ABSTRACT

Title of Document: JOB PLACEMENT AND JOB SHIFT ACROSS EMPLOYMENT SECTORS IN CHINA: THE EFFECTS OF EDUCATION, FAMILY BACKGROUND, AND GENDER

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This dissertation investigates the impact of the market-oriented economic reform in China on one aspect of the labor market outcomes—individuals' access to different employment sectors, that is, the state and collective sector, the private sector, and the sector of family contract farming. Using the first wave (1989) and the fourth wave (1997) of the CHNS data, this study examines the effects of education, family background, and gender on the job placement among the employment sectors for young workers (age 17 to 24) and the job shifts 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 work in the state and collective sector. The social capital effect of family background overwhelms the

practice of risk diversification and young workers are more likely to work in the employment sector in which they have some family connections. While young women have some advantage in entering the private sector than young men, older married women are disadvantaged in transferring to the private sector than older married men and women farmers are less likely to leave the family farm than male farmers.

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 to different employment sectors. In addition to achieved characteristics such as human capital, ascribed characteristics such as family background and gender are important factors in understanding the procedure of social stratification in the reform-era.

JOB PLACEMENT AND JOB SHIFT ACROSS EMPLOYMENT SECTORS IN CHINA: THE EFFECTS OF EDUCATION, FAMILY BACKGROUND, AND GENDER

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Dedication

To my parents

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Chapter 1: Introduction

The market-oriented economic reform since 1979 has conspicuously transformed the institutional structure of China's economy. Prior to the reform, 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 (Parish and Whyte 1978; Riskin 1987; Selden 1993; Whyte and Parish 1984). The reform has diversified the economic institutions of China's economy by introducing the market economy.

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 segments that operated under different institutional arrangements in China's economy.

The transformations of the economic institutions during the economic reform era have three implications on the process of social stratification and mobility in China. First, the transformations have reshaped the structure of the employment sectors, which was an important dimension of social stratification in the pre-reform era. The establishment of the family farming system and the emergence of the private sector provide new opportunities outside the old system. Moreover, the different institutional arrangements have affected the monetary and nonmonetary rewards to individuals working in each sector. Family farming still suffers from the "urban bias" of the development policies and therefore is the least rewarding sector in terms of

income. The state/collective sector is to a large extent subject to the wage rates set by the government. Relatively, the private sector offers more competitive salaries. However, the workers of the state/collective sector enjoy many latent benefits such as subsidized housing, health care, and pension plan. The lifetime employment was guaranteed in the state/collective sector until mid 1990s. For farmers' households, they may keep the land allocated to them as long as they continue working on it. Therefore, due to different institutional arrangements, each sector provides to its workers a different package of rewards that puts different weights on income, latent benefits, and security. The variations of the rewarding systems among the state/collective sector, the private sector, and the sector of family farming suggest that the employment in different sectors means different structure of opportunities. The access to different sectors is therefore important for understanding social stratification in the reform era.

Secondly, the introduction of the market economy has changed the mechanisms of the social stratification in the reform era. The market transition theory argues that the market-oriented economic reform will shift the control over resources progressively from political disposition to market institutions. Consequently, human capital, which is valued in the market economy, will become more important in the process of social stratification in China (Nee 1989; Nee 1996). In addition, the economic reform has renewed the role of family in economic activities (Entwisle et al. 2000). On the one hand, the family may serve as the pool of social capital to facilitate the economic advancement of each family member. On the other hand, the family may coordinate the labor forces of its members in order to maximize the utility

of the family as a whole. Moreover, the demand for female labor has been affected by the economic reform. While the expansion of market economy may have produced more work opportunities for women, the discrimination against women in the labor markets may have also risen due to the declining role of the government in promoting gender equality in the workplaces (Bian 2002; Whyte 2000). It seems that the major mechanisms of social stratification—human capital, family background, and gender—have experienced some changes during the economic reform era. Therefore, it is necessary to examine the influences of those factors on configuring the social stratification of contemporary China.

Thirdly, the economic reform has eroded the rigorous labor system and led to the rise of the labor market (Meng 2000; Tomba 2002), which increases the opportunities of social mobility via job mobility. Before the economic reform, both the urban and rural labor forces were under close administration of central and local governments through the rural collectives and urban work organizations. Labor markets did not exist and job mobility across employment sectors was rare. Since the economic reform, the resurrection of the private sector in the economy has been increasingly providing nonagricultural job opportunities that are beyond government control. The reestablishment of farmers' households as the unit of agricultural production essentially liberates the rural labor forces from the control of the collective. The reforms of the state-owned and collective enterprises have been gradually relieving the workers' dependency on their work organizations. Labor markets have started to emerge in China's economy and job mobility is more common during the reform era.

In the context of China's market-oriented economic reform, the aim of this dissertation is to understand how the three mechanisms of social stratification—education, family background, and gender—have influenced the access to the private sector, and the sector of family farming during the economic reform era. Specifically, I address the following major questions:

1. 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?
2. Does family background affect individuals' chances to access different employment sectors? If so, is it a social capital effect or an effect of family coordination? Has the effect of the family background declined when the market economy expands?
3. Is there any gender difference on the access to different employment sectors? Has the gender effect changed with the evolution of the economic reform?

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).

This dissertation contributes to the debate on how the market transition has been changing the process of social stratification in China in the following aspects. Theoretically, the debate is concentrated on the rising influence of human capital and the declining power of political capital in determining the socioeconomic status of individuals (Cao and Nee 2002; Nee 1989; Nee 1991; Nee 1996; Walder 2002; Wu and Xie 2003; Xie and Hannum 1996; Zhou 2000a). Other mechanisms of social stratification are largely ignored in the debate. This research views family background and gender as equally important as human capital in the social stratification in contemporary China. In addition, the majority of the empirical studies developed around the debate focus on one specific outcome of social stratification, that is, income inequality. 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 positions of the labor markets. This research attempts to fill the gap by focusing on job placement and job shift across employment sectors as the outcome variables.

The remainder of the dissertation is organized as follows. Chapter 2 introduces the contextual setting of the research. I first review the establishment of the hierarchy of employment sectors through a series of economic and social institutions under the state-socialist economy. Then I introduce the transformations of the employment sectors via institutional innovation and modification during the reform era. Finally I discuss how the economic reforms may have affected the

structure of the employment sectors in contemporary China and the implications on social stratification in the reform era.

Chapter 3 discusses the theoretical background of the research and develops a series of the research hypotheses. I begin with the theory of labor market segmentation and the market transition debate. Then I review the effects of education, family background, and gender on job placement and job mobility, which is followed by the research hypotheses.

Chapter 4 describes the data, analytical samples, dependent, independent and control variables, and statistical methods used in the empirical analysis of the dissertation.

Chapter 5 presents the results of the bivariate and multivariate analysis on the job placement across employment sectors among the youths aged 17 to 24. At first, I discuss the change of young workers' employment sectors over time. Then the effects of education, family background, and gender on the entry of different employment sectors are examined. In addition, the change of those effects over time are investigated. Lastly, the effects of control variables are also discussed briefly.

Chapter 6 talks about the results of the bivariate and multivariate analysis on job shifts across employment sectors among workers aged 25 to 44. The overall mobility rate and the differentiations of cross-sector mobility rate by original employment sectors are first discussed. The directions of the cross-sector job mobility are also examined. Then I discuss the effects of education, family background, and gender on the overall mobility rate and the direction of the job shifts across

employment sector. The effects of control variables are briefly presented at the end of the chapter.

Chapter 7 draws conclusions on the patterns of job placement and job shifts across employment sectors in China. The implications of the findings on the social stratification of China in the future are discussed.

Chapter 2: The Structure of Employment Sectors in China

This chapter will first review the institutionalization of the hierarchy of the employment sectors in China from 1949 to 1978. Next, the transformation of the old employment sectors and the emergence of the new sectors since the launch of the economic reform in 1979 are examined in details. At the end, the possible impacts of the reform on the structure of the employment sectors and therefore the process of social stratification are discussed.

The Hierarchy of Employment Sectors in the Pre-Reform Era

China's 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. The divide between the agricultural and nonagricultural sectors was formalized during the mid and late 1950s, shortly after the inauguration of the socialist regime in 1949. A series of institutions have contributed to the establishment and continuity of such a hierarchy of the employment sectors in pre-reform China. Fundamentally, the inequality between the agricultural and nonagricultural sector was the consequence of the government's development strategy of focusing on the rapid growth of industry, especially heavy industry. As to the segregation of the employment in the agricultural and nonagricultural sectors, the collectivization of agriculture in rural areas and the nationalization of industry and commerce in urban areas have put the labor force of the country under the full control

of the government. In addition, the nationwide household registration (*hukou*) system and the rationing of basic necessities in urban areas successfully limited the geographical mobility of the population, especially from rural to urban areas.

The development strategy of the Chinese government after 1949 was to promote rapid industrialization in urban areas. Guided by this strategy, the government's investment in agriculture and agriculture-related industries was never high. Its share in the total national investment hit the highest point (21.3%) in 1962 immediately after the famine, but it gradually fell to about 10 percent in 1975 (Riskin 1987). Moreover, to control the cost of food and other raw materials for urban industrial growth, the Chinese government deployed the compulsory procurement system in 1953 to buy agricultural products from farmers at a low price (Chan 1994). Resulting from this discrimination, there was a large income gap between agricultural and nonagricultural sectors on the eve of the economic reform (Riskin 1987). Estimates of pre-reform personal incomes in China put the average urban-rural per capita income ratio in 1978 between 2.5 and 3 to 1, excluding the urban subsidies in urban incomes. The ratio rises to about 6 to 1 after including the subsidies in the estimates of income. Additionally, the social security system (e.g. medical insurance, pension, and paid maternity leave) was only available to employees of the nonagricultural sector (United Nations Development Programme 1999). The distinct superiority of the nonagricultural sector inevitably created a desire among farmers to move to the urban nonagricultural sector (Parish and Whyte 1978). However, the mobility across employment sectors was extremely low in pre-reform China because of the full control of the labor force by the government in both rural and urban areas.

Under the collective agricultural production (Knight and Song 1999; Parish and Whyte 1978; Riskin 1987; Selden 1993), land became the property of the collective. Besides, draft animals, large farm implements, orchards, fishponds, and forestry were collectivized with a small amount of compensation paid to the individual owners. Corresponding to the ownership of the means of production, the collective was responsible for following the government's regulations on the production and sale of grain and other farm products and paying the taxes to the state. Within the collective, the work-points system was adapted to calculate the labor-days individual farmers spent on collective farming and other tasks to determine the income for each person after the harvest. Grain was also distributed among the farmers after deducting the amount sold or given to the state and the amount withheld by the collective for future use. The distribution of grain could be linked with the work-points, or simply based on the head counts of each household. Although farmers were sometimes allowed to retain small private plots to grow vegetables and raise a few domestic animals, their major source of income and grain came from the collective farm. Therefore, the collectivization of the agricultural production bound the farmers to the land.

