Getting Ahead in Urban China." *American Journal of Sociology* 97(3):657-88.

Nee, Victor. 1989. "A Theory of Market Transition: From Redistribution to Markets in State Socialism." *American Sociological Review* 54(October):663-81.

———. 1991. "Social Inequalities in Reforming State Socialism: Between Redistribution and Markets in China." *American Sociological Review* 56(June):267-82.

———. 1996. "The Emergence of a Market Society: Changing Mechanisms of Stratification in China." *American Journal of Sociology* 101(4):908-49.

Parish, William L. and Martin K. Whyte. 1978. *Village and Family in Contemporary China*. Chicago, IL: University of Chicago Press.

Peng, Yusheng. 1992. "Wage Determination in Rural and Urban China: A Comparison of Public and Private Industrial Sectors." *American Sociological Review* 57(April):198-213.

Riskin, Carl. 1987. *China's Political Economy: The Quest for Development Since 1949*. New York: Oxford University Press.

Schultz, Theodore W. 1971. *Investement in Human Capital: The Role of Education and of Research*. New York: The Free Press.

Selden, Mark. 1993. *The Political Economy of Chinese Development*. Armonk, NY: M.E.Sharpe.

Walder, Andrew G., editor. 1995. *The Waning of the Communist State: Economic Origins of Political Decline in China and Hungary* . Berkeley: University of California Press.

Walder, Andrew G. 2002. "Markets and Income Inequality in Rural China: Political Advantage in an Expanding Economy." *American Sociological Review* 67(April):231-53.

Walder, Andrew G., Bobai Li, and Doanld J. Treiman. 2000. "Politics and Life Chances in a State Socialist Regime: Dual Career Paths into the Urban Chinese Elite, 1949 to 1996." *American Sociological Review* 65(2):191-209.

Whyte, Martin K. and William L. Parish. 1984. *Urban Life in Contemporary China*. Chicago, IL: University of Chicago Press.

Wu, Xiaogang. 2002. "Work Units and Income Inequality: The Effect of Market Transition in Urban China." *Social Forces* 80(3):1069-99.

Wu, Xiaogang and Yu Xie. 2003. "Does the Market Pay Off? Earnings Returns to Education in Urban China." *American Sociological Review* 68(June):425-42.

Xie, Yu and Emily Hannum. 1996. "Regional Variation in Earnings Inequality in Reform-Era Urban China." *American Journal of Sociology* 101(4):950-992.

Yang, Dennis T. and Hao Zhou. 1999. "Rural-Urban Disparity and Sectoral Labour Allocation in China." Pp. 105-33 in *The Workers' State Meets the Market: Labour in China's Transition*, editors Sarah Cook and Margaret Maurer-Fazio. London: Frank Cass.

Zang, Xiaowei. 2002. "Labor Market Segmentation and Income Inequality in Urban China." *Sociological Quarterly* 43(1):27-44.

Zhou, Xueguang. 2000. "Economic Transformation and Income Inequality in Urban China: Evidence From Panel Data." *American Journal of Sociology* 105(4):1135-74.

Zhou, Xueguang, Nancy B. Tuma, and Phyllis Moen. 1996. "Stratification Dynamics Under State Socialism: The Case of Urban China, 1949-1993." *Social Forces* 74(3):759-96.

Zhou, Xueguang, Nancy B. Tuma, and Phyllis Moen. 1997. "Institutional Change and Job-Shift Patterns in Urban China, 1949 to 1994." American Sociological Review 62(3):339-65.