While the collectivization of agriculture took place in the countryside, the urban economy underwent the socialist transformation (Riskin 1987). By 1956, most private owners of business gave up their ownership to the state under the pressure from the government. They were assigned jobs in their own business and allowed to retain a profit of 5 percent of the value of their assets for ten years. Individual craftspeople were organized into large cooperatives that were owned by local

governments. The urban economy was dominated by the state sector and supplemented by the collective sector[1] in the following 20 years after the socialist transformation (Selden, 1993:165, Table 6.2). The labors bureaus were set up to allocate labor and to administer wages in the state and collective sectors (Knight and Song 2005). Job assignments were based on the employment plans of central or local government. Neither workers nor work organizations had a say in choosing their employers or employees.[2] The wage rates of the workers were determined by the grade system (administrative personnel were put into twenty salary grades, technicians into seventeen grades, and manual workers into eight grades), which varied slightly by region, industry, and occupation. In addition, the work organizations of the state and collective sectors were responsible for providing housing, health care, pension, and other welfares to the employees (Whyte and Parish 1984). Consequently the workers of the state and collective sectors were closely tied to their work organizations. Since the state and collective sectors predominated the urban economy and the private sector was almost extinguished under the state socialist economy, the government's administration of the job allocation and wage rates essentially means that the urban labor force in pre-reform China was under the full control of the government.

In addition to the close control of the labor force within the agricultural and nonagricultural sector, the mobility between these two sectors was highly restrained

[1] The distinction between the state and the collective sector is the property rights relationship between the work organizations and the state. Work organizations in the state sector, including government agencies, public organizations, and state-owned enterprises, which are the property of the state. Work organizations in the collective sector are the property of the collective and often affiliated with or sponsored by a local government.

[2] Individuals with resources would use their connections to find themselves better jobs. Even so, all the jobs should be officially assigned through the administrative system.

by the government through the rationing of necessities in urban areas and the household registration system. The household registration system served as the administrative instrument to control the rural-to-urban migration. All households were registered at the locale of their usual residence and classified into either agricultural or nonagricultural households when the system was first set up. Any change of permanent residence required official approval under the regulation of household registration. Since the government was extremely concerned about the population growth in cities, the permanent rural-to-urban migration could only be granted when a rural resident was officially recruited by the state sector through the few channels authorized by the government, including professional or college education, serving time in the military, or land requisition for urban development (Chan 1994; Goldstein and Wang 1996; Wu and Treiman 2004).

If the household registration system put the legal rural-to-urban migration under the control of the government, the urban rationing system helped block the "illegal" migration—the migration not sanctioned by the government. As the industrialization was under way in the early 1950s, the scarcity of grain was soon felt in the cities and the government decided that rationing was necessary to stabilize the urban society (Solinger 1999). And the rationing system was later expanded to other foods and necessities, including meat, egg, milk, oil, cloth, match, kerosene and other goods. Because the ration cards and coupons were only issued to the urban residents, it was unlikely for the rural migrants to survive in the urban areas without the authorization of the government. Working together, the household registration system and the urban rationing system effectively controlled the legal and "illegal" migration

from rural to urban areas in China. As a result, the growth rate of the urban population in China under the state-socialist economy was very low. In 1958, the urban population accounted for 16.2 percent of the total population in China. Amazingly, by 1978, the proportion of urban population had only increased to 17.9 percent (Chan 1994). By then, the level of urbanization of China significantly lagged behind the level of industrialization of the nation (Chan 1992).[3]

To sum it up, the employment sectors were stratified into agricultural and nonagricultural sectors in pre-reform China. The nonagricultural sector benefited from higher wages and many government subsidies and therefore its employees enjoyed better income, more welfare, and higher prestige in the society. The rigorous control of the mobility across sectors further intensified the hierarchy of the employment sectors. There is no doubt that the employment sector was an important dimension of social stratification in pre-reform China.

Reforms of the Employment Sectors

With the launch of the economic reform in 1979, the employment sectors in China have greatly changed. First, the agricultural sector was transformed. The collective agricultural production has been dismantled and replaced by family contract farming. In the meantime, township and village enterprises and private businesses have developed rapidly in rural economy. Secondly, the state and collective sectors of nonagricultural production have been experiencing minor to

[3] However, even with the strict administrative regulations on rural-to-urban migration, some rural residents did find a way to work in the state sector without changing their household registration status. According to Walder (1986), there were 9 million temporary workers from rural areas working in the state owned enterprises in 1980. It should be noted that it was a very small fraction of the rural population, which was about 800 million at that time.

major reforms over time to improve their competence and efficiency. Thirdly, the private sector has been resurrected in the urban economy. In addition to the reforms of the employment sectors, the institutions controlling the population mobility of the nation have been changed. The urban rationing system was terminated, and the household registration system has gone through some revisions.

Rapid Transformation of the Agricultural Sector

The economic reforms in rural China started from the rapid change of agricultural production. In the late 1970s, a few rural areas started to experiment with the idea of contracting grain output to individual households,[4] which was quickly embraced by many farmers with enthusiasm (Knight and Song 1999). In 1980, the central government gave permission to the practice of the "household responsibility system", which is essentially a contract system between the government and farmers' households in agricultural production. Under the system, draft animals, tools and equipment are divided among households. Land is fairly distributed to farmers' households on an equal per capita basis.[5] As an exchange, farmers' households are obligated to the delivery of mandatory quotes of yields on the land and responsible for paying agricultural tax and fees contributing to collective services. After fulfilling those obligations, farmers' households have the rights over the residual outputs from the land. They may be sold at above-quota prices to the government or at usually higher prices to anyone in the free market. The work-points system from the

[4] The idea and the practice were not unknown to Chinese farmers. In 1962, the central government allowed the contracting of output between the production team and farmers' households as an effort to recover the agricultural production after the 3-year famine. But the policy was soon abolished as the Cultural Revolution began in 1966 (Riskin, 1987).
[5] For an example of the allocation of land in a village, see the case study by Li (1999).

collective agriculture era is eliminated. The "household responsibility system" quickly spread. By 1983, 98 percent of the production teams (now administrative villages) had adopted this system (Riskin 1987). Since then, farmers' households have become the unit of production after two decades of collective agricultural production. As a result, farmers' households regain their autonomy of allocating their resources, including labor forces, within the households to pursuit economic efficiency.

In addition to the establishment of the "household responsibility system", the mandatory procurement system has been phased out since the economic reform began. In the early 1980s, the procurement price was raised significantly by the central government to increase price incentive for agricultural production. In 1985, the central government introduced "contract purchasing", by which the government would negotiate purchase prices before each planting season and the subsidized agricultural inputs were tied to the fulfillment of quotas under contract. Farmers could choose not to sign the procurement contracts for most agricultural products, but mandatory quotas continued for three main crops (grain, cotton, and edible oil) and farmers had to sign the contracts (Knight and Song 1999). Later on, farmers were allowed to pay a fee to forgo the contracts if they did not want to plant the crops under government contract.

The "household responsibility system" of agricultural production released surplus labors, which was present in collective agriculture but was camouflaged by the work-points system. Naturally, farmers' households soon went beyond agricultural production and began to pursue off-farm economic activities. In 1984, the

central government acknowledged the importance of rural industries in absorbing rural labor and increasing rural incomes and encouraged the development of township and village enterprises by urging government of all levels to support them (Chen et al. 1994). The number of township and village enterprises has increased from 6 million in 1984 to over 23 million in 1996. Although the size of township and village enterprises is usually small, the number of employees has increased from 52 million in 1984 to 135 million in 1996 (State Statistical Bureau, P.R.C. 1998: 427). In addition, private businesses have prospered in rural areas as well. Some farmers' households specialized in the more profitable outputs of agricultural production, such as cash crops and livestock. Other farmers' households chose to invest in businesses in manufacturing and services. In 1997, there were about 6 million persons working for or investing in the private enterprises and over 35 million self-employed individuals in rural areas (State Statistical Bureau, P.R.C. 1997: 426).

In brief, the agricultural sector has experienced significant transformation since the economic reform. The most fundamental change is the termination of the collective agricultural production and the establishment of the household as the basic unit of production in rural China. In other words, rural laborers do not depend on the collectives any more but instead support themselves. Meanwhile, the township and village enterprises and private businesses in rural areas have grown rapidly during the reform era and have been changing the employment structure in rural areas. However, there are great regional variations on the development of rural industrialization (Watson and Wu 1994). Therefore, the surplus labors in rural areas, which became evident after the economic reform, cannot be fully absorbed by rural development.

Gradual Transition of the State and Collective Sectors

The reform of the state-owned and collective enterprises is gradual. Lardy (1998) spelled out three stages of the reform in the state and collective sectors. The first stage was in the late 1970s and early 1980s when the policy of profit retention was adopted to increase the autonomy of enterprise managers, largely by increasing their authority over the allocation of the profits. The second phase started in the mid-1980s. At that time, the long-term contract between enterprises and their bureaucratic superiors was introduced, under which the deliveries of profits, taxes, and other financial targets by enterprises were clearly specified. Meanwhile, the enterprises were given more autonomy on purchase of materials and equipment, sale of output, and other aspects of operation.[6] The third stage began in 1993. The government was determined to apply the modern corporate governance to the state-owned and collective enterprises and put them in the marketplace to compete on equal terms. Most importantly, the diversification of the ownership of the state-owned and collective enterprises was approved. The ownership reform has been accelerated since the fall of 1997. Because of the reform, many small state-owned and collective enterprises were privatized. Large and medium enterprises were converted into limited liability or shareholding companies, although in almost all cases the state is the largest shareholder.

In tandem with the enterprise reforms, the labor reforms in state-owned and collective enterprises have been conducted since the late 1970s (Meng 2000; Tomba, 2002). The initial stage of labor reform focused on the wage structure. Under the profit retention system, enterprises were allowed to use a certain percentage of their

[6] For more details of the enterprise reform in the early and mid 1980s, see Riskin (1987).

profits for bonuses or "floating wages", which was linked to the performance and productivity of individual workers and their teams. Following the restructuring of the wage system, the labor contract system introduced in 1986 was the second step of labor reform. Under the regulations of the labor contract system, the state-owned and collective enterprises were required to openly recruit workers from society and all the new entrants were to be categorized as contract workers. The implementation of the labor contract system has officially ended the institution of lifetime employment in the state and collective sectors of urban economy. Besides, it gives employers of the state and collective sectors some flexibility in hiring. Many enterprises started to use examinations and interviews in the recruitment process. However, the labor contract system did not have an immediate impact on the existing employees of the state-owned and collective enterprises. Enterprises still had to keep redundant workers.[7] Even for the new entrants, the contract usually became continuous employment. The situation did not change much until the mid 1990s, when the government identified overstaffing as one of the most important reasons for the inefficiency of state-owned and collective enterprises. Since then, many workers have been laid off from the state and collective sectors.[8]

In summary, the reforms of the state and collective sectors in the 1980s did not significantly change the labor system inherited from the pre-reform era. The dependent relationship between workers and their work organizations remained

[7] A case study on the successful downsizing efforts made by a large state-owned enterprise demonstrates it (Freund, 1998).

[8] In most cases, the laid-off workers still kept their official employment relationship with the enterprises they used to work at, and the enterprises were responsible for paying the social security funds for the laid-off workers and providing them a basic livelihood allowance. Therefore, lay-off is different from unemployment (Xie 2004).

intact. To some extent, it became even more intense because the financial performance of the work organizations directly affected the income and welfare of the workers through the retained profits. Although the attempt to break up the workers' dependency on the work organizations through the labor contract system was made in the 1980s, the lag of the reforms in social security, health care, and housing system still closely tied the workers of the state and collective sectors to their work organizations until the ownership reform of state-owned and collective enterprises in the mid 1990s.

Growth of the Private Sector

The private sector was slowly revived in the urban economy with much caution on the government's part (Garnaut and Song 2004). There are three major sources of the growth of the private sector. The first one is the "indigenous" private business growing up gradually during the post-reform era. The second is the "transplanted" private business coming from capitalist economies. The third one is the "transformed" private business because of the ownership reform of state-owned and collective enterprises.

The "indigenous" private sector originated from the government's encouragement of self-employment in the late 1970s and early 1980s, when Chinese cities were facing the problem of youth unemployment after the return of a large number of urban youths sent to the countryside during the Cultural Revolution (1966-1976). That was the beginning of the revival of the private sector in urban economy. However, until 1988 this "indigenous" private sector was confined to self-employment and small enterprises with no more than five employees due to the

government regulations. The changes in legislation and government regulations afterwards acknowledged the legal status of private enterprises hiring more employees (Song 2004; Tang and Parish 2000). In spite of many institutional constraints, the "indigenous" private sector flourished in the 1980s. By 1988, the share of self-employment has risen to about 10 percent in national employment (Garnaurt and Song 2004).

One important component of the economic reform in China is the open-door policy, which welcomes foreign investment after 20 years of the self-reliance in economic development. Foreign companies either set up branches in China or work jointly with previously state-owned or collective enterprises. The direct investment from foreign countries has largely been attracted to labor-intensive, export-orientated industries and geographically concentrated on the eastern provinces. The employment provided by foreign firms has increased significantly over time. In 1991, about 1 percent of urban workers were working in foreign firms. By 1997, the percentage had almost tripled (Chen et al. 1994).

The nationwide privatization of state-owned and collective enterprises started in 1995 after the central government formed the policy of "keeping the large and letting the small go", although local experiments on the ownership reform began a few years earlier. The state decided to keep 500 to 1,000 large state-owned and collective enterprises and allow the smaller ones to be leased out or sold to private owners or transformed into employee-held firms or cooperatives (Yao 2004). Considering the complexities of privatization, usually the procedure starts from the enterprises at the bottom of the administrative rank. It should be kept in mind that one

of the purposes of the ownership reform is to deal with the problem of redundant workers in the state and collective sectors. Therefore, many previous employees of the privatized enterprises were either laid-off or had become unemployed after receiving a certain amount of severance pay.

To sum it up, the growth of the private sector in China's post-reform economy is evident. The multiple origins of the private sector result in the heterogeneity of the sector. It includes self-employed small business owners, employees of foreign or joint venture firms, employees of domestic private firms, and entrepreneurs who are the owners of those private firms. In spite of its different origins, the private sector provides alternative employment opportunities outside the state and collective sectors. As the sector thrives, the profitability of starting one's own business and the higher salaries in private firms make private sector attractive. It is observed that more urban residents are debating between a low-income but stable job in the state and collective sectors and a high income but no-benefit and low-security job in the private sector (Tang and Parish 2000).

Changing Policies toward Rural-to-Urban Population Mobility

To accommodate the economic transformation, the urban rationing system and the household registration system have experienced reforms since the economic reform began. The reforms have partially lifted the institutional barriers on the population mobility from rural to urban areas in China.

Following the reforms in agricultural and nonagricultural productions in the early 1980s, grains and many other necessities became easily available in the free market in urban areas at prices higher than the government subsidized prices. In spite

of higher prices, the necessities in the free market were affordable for most urban residents because of higher incomes with the onset of reforms in urban economy. In addition, grains and other necessities in the free market often possessed better quality than those that came with ration coupons. Consequently, many urban residents have stopped using ration coupons in the 1980s. A large number of those coupons were illicitly exchanged or sold in the black markets. The free market of grains and other necessities and the black markets of ration coupons made it feasible for rural residents to survive in the cities without the official urban residency. The situation has become even better after 1992, when the cities put an end to the ration coupons. Consequently, food and other necessities once available just for permanent urban residents were made completely accessible to everyone (Solinger 1999).

The household registration system is still in effect. However, its function in controlling population mobility has greatly declined through systemic changes (Solinger, 1999). The first sign on the flexibility of the household registration system was that, in 1984, the government allowed the rural residents equipped with funds and self-supplied grains to convert their registration status from agricultural to nonagricultural if they wished to do work and business in small towns. About the same time, major cities relaxed the rules about migrants from rural areas. It was not necessary for a migrant to come in under a group contract between an urban work organization and a rural collective. Additionally, temporary residents were allowed to stay in a city for six months before having to renew their certificates. These two measures are departures from the regulations set up in 1958. In 1988, the central government explicitly encouraged the “exporting” of laborers from the countryside to

cities by recommending it as a development strategy. Soon after that recommendation, the state-owned enterprises were permitted to sign contracts directly with individual temporary workers from rural areas (it had to be group contract before), which undoubtedly encourages more emigration from rural areas.

Although the revisions of some regulations of the household registration system have gradually eased the migration from rural to urban areas in the reform era, it is still very difficult for rural-to-urban migrants to convert their registration status from agricultural to nonagricultural in large towns (e.g. county town) and major cities. Without the permanent residency, migrants (including those with nonagricultural registration status but coming from other cities) are discriminated in many aspects of urban life, including accessibility to job opportunities, public education, health care, and subsidized housing.

Changed Structure of Employment Sectors in the Reform Era

From the changes discussed above, we can see that the economic reform has been reshaping the structure of employment sectors in China since 1979. On the one hand, the pre-reform hierarchy of employment sectors, featured by the superiority of nonagricultural (urban) sector over the agricultural (rural) sector, has been shaken loose in the reform period for at least three reasons. First, new employment opportunities that are not directly controlled by the government have emerged in both rural and urban areas. The township and village enterprises and privately owned businesses in rural areas and the revival of the private sector in urban economy have provided work opportunities outside the traditional employment sectors for both rural and urban workers. Secondly, the pre-reform employment sectors (i.e. collective

agriculture sector, state sector, and urban collective sector) have been more or less transformed so that individual workers are not tied to their work organizations as closely as before. Thirdly, the obliteration of the urban rationing system and the relaxation of the regulations on migration have facilitated geographic mobility of all sorts: including rural-to-rural, urban-to-urban, and rural-to-urban migration. Consequently, the employment structure has been changed since 1979.

The trends of the frequency and percentage distributions of rural employees in agricultural production from 1979 to 1997 illustrate the structural change of rural employment during the reform era.[9] From Table 2.1, we can see that the rural labor force has been growing constantly since 1979. However, the number of individuals working in agricultural production has started to decline since 1992. Moreover, the proportion of rural employees in agricultural production has been falling continuously since 1979. In 1979, about 90 percent of the rural employees were working in agricultural production. The proportion dropped to about 80 percent in 1989 and further went down to 65 percent in 1997. Evidently, there has been an expansion of employment in the nonagricultural sector among the rural labor force during the reform era and the pace of change seems to have picked up since 1989.

In urban areas, the size of the labor force has been growing in the reform era (Table 2.2). The number of workers in the private sector has increased rapidly since 1979. The size of the state sector continued to grow initially, albeit at a slower pace. However, after 1993 the growth of that sector has stopped. The collective sector has

[9] The available statistics do not make the distinction between agricultural production contracted to farmers' households and other forms (collective or cooperative) of agricultural production. Considering that the latter is only a very small proportion in China's contemporary agricultural production, the trend of agricultural production can be seen as a proximate of the trend of family contract farming.

undergone a similar transformation, except that it has begun to shrink in size since 1993. As a result, the size of the state and collective sectors combined has been declining since 1993. Figure 2.2 displays the change of the composition of urban employment sectors during the reform era. It is clear that in the 1980s when the reforms in the state and collective sectors were relatively moderate and the government was still cautious on the development of the private sector, the relative size of the state sector remained about the same (70%) after its initial decline in the early 1980s and both the collective and the private sector have grown a little bit comparing to their relative sizes in 1979. The change has obviously picked up its speed in the 1990s. The relative sizes of the state and the collective sector have been dropping while the private sector is expanding. By 1997, about 62 percent of the urban workers were in the state sector, about 16 percent in the collective sector, and more than 21 percent in the private sector.

On the other hand, however, the economic reform does not erase the disparities between traditional employment sectors—agricultural (rural) versus nonagricultural (urban)—in spite of the reforms within each sector. As shown in Table 2.3, 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 2.3 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.

The continuity of urban-rural disparity in income might be partially attributed to the gradualism of China's economic reform. Many institutions from the pre-reform era have remained in place following the reforms. Among these, the most important is the household registration system because the provision of many social services (e.g. education, health care) and welfares (e.g. subsidized housing, state-funded pension and medical care insurance) in urban areas are still confined to officially registered urban residents (Solinger 1999; Yang and Zhou 1999). Another reason for the urban-rural income inequality is the succession of the "urban bias" in the government's policy in promoting economic development in the reform era. The government continued to invest much more in urban development than in rural development (Yang and Zhou 1999).

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 under the "household responsibility system" 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 all of the three employment sectors of urban economy (Table 2.4). However, there are significant wage gaps among the employment sectors. Figure 2.4 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 2.5. 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.

Chapter 3: Literature Review and Research Hypotheses

From Chapter 2, it is clear that China has experienced profound transformation on the structure of employment sectors in recent years. The theory of labor market segmentation provides the conceptual tool to understand the structure of employment sectors and its role in the social stratification in China. The market transition debate offers the analytical tools to explore the changing mechanisms of social stratification in the reform era. In this chapter, I will first review the theory of labor market segmentation and discuss its relevance in China's context. Then the market transition theory and the critiques of the theory will be reviewed. The limitations of the debate and the empirical studies evolved around the debate will be discussed. Lastly, the research hypotheses on the impacts of education, family background, and gender on the job placement and job shift across employment sectors will be developed based on the previous literature.

The Segmentation of Labor Markets

The concept of "segmented labor markets" was invented as the theoretical instrument that provides a different approach from the classical economics to understand the persistence of inequality of labor market outcomes in market economies. According to the classical economic theory, the labor market is perfectly competitive. Wages respond to changes in supply and demand, and workers can move freely in different parts of the market in response to those changes. The observed inequality of labor market outcomes (e.g. wage) is a transient phenomenon and it will be corrected eventually in competitive labor markets. Government interventions, such

as the minimum wage policy, are viewed as distortions of the market price of labor and highly discouraged by the classical economics. The theory of segmented labor markets, however, points out that labor markets are actually divided into distinct segments—the primary sector and the secondary sector. The primary sector is composed of jobs with relatively high wages, good work conditions, chances of career advancement, and employment stability. On the contrary, the secondary sector tends to offer jobs with low wages, poor work conditions, little chance of promotion, and high turnover among the workers. Therefore, the inequality of labor market outcomes is determined by the segmented structure of labor markets. Workers of the primary sector are always better off than workers of the secondary sector, even if they share the same characteristics or have the same occupation (Kalleberg and Sorensen 1979).

More importantly, workers are not randomly placed to the primary and secondary sectors. The division between the primary and the secondary sector usually overlaps with workers' ascribed characteristics such as race, ethnicity, or gender. In classical and neoclassical economics, the differences of labor market outcomes between race, ethnicity, or gender after controlling productivity-relevant characteristics are attributed to employers' "tastes for discrimination" (Becker 1971). The discrimination is considered to be correctable in the competitive labor markets by classical and neoclassical economic theorists. According to them, when some employers profit from hiring workers of the discriminated groups at a lower price (i.e. wage), other employers will take the same strategy and start hiring workers from those groups. Consequently, the demand for those workers will increase and the wage

of those workers will rise to the point that there is no difference between them and other workers if their productivity is at the same level. Different from the classical and neoclassical economics, the segmented labor market theory suggests that the discrimination operates through institutional forces by assigning individuals of the discriminated groups to the secondary labor market at the beginning of their careers, and it is difficult for them to leave once they are placed in the secondary sector (Kalleberg and Sorensen 1979).

Although the segmented labor market theory is developed in market economies, some researchers suggest that the theory may be used to analyze socialist economies where the distribution of labor force is managed by the administrative system instead of a free market (Bian 1994; Lin and Bian 1991; Stark 1986). In China's context, it is obvious that the pre-reform economy is divided into rigorously segmented employment sectors by explicit institutional arrangements (e.g. Riskin, 1987; Knight and Song, 1999). During the economic reform, some of the pre-reform institutions have been removed or reformed and some not. Nevertheless, the differences among employment sectors prevail in the reform era. Empirical studies have demonstrated that the state sector remained to be the primary sector in urban economy during the first decade of the economic reform (Bian 1994). The differentiations in returns to education and work experience between the state/collective sector and the private sector were recorded in a study in Zhongshan at the end of the second decade of the economic reform (Zang 2002). Evidence from a household survey in a northern county of China revealed that the marginal returns to agricultural labor were a fraction to those of nonagricultural labor (Cook 1999).

To conclude, in China's context, the employment sectors are the components of the segmented labor market, and the access to different employment sectors means different life opportunities for individual workers.

The Market Transition Debate

The market transition theory, first articulated by Victor Nee (1989, 1996), argues that the economic reform has changed the social structure in China through the emergence of the market economy because its institutional arrangement provides different structures of incentives and constraints from those of the state socialist economy. Under the state socialist economy, resources were controlled by the redistributive bureaucracy, and thus individuals who were close to the center of distribution had more power under such an institutional arrangement. On the contrary, the market economy promotes the power of competitive producers through the market exchange, and therefore creates new opportunities outside the redistributive system and entails the principles of resource allocation different from the state socialist economy. Consequently, in the sectors where the shift to market economy occurs, individuals who were excluded from advancement in the state socialist economy gain opportunities of upward mobility. Meanwhile, the relative advantage of those with the redistributive power is declining as the market sector expands.

The market transition theory therefore predicts the shift of the importance of two sets of resources—political capital and human capital—in determining individuals' socioeconomic status in transitional China. Political capital, defined by the political and bureaucratic position, reflects an individual's closeness to the redistributive power and has its significance in the state socialist economy. Human

capital, usually measured by education and work experience, represents the human productivity, and therefore is important in the market economy. According to the market transition theory, as the market economy is growing in the reform era, returns to political capital decline and returns to human capital increase, compared to the pre-reform era. Similarly, in regions where the market economy grows more rapidly, the decline of the importance of political capital and the increase of the importance of human capital in social stratification are more evident.

However, the market transition theory has been widely criticized. The critiques of the market transition theory concentrate on the following aspects of the theory. First, the market transition theory ignores the fact that the market-oriented economic reform in China was initiated by the government and is still under the control of the government. Therefore, it is hard to disentangle state from market and treat them as totally independent institutions. Actually they are embedded within each other. On the one hand, the state's intervention in the market economy is everywhere. On the other hand, the state sector of the economy has been learning from the market economy to improve its own competency (Bian and Logan 1996; Zhou 2000b; Guthrie 1999). Secondly, the rewarding mechanisms of the redistributive economy and the market economy are not as antithetical as the market transition theory suggests (Róna-Tas 1994). The redistributive economy, even before the market-oriented reform, also reward more to workers with better education and more work experience. In addition, since the launch of the economic reform, the Communist Party has been making investment in education for its current and potential members (Li and Walder 2001). The state sector has recruited the majority of the newly

graduates from colleges (Zhou et al. 1996; Zhou 2000a). Thirdly, the market economy per se does not have inherent implications for inequality. Rather, the impact of the market economy on social stratification depends on the characteristics of the markets themselves. (Walder 2002)Therefore, to predict the impact of the shift to market allocation, it is necessary to take into account the institutional circumstances and the economic and political conditions (Walder 1996).

The theoretical debate is accompanied by numerous empirical studies, and the mainstream approach is to compare the economic returns to political capital and human capital among individuals in different economic sectors that separately characterize the state socialist economy and the market economy. That is an appealing approach and has produced many interesting findings (for a review, see Bian 2002). However, those findings of the empirical studies on income inequality are mixed, and none of them can fully support any side of the market transition debate. In addition to examine the methodology used in the researches, some scholars have questioned the focus on income and income inequality to understand the social stratification in China (Oberschall 1996). One major problem of directly linking individuals' income in different economic sectors to political capital and human capital is the ignorance on the act of agency while focusing on the outcomes of structural change (Róna-Tas 1994; Wu and Xie 2003). The assumption of the approach to study income inequality is that individuals' different positions in the structure (market versus redistribution) have given the different weights of human capital and political capital in each compartment of the structure and therefore determined their income. What has been omitted in the assumption is that individuals

can select or be selected into the market or the redistributive sector of the structure during the reform era. To shoot a more dynamic picture, there is a need to look at outcomes beyond income, such as the entries and shifts across the boundary of the components of the structure (Zhou et al. 1997). As I described in Chapter 2, the employment sector is one of the most important dimensions of the socioeconomic structure in contemporary China. Therefore, the examination on the job placement and job shift across employment sectors is necessary to understand the process of social stratification in the reform-era. In addition, since the employment sectors are of structural importance in Chinese economy and society, the procedure that assorts individual workers into different employment sectors also reflects the institutional change in the reform era.

Furthermore, the participants of the market transition debate have mostly concentrated on the relative importance of the political capital and human capital in the procedure of social stratification. However, political capital was not the only mechanism of social stratification in pre-reform China. The class origin of the family, education, and gender were found to be significantly associated with occupational attainments in the state-socialist economy, although these effects were weakened for the cohort of "Cultural Revolution" due to the extreme destratification policies of the decade (Bian 2002; Whyte and Parish 1984). With the end of the "Cultural Revolution", the effects of family, education, and gender have revived. Even under the market economy, the allocation of resources is not entirely governed by the market forces. Therefore, in addition to political capital and human capital, it is necessary to examine the influences of other mechanisms of social stratification, such

as family background and gender to gain a better understanding of the changing procedure of social stratification during the reform-era.

Understanding Job Placement and Job Shift in Transitional China

As an attempt to understand the impacts of the market-oriented economic reform on the process of social stratification in China, this dissertation examines the effects of education, family background, and gender on the entry into different employment sectors—the state/collective sector, the private sector, and the sector of family farming among young workers and the change of these effects as the economic reform proceeds. Moreover, the effects of education, family background, and gender on the job shifts across employment sectors among older workers are also examined. I develop a series of research hypotheses based on the previous theoretical and empirical researches on the influences of education, family background, and gender on labor market outcomes.

Effects of Education

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 suggests that the sectors that are close to the market economy may value education more than the sectors that close to the state-socialist economy. If that is the case, better-educated workers will prefer to work in the sectors close to the market economy. However, close 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.

Therefore, 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 with 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 1a: 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 1b: 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 1c: 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.

Effects of Family Background

The idea that family is a social unit in which its members share the similarity in their life chances can be found in the tradition of social stratification researches. In the literature of social stratification, family is regarded as the primary institution channeling social and economic inheritance and transmitting privilege from one generation to the next. Early studies on status attainment and intra- and intergenerational social mobility have found the effects of family of origin on individuals' socioeconomic status (e.g. Blan and Duncan 1967; Goldthorpe 1980).

While the early literature of social stratification views family of origin as the ascribed *personal* resource that influences status attainment (Lin 1999), the social capital theory emerged in recent decades provides a complementary perspective to further understand the family's role in the process of social stratification. The social capital theory points out the importance of *social* resources (that is, resources accessed through social networks) in affecting the status attainment (Lin 2000). In addition, it is recognized that the social capital is not equally distributed among individuals, and the inequality of social capital is caused by the clustering of social actors (Lin 1999). Since family members share the social networks among themselves, families can affect the social stratification as the pool of social capital.

The economic theory of the family considers the family as a unit of production and consumption and emphasizes the coordination among family members. According to the New Household Economics (Becker 1981), the division of labor among family members is an effort to maximize the joint welfare of the family. An individual's decision regarding the allocation of time and effort to paid work in the labor market and unpaid work in the home is dependent on the activities and characteristics of other family members. Although it is debatable whether specialization or combination of the roles of caretaker and wage earners between husbands and wives is a more viable family strategy in contemporary society (Oppenheimer 1994), it is agreed that the decisions on work are made interdependently among family members.

Both the social stratification researches and the economic theory suggest that family plays a significant role in the process of social stratification. As Erickson and

Goldthorpe (Erickson and Goldthorpe 1992: 233) have summarized, on the one hand, due to the shared resources and constraints, family is "the unit of class 'fate'". On the other hand, the joint or interdependent decision-marking among family members on their labor market activities makes family "a key unit of strategic action pursued within the class structure". In other words, the socioeconomic status of individuals may be affected by family background in two ways. First, family determines the original position of a person in the social stratification system and affects his or her prospect of social mobility through social capital and other shared resources. Secondly, a person's achievement is affected by the family's strategy in maximizing the well-being of the family as a whole.

In China's context, family background has always been a significant factor in affecting individuals' employment sectors. Under the state-socialist economy, particular institutional arrangements implicitly gave family the strong influence in affecting the access to employment sectors for individuals. For instance, the rigid household registration system and the policy of limiting the nonagricultural jobs to urban residents contributed to the severe segmentation of the agricultural and nonagricultural employment sectors in pre-reform China. Since the household registration status is inherited from the family and can only be changed through a few limited channels (Wu and Treiman 2004), the access to nonagricultural employment sector was largely determined by their family background in household registration status. Another institution that gave families a significant role in determining individuals' employment sectors in China is the "substitution" (*dingti*) system, which was in effect from late 1970s to mid 1980s and allowed the state and collective sector

employees to designate one of their children as a successor in their work unit after their retirement (Davis 1990). Although the household registration status becomes less important on the labor markets in recent years and the substitution system and the rationing system were eliminated in 1986, such institutions have undoubtedly reinforced family obligations and solidarity in China. Their impact may outlive the institutions themselves.

More importantly, according to the theory of social capital and its influence on status attainment in general and on labor market outcomes in particular (Lin 2000; Lin 1999; Granovetter 2005), family can directly determine an individual's employment sector because all family members form a social network among themselves. Although Granovetter (1973) found that such kind of "strong ties" is not the most important part of the social network that helps people find a job in the United States, family does serve an important channel for locating jobs in urban China in the late 1980s (Bian 1997) and in the 1990s (Zang 2003). Using the 1991 CHNS data, Michelson and Parish (2000) found that having other white-collar workers in the household increases one's chances of having a state or collective off-farm job in rural areas. In addition, the solidarity and trust of the family and kinship networks are found to have positive effects on the number and size of private rural enterprises (Peng 2004). Hence, it is very likely that the individuals' access to different employment sectors in China is determined by their family's possession of social capital in each employment sector.

Meanwhile, the reform has revived the economic role of Chinese families and created the conditions for the coordination of labor forces among family members. In

rural areas, the establishment of the household responsibility system in agricultural production after the economic reform has explicitly made farmers' households the unit of production (Davis and Harrell 1993; Entwisle et al. 2000; Whyte 1996). In addition, the removal of restrictions on private enterprise has encouraged the development of family business in nonagricultural production (Entwisle et al. 1995; Whyte 1996). Although the majority of urban families are not involved in family business (Whyte 1996), the reduced constraints on job mobility and the expansion of the private sector have created opportunities for urban families to coordinate the employment sectors among family members.

Previous studies suggest that risk aversion may be the strategy taken by Chinese families to coordinate the employment sectors among family members in the reform era. For farmers' households, in spite of the significant income gap between farming and off-farm jobs, they may employ the "safety-first" strategy to ensure that they have adequate food due to the fear of hunger and famine (Scott 1976; Keister and Nee 2000). On the other hand, wage work and entrepreneurship will significantly improve the income of farmers' households (Cook 2000). Consequently, the farmers' households may want to balance the risks and gains of different employment sectors by keeping some family members on the land and sending others to the off-farm jobs. Urban families face a similar situation. While the state/collective sector traditionally provides better job security than the private sector does, the wage rate is higher in the private sector than in the state/collective sector. Therefore, urban families may also feel the need to diversify the employment sectors of family members. In sum, facing differentiated gains and risks of the employment sectors and the uncertainty aroused

by the economic transition in the reform era in China, there may be a strong concern on diverting the risks and taking jobs in different employment sectors for Chinese families (Entwisle et al. 2000).

Has the influence of family background on individuals' employment sectors changed in the course of the economic reform? The market transition theory provides theoretical grounds for the answer. Although the theory does not explicitly discuss the change of the relative significance of family background in the job findings as the reform proceeds, it is implied that a full-fledged labor market will diminish the influence of family connections on individuals' job placement (Guthrie 1998; Guthrie 2002). Moreover, the institutional constraints on job mobility under the state socialist economy will decline as the labor market further develops. A study on the hiring channels in the transitional labor market in Russia suggests that the transition from state socialist to market economy leads to the substitution of strong ties with weak ties as the social network that facilitates job seeking in the labor market (Yakubovich and Kozina 2000). Meanwhile, the necessity to diversify employment sectors among family members may decrease because the segmentations of the state/collective sector, the private sector, and the family farming might diminish as the market economy expands.

To sum it up, the general theories on family in sociology and economics have pointed out the important role of family in social stratification. The studies in China suggest that the family background may influence the individuals' access to the employment sectors through the social capital effect of the family or the family strategy of risk diversification. And the further transition of the economy may affect

the relative importance of the family in accessing different employment sectors. Based on the literature, I develop two competitive research hypotheses (Hypthesis 2a and Hypothesis 2b) on the overall effects of family background on individuals' employment sectors and one hypothesis (Hypothesis 2c) on the change of the effects over time.

Hypothesis 2a: If the family background works as the social capital in determining the individuals' access to employment sector, the relationship between the respondent's employment sector and other family members' employment sector is positive. Specifically, the chance for young workers to enter a certain employment sector will increase when their families already have another member working in that sector. Similarly, the chances for older workers to move to a certain employment sector at Time 2 will increase when they have other family members in that sector at Time 1.

Hypothesis 2b: If the family strategy to diversify risks is working, an individual's employment sector is negatively associated with other family members' employment sector. In specific, the possibility for young workers to work in a certain employment sector will decrease if their families already have other members working in that sector. Likewise, the possibility for older workers to transfer to a certain employment sector at Time 2 will decrease if their families already have other members working in that sector at Time 1.

Hypothesis 2c: No matter it is the social capital effect or the risk diversification strategy that works, the association between young workers'

employment sectors and other members' employment sector in their families will decline over time as the market-oriented reform proceeds.

Effects of Gender

The neo-classical economics applies the supply-demand framework to analyze the gender inequality in labor market outcomes (Anker 1997). On the supply side, it is argued that women's lower levels of human capital (i.e. less education and less work experience) leads to their lower productivity in the labor markets. As a result, women receive lower pay than men. Due to the gender wage gap in the labor markets, the opportunity cost of not working is low for women and high for men. To maximize the utility of the family, the division of labor between men and women—men focusing on work outside home and women concentrating on domestic work—is the rational choice of the family (Becker 1981). Moreover, even if women work outside home, they prefer occupations with relatively high starting pay, relatively low returns to experience, and relatively low penalties for temporary withdrawal from the labor force to accommodate their responsibility for housework and childcare. On the labor demand side, the productivity-related factors also influence employers' preference for male over female workers. Jobs requiring a relatively high level of education and experience are more likely to be offered to men than to women. Furthermore, women are often felt to be higher-cost workers because of their needs of maternity leave, child care, and flexible work schedules in order to care for family responsibilities.

Feminist scholars have challenged the neo-classical model by pointing out that the factors determining the supply and the demand of female labor are embedded in such institutions as families, communities, markets, and states, and none of them is

gender neutral. In the neo-classical model, family is assumed to be an egalitarian collectivity in which altruism is the principle of allocating resources between family members. Feminist theories argue that there are inequalities between men, women, and children in the distribution of materials and decision-making power within the family (Bruce 1986; Folbre 1986; Kabeer 1994). In other words, conflicts of interests exist in both intergenerational relationships and marital partnerships. This argument has important implications for understanding the gender inequality in the supply of labor in the labor markets. Girls can be greatly disadvantaged in human capital development by parents' decision of not investing in their education or only investing in certain types or levels of education which has limited earning potential in the long run (Brinton 1993; Greenhalgh 1985). Moreover, the tension between women's choice of working on paid jobs outside home and staying at home to take care of the child and other household chores is essentially the conflicts between men's and women's interests (Presser 1995). In addition to the gender inequality in the home, the policies of social and economic development have strong effects on the supply of female labor as well. For example, it is observed that the lack of access to infrastructure in rural South India impedes women's ability to participate in market activities (Desai and Jain 1994).

On the demand side, the industrial structure and the organization of work of an economy are found to have strong influence on the work opportunities for women. The rapid development of the service sector is believed to be one of the factors that led to the rise of women's labor force participation in industrial societies, although its relative contribution to supply factors varied in different periods (Goldin 1990; Tilly

and Scott 1978). A comparative study of the labor force participation of married women in Taiwan and South Korea suggests that there is a higher demand for female workers in Taiwan where work is mainly organized in small, labor-intensive firms than in South Korea where work is largely organized in large, capital-intensive firms (Brinton et al. 1995). Moreover, the institutionalized discriminations against women in the labor market constrict the demand for female labors. The removal of such institutions (e.g. the "marriage bar" in hiring women workers) will greatly increased women's work opportunities outside the home (Goldin 1990).

There is no doubt that the gender inequality in the labor market outcomes involves many objective and subjective factors at micro and macro levels. The market-oriented economic reform in China has explicitly affected the demand for female workers through the change of economic structures. On the one hand, the rapid growth of the tertiary industry during the reform era should have created many work opportunities for women. National statistics show that the tertiary industry accounted for 12.6 percent of total employment in China in 1979. The percentage increased to 18.3 percent in 1989 and 26.4 percent in 1997. At the same time, the growth of the secondary industry is much slower. In 1979, 17.6 percent of workers were in the secondary industry and the percentage grew to 23.7 percent in 1997 (State Statistical Bureau, P.R.C. 2002). It is documented that young women hold an average of 70 to 80 percent of the jobs in the factories in export-processing zones (Summerfield 1994). On the other hand, women workers suffer disproportionately from the decline of the state/collective sector since the mid 1990s. A recent study on laid-off workers in six major cities in China found that female workers are more

likely to be laid off from state-owned and collective enterprises even after controlling the workers' and the firms' characteristics (Xie 2004).

Moreover, the discrimination against women in the labor markets might have increased during the reform era because the employers in the state/collective sector are given more autonomy in labor management and the private sector is not under the government regulations at all. There is some evidence indicating that this has occurred. Women are perceived to be less reliable, less efficient, and more expensive workers in the state/collective sector (Honig and Hershatter 1988) and enterprises start to be reluctant to hire women after the economic reform due to the pressure of improving their financial performance (Bauer et al. 1992). In addition, a substantial gender wage gap has been recorded in all employment sectors, including the state sector and urban collective sector (Bian et al. 2000), the rural township and village enterprises (Dong et al. 2004), and the private sector (Liu et al. 2000; Maurer-Fazio and Hughes 2002; Summerfield 1994). However, if the low wage does not hold women back from joining the labor force, the wage discrimination against women might increase the demand for female labor because women provide labor at less cost.

On the supply side, previous researches have argued that the gender inequality in families has strong impact on rural women's participation in off-farm work opportunities. Using the 1989 CHNS data, it is found that, relative to men, rural women are less likely to work in the nonagricultural business run by families and more likely to work exclusively on agricultural production (Entwisle et al. 1995). It is speculated that in farmers' households men are always assigned to "economically important" work and women "fill in" the work left behind by men. Since the

economically important work may change with changes in the larger economic context, the boundary between "men's work" and "women's work" is not fixed (Entwisle and Henderson 2000). In addition, a few studies found that marital status has different influences on men's and women's off-farm employment status. In rural Guangdong, while marriage has little effect on men's wage-employment status, the probability of wage-employment for married women is 67 percent lower than for single women (Hare 1999). The disadvantage of married women in participating nonagricultural work outside home is also found in other rural areas in China (Jacka 1997; Matthews and Nee 2000).

In sum, multiple and sometimes contradicting forces have been working together to affect men's and women's access to different employment sectors in the reform era in China. It seems that the state/collective sector is becoming less accessible to women than to men, especially after the mid 1990s when the massive downsizing of the state/collective sector started. Moreover, since the state/collective sector is still under the government regulation, the cost of providing maternity leave and other welfares to female workers makes women less preferable for the employers of the state/collective sector. As for the access to the private sector, the literature suggests that the expansion of the tertiary sector and the substantial gender wage gap might work in favor of young women over young men in entering into the private sector because young women might be considered to be "suitable" to the jobs and they are less expensive. However, the discrimination against women in the private sector might hurt women later due to the sector's preference of younger women over older women. The observed trend of the "feminization" of agricultural production

indicates that women have a larger probability to work on the family farm than men do. The effect might become weaker for young workers as the economy continues to grow. But among individuals who already worked on the farm, off-farm jobs might be more accessible to men than to women due to the gendered household division of labor in farmers' households. Therefore, I have the following hypotheses on the gender difference in the job placement and job shift across employment sectors.

Hypothesis 3a: Relative to young males, young females are less likely to work in the state/collective sector but more likely to work in the private/other sector and on the family farm.

Hypothesis 3b: Among the young workers, men's advantage on entering into the state/collective sector and women's advantage on entering into the private sector becomes even larger as the market economy expands. Nevertheless, the gender difference in the probability of working on the family farm declines over time due to the growth of off-farm job opportunities for young workers.

Hypothesis 3c: Among older workers, women are less likely to transfer to the state/collective sector or the private sector than men are. On the contrary, women are more likely to leave the state/collective sector or the private sector and move back to family farming, especially after marriage.

Chapter 4: Data and Methods

In this chapter I will first introduce the data used for the research. Then the characteristics of the analytical samples are discussed, which is followed by the description of the definitions and measures of the variables in the analysis. Lastly, the methods utilized to undertake the statistical analysis are presented.

Data

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. In addition, the richness of the information for each household of the survey, especially the demographic composition, household income, and the family background in terms of family members' employment sectors, are highly suitable for my goal of exploring the impact of family on individual's labor market.

The CHNS covered the households selected from eight provinces— Liaoning, Shandong, Jiangsu, Henan, Hubei, Hunan, Guizhou, and Guangxi—in the first three waves (1989, 1991, and 1993) of the survey, but Liaoning was replaced by

Heilongjiang since the fourth wave (1997). These provinces were not selected according to a probability design but were intentionally selected to represent geographic diversity of China and are from northeastern, coastal, central, and southwestern regions of China (Figure 4.1). Furthermore, these provinces are different in terms of their socioeconomic development and their exposure to the market transformation. From Figure 4.2, it is clear that the coastal provinces (Jiangsu and Shandong) and provinces in the Northeast (Liaoning and Heilongjiang) have higher level of economic development, which is measured by GDP per capita. The three provinces in the center of China (Henan, Hubei, and Hunan) show a near-average level of economic development. The GDP per capita of the Western provinces (Guizhou and Guangxi) are substantially lower than the average level of the country.

Within each province, a multistage, random cluster process was used to draw the survey sample. Counties in the provinces were stratified by income and a weighted sampling scheme was used to randomly select four counties in each province. In addition, the provincial capital city and a lower income city were selected. Within the counties, in addition to the county town, three villages were randomly selected. For the cities, two urban and two suburban neighborhoods within the cities were selected randomly. Within each village or neighborhood, 20 households were randomly selected.

During the second and third wave of the survey (1991 and 1993), CHNS strictly sticks to the originally surveyed households from the first wave (1989), and does not add any new observations in the survey except for individuals who join the

newly formed households that grow out of the original households and locate in the original site. However, in the fourth wave of the survey (1997), in addition to the substitution of Liaoning Province with Heilongjiang Province, new survey sites in the other survey provinces are introduced to replace the sites that cannot continue the survey for some reason. In addition, if there are fewer than 20 households in the continuously surveyed sites, new households are added to make up 20 households for each site. As a consequence of the replacement strategy used in 1997, 16.6% of the individuals (2,384 out of 14,399) are from the newly joined survey sites, and 9.6% (1,385 out of 14,399) are from the newly joined households in the re-visited survey sites. In total, 26.2% of the individuals in the 1997 CHNS are fresh to the survey.

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.

Sample

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 factors affecting 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 4.1 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 4.2 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 the table. In general, the leavers were younger: 35.4 percent of them were between ages 25 and 29, and only 23.4

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

percent of the stayers were at that age range. The leavers were better educated: 32.4 percent of them had at least some high school education, and only 21 percent of the stayers had the same level of education. The proportion of male workers is slightly higher among the leavers (53.8%) than among the stayers (51.4%). While 96.8 percent of the stayers were married, only 89.6 percent of the leavers were married. The leavers were mostly working for the state/collective sector in 1989 (62.9%). In contrast, stayers were concentrated on family farming (58.4%). About 59.2 percent of the stayers were rural residents from villages, and only 34.9 percent of the leavers lived in villages. The leavers were more likely to have some family background in the state/collective sector than the stayers: 64.5 percent of the leavers were from families with other family member in the state/collective sector, and only 38.0 percent of the stayers were from the same family background. On the contrary, while only 30.5 percent of the leavers were from farmer's family, the percentage for the stayers almost doubled (58.9%). Although there are some variations on those features among the leavers, but the observed general differences between leavers and stayers still hold for each subgroup of the leavers. In short, 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.

Dependent Variables

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, 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

[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.

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. When a respondent's employment sector of 1997 is different from 1989, the variable is coded as "1"; otherwise, it is "0". 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 percentage distribution of occupation, education and residence by employment sectors for all the workers (including both young and older workers) in 1989 and 1997 (Table 4.3) shows that there are some differences in the composition of each employment sector in terms of workers' characteristics. For instance, the state/collective sector has a larger proportion of professionals, administrators or managers, office staff, skilled workers, and unskilled workers than the private/other sector. However, the private/other sector has a much larger proportion of service workers than the state/collective sector. The discrepancy might reflect the fast development of tertiary industry in the private/other sector. In addition, high school and college education are more common in the state/collective sector than in the other two sectors. Furthermore, the state/collective sector is more "urban" with regard to its

geographic distribution, which should not be a surprise considering that the state and collective sectors were concentrating in the urban areas in the pre-reform era.

Independent Variables

Human capital is measured by educational achievement. CHNS collected information on the respondent's total years of formal education completed in all kinds of regular schools. Four levels of education are extracted from that variable: (1) no schooling, (2) primary school, (3) middle school, and (4) high school and above, including vocational school, technical school and college.[4]

The family's presence or absence in the employment sectors is captured by aggregating the employment sectors of family members, *excluding* the respondent's own employment sector. Specifically, if there is at least one family member other than the respondent were working in an employment sector, the family is considered as being involved in that sector. Given the three categories of employment sectors, three dichotomous variables are created: (1) having *other* family member in the state/collective sector, (2) having *other* family member in the private/other sector, and (3) having *other* family member in family contract farming. Gender is a dichotomous variable. Female is coded as "1", and male as "0".

All the three variables above are applied to both the cross-sectional and the panel analysis. An additional variable is created for the cross-sectional sample of youth, which is the period effect, measured by the variable of survey year. Year 1997

[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 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.

is referred as "1", and year 1989 as "0". Furthermore, the interactive terms between year and education, the composition of other family members' employment sector, and gender are created to analyze the change of the impacts of human capital, family, and gender over time.

Control Variables

In the multivariate analysis, in addition to the independent variables listed above, I control for age, marital status, demographic composition of the family, total family income, residence, and province, which are the factors that could have some influence on the employment sector of Chinese workers according to the literature.

For the cross-sectional sample of youth, two age groups are created: (1) under age 20, and (2) age 20 to 24. For the panel sample of adult workers, three age groups are created: (1) under age 30, (2) age 30 to 39, and (3) age 40 to 44. Marital status has two categories: (1) currently married, and (2) not currently married, including never married, divorced, separated, or widowed.

The demographic composition of the family is measured by three variables. The first is a dichotomy of whether the family had any preschool child (under age 7) in the household. The second variable is also dichotomous, which is about whether there is any old family member (age 60 and above) living in the household. The third variable reflects the number of working age member (age 20 to 49) in the family. If the respondent is at that age range (which is true for most cases in the analytical samples), he or she is excluded from the head count. The total number of working age family member are grouped into three categories: (1) no additional working age

family member, (2) with one additional working age member, and (3) with two or more additional working age members.

The total annual income of the family is a constructed variable provided by CHNS. To gain a better hold of the nonlinear effect of family income on individual's employment sector, the continuous annual family income is divided into the following five groups: (1) under 1,000 *yuan*, (2) 1,000 to 2,999 *yuan*, (3) 3,000 to 4,999 *yuan*, (4) 5,000 to 6,999 *yuan*, and (5) 7,000 *yuan* and above.

In CHNS, the residence of the respondents is grouped into city, suburb, town, and village. The four categories can be understood by a hypothetical scale of urbanization: cities are on the highest end of urbanization, villages on the lowest end, and suburbs and towns in between. The major difference between suburbs and towns is the closeness to cities. Suburbs are always the outskirts of cities, but a town is the administrative center of a rural area, and can be far away from cities. To keep the nuances of the different residences, I use the four categories of residence to control its effect.

The eight provinces in the survey are gathered into four groups: (1) Northeastern provinces, including Liaoning and Heilongjiang; (2) Coastal provinces, including Shandong and Jiangsu; (3) Central provinces, including Henan, Hubei, and Hunan; and (4) Western provinces, including Guizhou and Guangxi.

In addition, for the analysis on the job shifts across employment sectors among adult workers, their baseline employment sectors in 1989 are controlled. The control is necessary because, as I have discussed in Chapter 2, there are great variations on the rewards and benefits between employment sectors. Consequently,

the cost and benefit of changing the employment sector are partially determined by the respondent's original employment sector, which in turn affect the decision of changing jobs across employment sectors.

Analytical Strategies

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. A series of nested models are developed. The baseline model includes the key independent variables (education, family's presence in the employment sectors, gender, and year) and all the control variables but family income.[5] The equation is as follows:

(0) $\log(P_{ij}/P_{i1}) = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_5Year + \Sigma B_kX_k + r_i$

where: P_{ij} = probability of falling into outcome category j for individual i (j = 2 to 5)

P_{i1} = probability of falling into outcome category 1 for individual i

E = education

G = gender

S = other family member in the state/collective sector

P = other family member in the private/other sector

F = other family member in family farming

Year = CHNS survey year

[5] Due to the strong collinearity between family income and the composition of family members' employment sector, family income is excluded from the analysis.

X_k = control variables (family income excluded)

Then the models with the interactive terms between the variable of year and each key independent variable are estimated separately. That is, there are five models with interactive terms: (1) with the interaction between year and education, (2) with the interaction between interaction between year and family's presence in the state/collective sector, (3) with the interaction between year and family's presence in the private/other sector, (4) with the interaction between year and family's presence in farming, and (5) with the interaction between year and gender. The equations of those models are:

(1) $\log(P_{ij}/P_{i1}) = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_5Year + B_6Year*E + \Sigma B_kX_k + r_i$

(2) $\log(P_{ij}/P_{i1}) = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_5Year + B_6Year*S + \Sigma B_kX_k + r_i$

(3) $\log(P_{ij}/P_{i1}) = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_5Year + B_6Year*P + \Sigma B_kX_k + r_i$

(4) $\log(P_{ij}/P_{i1}) = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_5Year + B_6Year*F + \Sigma B_kX_k + r_i$

(5) $\log(P_{ij}/P_{i1}) = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_5Year + B_6Year*G + \Sigma B_kX_k + r_i$

where: Year*E = interactive term of year and education

Year*S = interactive term of year and having family member in the state/collective sector

Year*P = interactive term of year and having family member in the private/other sector

Year*F = interactive term of year and having family member in family farming

Year*G = interactive term of year and gender

The baseline model estimates the overall effects of the key independent variables on the entry of an employment for the youth. The models with interactions further analyze the period effects of the key independent variables and examine the extent of the change of their effects over time, if there is any. The predicated probabilities of the independent variables are calculated to facilitate the understanding of the results of the multinomial models.

Since the outcomes of the job shifts across employment sectors 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. The equation of each model is as follows:

(1) $\log[P_{change}/(1-P_{change})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + \Sigma B_kX_k + r_i$

(2) $\log[P_{movetostate}/(1-P_{movetostate})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + \Sigma B_kX_k + r_i$

(3) $\log[P_{movetoprivate}/(1-P_{movetoprivate})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + \Sigma B_kX_k + r_i$

(4) $\log[P_{movetofarm}/(1-P_{movetofarm})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + \Sigma B_kX_k + r_i$

where: P_{change} = probability of having changed the employment sector

$P_{movetostate}$ = probability of having moved to the state/collective sector

$P_{movetoprivate}$ = probability of having moved to the private/other sector

$P_{movetofarm}$ = probability of having moved to farming

In order to test the research hypotheses on the differentiated gender effects by marital status and employment sectors, the interactive terms between gender and marital status and between gender and original employ sector are later added in each model. As a result, eight models are estimated:

(1a) $\log[P_{change}/(1-P_{change})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_5F + B_6G*M + \Sigma B_kX_k + r_i$

(2a) $\log[P_{movetostate}/(1-P_{movetostate})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_6G*M + \Sigma B_kX_k + r_i$

(3a) $\log[P_{movetoprivate}/(1-P_{movetoprivate})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_6G*M + \Sigma B_kX_k + r_i$

(4a) $\log[P_{movetofarm}/(1-P_{movetofarm})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + + B_6G*M \Sigma B_kX_k + r_i$

(1b) $\log[P_{change}/(1-P_{change})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_6G*OES + \Sigma B_kX_k + r_i$

(2b) $\log[P_{movetostate}/(1-P_{movetostate})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_6G*OES + \Sigma B_kX_k + r_i$

(3b) $\log[P_{movetoprivate}/(1-P_{movetoprivate})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_6G*OES + \Sigma B_kX_k + r_i$

(4b) $\log[P_{movetofarm}/(1-P_{movetofarm})] = B_0 + B_1E + B_2G + B_3S + B_4P + B_5F + B_6G*OES + \Sigma B_kX_k + r_i$

Where: G*M = interactive term of gender and marital status

G*OES = interactive term of gender and original employment sector

The predicted probabilities based on the models are used to better interpret the interactive effects.

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 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 by using the "cluster" option to specify that the observations are not necessarily independent within household.

Chapter 5: Where to Start? Job Placements across Employment Sectors among Young Workers

Which employment sector would a Chinese worker choose when he or she first entered the unique labor market stratified by employment sectors? Using multinomial logistic regression models, this chapter examines the factors affecting the choices of employment sectors among young workers (age 17 to 24). As I mentioned in Chapter 4, it is necessary to include the categories of 'not working yet' to control the selectivity problem of young workers. Therefore, there are five categories for the dependent variable in the multinomial models: (1) not working and not in school, (2) in school, (3) state/collective sector, (4) private/other sector, and (5) family contract farming. Although it will be interesting to inspect the differences between each pair of the categories, the focus of this research is the labor market behavior and thus the discussion in this chapter will concentrate on the comparison across the three employment sectors. The comparisons between the youths who were working and who were not working are only discussed when it is necessary to substantiate a theoretical point. In accordance, five pairs of outcomes are displayed for the results from the multinomial model: not working versus farming, in school versus farming, state/collective sector versus farming, private/other sector versus farming, and private/other sector versus state/collective sector.[1] Among the influencing factors, I will focus on the effects of year, human capital, family background, and gender. In addition, the interactive effects of year and the other key independent variables will

[1] There are four pairs of outcomes from the multinomial analysis that are not shown here. They are: not working versus state/collective sector, not working versus private/other sector, in school versus state/collective sector, and in school versus private/other sector.

be discussed to understand the period effects of those variables as the market economy expands. Since the coefficients for multinomial models are in relative terms, the predicted probabilities of the five outcomes of youths' employment status are calculated for the subgroups defined by the key independent variables separately to present clearer pictures on the effects of the independent variables.[2]

Effects of Year

Table 5.1 displays the distribution of five outcome categories for the youths all together and by survey year separately. On average, in the 1990s, about 40 percent of the youths aged 17 to 24 worked on the family farm, 26 percent in the state/collective sector, and only 10.8 percent in the private/other sector. The rest were not working at the time of the survey. It is obvious that there are many more youths working in the private/other sector in 1997 (17.9%) than in 1989 (6.0%). At the same time, the proportions of the youths in the state/collective sector and in family farming have greatly declined over time. In 1989, 31.2 percent of the youths were working for the state/collective sector. In 1997, the percentage went down to 19.6 percent. The proportion of young farmers has decreased from 44.5 percent in 1989 to 34.7 percent in 1997.

The multivariate estimates in Table 5.2 also demonstrate the growth of the private/other sector. The positive and significant coefficients of "Year 1997" for "private/other sector versus farming" and "private/other sector versus state/collective sector" suggest that, compared to 1989, the probability of working in the private/other

[2] The predicted probability is calculated by using the "prvalue" procedure in STATA provided by Long and Xu (www.indiana.edu/~jslsoc/spost.htm). When calculating the predicted probabilities, the value of the key independent variable specifies the subgroup and the rest of the independent variables are set to the mean of the subgroup.

sector for the youths has significantly increased in 1997 relative to the likelihood of working on the farming farm or in the state/collective sector. In order to examine the trends of the distribution of employment sectors after controlling other factors, Table 5.3 displays the predicted probability of employment status for the youths by survey year. It further illustrates the growth of the private/other sector. After controlling other characteristics, the probability of working in the private/other sector for an *average* young worker was .09 in 1989, and the probability has increased to .28 in 1997. In contrast with the expansion of the private/other sector, the state/collective sector and the family farming have declined. The probability of working in the state/collective sectors has gone down from .42 in 1989 to .25 in 1997 for the young workers. Similarly, the probability of working on the family farm was .33 in 1989 and decreased to .20 in 1997.

In brief, the distribution of the employment sectors of the young workers between ages 17 to 24 has significantly changed from 1989 to 1997. As the market economy expands, young workers are more likely to work in the private/other sector and less likely to work in the state/collective sector or on the family farm.

Effects of Education

In Table 5.2, 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.

The effects of education is further explained in Table 5.4, which presents the predicted probabilities of not working, staying in school, and working in different sectors for the youths with different levels of educational achievement. For an average worker with primary school or no education, the probability of working on family farm is .77. The probability will drop to .35 for an average worker with middle school education. If the worker has high school or higher education, the probability becomes even lower (.02). Interestingly, while middle school education would increase the probability of getting a job in the private/other sector from .07 to .15 for the young workers, a further improvement of the education level to high school or above decreases the probability of working in the private/other sector to .09. With regard to the state/collective sector, young workers with middle school education have some advantages in entering that sector (probability = .32) relative to those with only primary school or no education (probability = .09). The advantage of getting a job in the state/collective sector brought about by education further increases for a young worker with some high school or more education (probability = .38). When reading the probabilities of working in different employment sectors, it should be kept in mind that a large proportion of the youth would be still in school as the

education level increases, which is confirmed by the increase of the probability of being in school from .00 to .41 as the education level changes from primary or no education to high school or more education. Therefore, the effects of high school or higher education on working in the state/collective sector or the private/other sector are compressed due to the large increase of the probability of staying out of the labor force. Focusing on the youth that are already in the labor force, the probability of working in the state/collective sector or the private/other sector will further increase as the education level becomes high school or more education (results not shown here).

To detect the period difference of the education effects, the interactions between year and education levels are added to the model (Table 5.5). The likelihood-ratio test shows that the model in Table 5.5 is significantly better comparing to the model in Table 5.2, 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 5.6, 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 5.6 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 obviously keeps the young respondents out of family farming and improves their chance of working in the state/collective sector or in the private/other sector. Between the state/collective sector and the private/other sector, the better-educated young workers are more likely to work for the state/collective sector. As to the change of the education effects over time, it is found that high school education has become more important in sending young workers to the state/collective sector versus family farming or the private/other sector.

Effects of Family Background: Social Capital versus Family Strategy

The coefficients of the three dichotomous variables in Table 5.2—whether the respondent has any other family member in the state/collective sector, in the private/other sector, or in family farming—tell us that the effect of family background in one employment sector works mainly as the social capital in helping young workers locate a job in the same sector. The hypothesized effect of the risk diversification strategy cannot be found. For instance, if a respondent has other family members in the state/collective sector, he or she is more likely to work in the state/collective sector than in the private sector (coef. = -1.140 for private/other sector versus state/collective sector) or on the family farm (coef. = 1.526 for state/collective sector versus farming). Similarly, for young workers with family members in the private/other sector, their chances of working in that sector rather than in the other

two sectors are greatly increased (coef. = 2.114 for private/other sector versus farming; coef. = 1.452 for private/other sector versus state/collective sector). Between family farming and the state/collective sector or the private/other sector, having other family members working on the family farm is negatively related with an individual's probability of working in either of the nonagricultural sector (coef. = -3.181 for state/collective sector versus farming; coef. = -2.764 for private/other sector versus farming).

Furthermore, the presence of other family members in one employment sector affects the probability of young workers working in the other two sectors. Specifically, having other family members in one of the nonagricultural sectors is helpful for finding jobs in the other nonagricultural sector versus working on the family farm, and young workers coming from farmers' families—with other members working on the family farm—are more likely to get into the private/other sector if they work on off-farm jobs. For example, for a young worker who has another family member in the state/collective sector but wants to find a job between the private/other sector and family farming, the odds of getting a job in the private/other sector are about 1.5 times ($e^{.386} = 1.47$) higher than another worker without any family member in the state/collective sector. Likewise, having other family members in the private/other sector will increase an individual's chance of getting a job in the state/collective sector by 1.9 times ($e^{.663} = 1.94$) if the choice has to be made between the state/collective sector and family farming. For young workers from farmers' families but working on off-farm jobs, their chances of entering the private/other

sector versus the state/collective sector is nearly 1.7 times ($e^{.507} = 1.66$) higher than those from non-farmer families.

The predicted probabilities in Tables 5.7 to 5.9 further illustrate the influence of the family background on the entry of different sectors for the young workers. Table 5.7 displays the predicted probabilities of employment status by whether the family has any other member in the state/collective sector or not. For the youths with a family member in the state/collective sector, the probability of getting a job in that sector is as high as .66, while the probability becomes much lower (.11) if the family does not have any member in that sector. Moreover, youths with some family background in the state/collective sector have a much lower probability of working on the family farm (.04) than those without such a family background (.68). Although the absolute level of the probability of working in the private/other sector does not vary much between the young workers with (.09) and without (.12) family connection in the state/collective sector, it is obvious that the odds ratio of working in the private/other sector versus farming is much larger for the youths with family background in the state/collective sector (0.09/0.04 = 2.39) than those without (0.12/0.68 = .17).

From Table 5.8, we see that the probability of working in the private/other sector for the youths from families with any other member in the private/other sector is .38, and the probability is .10 for those from families without any member in the sector. In addition, having another family member in the private/other sector also decreases the probability of farming (.09), while the probability of farming is .37 for the youths with no family member in the private/other sector. Although the

probability of working in the state/collective sector for the youths with the family background in the private/other sector is lower (.28) than for those without such family background (.35), the odds ratio of working in the state/collective sector versus farming for the former (0.28/0.09 = 2.98) is still much higher than for the latter (0.35/0.37 = .93).

In Table 5.9, it is obvious that the probability of working on the family farm is much higher for the youths from families with other members working on the farm (.74) than for those with no other member working as a farmer (.01). Furthermore, the probabilities of working in the state/collective sector are different between young workers with and without the family background in farming. For the former, the probability is .10; and for the latter, the probability is .61. There is little difference in the probability of finding a job in the private/other sector between the youths with and without the family connection in farming.

The predicted probabilities in Tables 5.7 to 5.9 clearly demonstrate that having another family member in one employment sector facilitates the entry into that sector for the young workers. Moreover, having other family members in the state/collective sector or the private/other sector greatly decreases the probability of working on the family farm for the youths. Furthermore, the youths from farmers' families face a much lower chance of getting a job in the state/collective sector than those from non-farmers families. It should be noted that the relatively higher probability of entering one nonagricultural sector versus farming for young workers with the family connection in the other nonagricultural sector is mainly because the family connection in either of the nonagricultural sector has effectively kept the

youths away from farming. Similarly, since the young workers from the families without any member working as farmers are mostly absorbed by the state/collective sector, the odds ratio of entering the private/other sector to the state/collective sector is lower for them than for the youths from farmers' families.

The likelihood-ratio test for the model with the interactions between the presence of another family member in the private/other sector and the year reveal that the effect of having another family member in the private/other sector on allocating young workers into different employment sectors has significantly changed from 1989 to 1997 (Table 5.11). Nevertheless, the same statistical tests show that there are no significant period differences on the effects of having another family member in the state/collective sector (Table 5.10) and having another family member in family farming (Table 5.12).

The coefficients of the interactive term in Table 5.11 suggest that the effect of having other family members in the private/other sector has greatly strengthened in placing young workers into the private/other sector or into the state/collective factor relative to farming in 1997. However, there is no significant difference in the effect of having other family members in the private/other sector in sending young workers into the private/other sector versus the state/collective sector from 1989 to 1997. Table 5.13 presents the predicted probabilities of the employment sectors for young workers by their family background in the private/other sector in 1989 and 1997 separately. In 1989, the probability of entering the private/other sector is .25 for young workers with family connection in the private/other sector. In 1997, the probability has increased to .48 for young workers with the same family background.

Hence, having family members in the private/other sector has become even more influential in improving a young worker's chance of entering the private/other sector in 1997. Meanwhile, having other family members in the private/other sector has become more efficient in finding off-farm jobs for the young workers from 1989 to 1997. In 1989, the probability of working on the family farm for a young worker with family members in the private/other sector is .22, and the probability of farming has dropped to .10 in 1997. Besides, the predicted probability of working in the state/collective sector for young workers has declined from .34 in 1989 to .18 in 1997. However, the relative probability of finding a job in the state/collective sector to farming for young workers with the family background in the private/other sector has become higher in 1997 (0.18/0.10 = 1.88) than in 1989 (0.34/0.22 = 1.54) because of the rapid decline of the probability of farming in 1997. In brief, the family background in the private/other sector has become more powerful in sending young workers to the private/other sector and keeping them out of farming over time. It is also found that having other family members in the private/other sector has a stronger effect on helping young workers enter the state/collective sector, but such effect should be attributed to the growing influence of the family connection in the private/other on finding off-farm jobs for its workers.

To sum it up, the family strategy effect of the family background in the employment sectors is not found among young workers between ages 17 to 24 in the CHNS data. Rather, having other family members in an employment sector serves as the social capital by greatly increasing a young worker's chance of entering the same sector. Although the social capital effects have declined a bit from 1989 to 1997 for

having family members in the state/collection sector or in family farming, the change is not statistically significant. More interestingly, the social capital effect for having family members in the private/other sector has increased significantly from 1989 to 1997. These findings disagree with the market transition theory, according to which the development of the market economy will increase the importance of human capital on the job market and decrease the importance of other capitals, including social capital. Actually, as the private/other sector grows, it becomes a more attractive employment sector than before, resulting in the increase of the importance of having the family connection in the sector in helping young workers find a job there. However, it is important to note that the present analysis focuses on the early career for young workers where family connections may be more important than the later career. This is the topic of investigation in Chapter 6.

Effects of Gender

There is no significant difference between young men and women on their employment sectors (Table 5.2). Although the overall gender difference in employment sectors is not significant, the gender effect has noticeably changed over time. Table 5.14 displays the model with the interaction between year and gender. The likelihood ratio test shows that it is a significant improvement from the model without the interactive term. The coefficient of variable 'Female' indicates that in1989 young women are significantly less likely to join the private/other sector versus to work on the family farm comparing to young men. In 1997, however, the gender gap between entering the private/other sector and working on the family farm has reversed, suggested by the direction and magnitude of the coefficient of the

interactive term. Moreover, young women seem to have a significantly higher probability in finding a job in the private/other sector relative to the state/collective sector than young men in 1997.

The predicted probabilities of the employment status for men and women in 1989 and 1997 separately in Table 5.15 further illuminate the change of the gender gap in employment sectors over time. In 1989, the probability of working in the private/other sector for young women is .07, which is lower than the probability for young men (.11). The probability of entering the private/other sector has increased for both men and women in 1997. Nevertheless, the growth is much faster among young women than among young men. Consequently, young women have a higher probability of working in the private/other sector (.31) than young men (.25) in 1997. At the same time, the probabilities of entering the state/collective sector and farming have both dropped to the level that is lower than the probability of working in the private/other sector for young men and women from 1989 to 1997. In spite of the slightly higher probability of working in the state/collective sector for young men and the slightly lower probability of farming for women in 1997, the overall probability of working outside the private/other sector is similar for the young men and women. A further look at Table 5.15 tells us that although the probability of not working is much higher for young women (.16) than for young men (.08) in 1989, the probability of unemployment for young men has increased to .19 in 1997 while the unemployment rate remains stable over time for young women. In addition, the difference in the probability of being in school is .01 between young men and women in 1989, and the gender gap in staying in school has increased a bit in 1997. Therefore, young

women's higher probability of entering the private/other sector in 1997 can be largely attributed to their lower probabilities of not working and staying in school.

In sum, the gender difference in the job placement across employment sectors among young workers is found in the private/other sector. Initially, young men were more likely to enter the private/other sector than young women in 1989. Interestingly, the gender gap has been reversed in 1997 due to the more rapid growth of the private/other sector among young women than among young men in the 1990s. The driving force behind it could be the rising demand on female labor in the private/other sector as the sector expands. The female advantage in entering the private/other sector is a mixture of good news and bad news. On the one hand, the advantage has provided young women work opportunities off-farm. On the other hand, the increased work opportunities may become a distraction of staying in school for young women and generate the gender gap in tertiary education, which may affect the labor market outcome in later life. Since the differences in the probabilities of working in the state/collective sector or farming between young men and women are insignificant in both years and the opposite gender effects of entering the private/other sector in 1989 and 1997 must have canceled out each other for the whole sample, overall there is no significant gender difference in the job placement across employment sectors.

Effects of Control Variables

Among the control variables, we see that age, marital status, residence, and province are the ones of significance in affecting the employment sectors of young workers (Table 5.2). Variables about demographic structure of the family, including having a child under age 7 in the household, having elderly of age 60 and above in the

household, and the number of working age (20-49) adults in the family, do not show significant influence on young workers' chances of working in different employment sectors.

Relative to young workers between ages 20 and 24, those under age 20 are less likely to work in the state/collective sector than to work on the family farm, and more likely to work in the private/other sector than to work in the state/collective sector. There is no significant difference on the chances of working in the private/other sector and on the family farm by age. Therefore, older age appears to be an advantage to get a job in the state/collective sector among young workers, at least among this sample of youthful workers. The finding might reflect both the demand and the supply of the labor force in the state/collective sector. On the demand side, the state/collective sector may set a higher threshold of age when recruiting workers. On the supply side, workers at age 20 and above may have a stronger desire on a stable job in the state/collective sector than their younger counterparts because they are starting their own families.

Comparing to the probability of working on the family farm, being married is negatively associated with working for the state/collective sector or for the private/other sector, and the effects are significant. However, the causal relationship between marital status and employment sector can be in both directions. It is possible that young farmers are getting married earlier than other young workers working in the nonagricultural sectors. It is also possible that being married makes it more difficult for workers to migrate for jobs. Since most jobs in the state/collective or private/other sectors are in towns and cities, those married young workers living in

villages are more likely to stay on the family farm in the village rather than finding jobs in nonagricultural sectors elsewhere due to the difficulty of family migration. In spite of the negative association between being married and working in nonagricultural sectors, there is no significant correlation between being married and working for the private/other sector versus working for the state/collective sector.

Relative to city residents, those individuals who live in the suburbs, towns, and villages have a much lower probability to work in the state/collective sector or the private/other sector than working on the family farm. This should not be surprising considering that the jobs in the state/collective sectors mostly concentrate in cities and the growth of the private/other sector is fastest in cities as well. It is interesting, however, that the residence does not affect the young workers' chances of working for the state/collective sector versus the private/other sector.

Young workers in the northeast provinces (Liaoning and Heilongjiang) are less likely to work for the private/other sector than on the family farm relative to their counterparts from provinces in central China (Henan, Hubei, and Hunan). Except for that, there are no significant differences between young workers in the northeast and central provinces with regard to their probabilities of working for the state/collective sector versus family farming or versus private/other sector. Comparing to young workers in central provinces, those in the coastal provinces (Shandong and Jiangsu) have a better chance to work in the state/collective sector or the private/other sector versus on the family farm. However, the probabilities of working in the private/other sector versus in the state/collective sector between young workers from coastal and central provinces are not significantly different. For young workers from western

provinces (Guangxi and Yunnan), they have a higher probability to work in the private/other sector versus farming or working for the state/collective sector comparing to young workers in the central provinces. Their probabilities of working for the state/collective sector versus farming, however, are lower than their counterparts in the central provinces. These findings may reflect the different experiences of different sects of China during the economic reform era. The coastal provinces are the ones that gain most from the economic growth, and the two coastal provinces surveyed by CHNS are economically successful in both the state/collective sector and the private/other sector. Therefore, relative to the central provinces, young workers of the coastal provinces have sufficient job opportunities in both sectors. The northeast and the central provinces are similar in many ways: their state and collective enterprises are not doing well as the reform in the state/collective sector is getting serious in the 1990s, and they have lagged behind in the expansion of the private businesses. But the difference is that the northeast provinces face less pressure on land in agriculture due to a higher land/person ratio there than the rest of the country. So the family farming sector in northeast provinces is able to accommodate more young workers than the sector in central provinces. The western provinces are the least developed economically: they don't have a strong state/collective sector, and their land/person ratio is extremely low because of the mountains in the area. Therefore, even though the private/other sector in that part of China is not well developed, it absorbs more young workers than the private/other sector in central provinces because of the limited job opportunities in the other sectors.

Summary

Using the cross-sectional data derived from the first and the fourth wave of CHNS, the job placement across employment sectors among young workers aged 17 to 24 is examined in this chapter. In general, a large proportion (40%) of the young workers are still working as farmers in the 1990s, and the state/collective sector is more popular among the young workers than the private/other sector. However, young workers of the year 1997 are more likely to find a job in the private/other sector and less likely to enter the state/collective sector or to work on the family farm relative to young workers of 1989. The findings are consistent with the trend of the growth of the private/other sector and the decline of the state/collective sector and farming in the economy in the 1990s.

In this chapter, I also discussed the effects of human capital, family background, and gender on the job placement across employment sectors among young workers and how those effects have changed over time. Human capital, measured by education, has strong influences on the employment sector of the young workers. 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. 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.

The social capital effects of the family background in the employment sectors seem to overwhelm the necessity of diversifying the risks among family members in the reform era. Having other family members in one sector greatly increases a young worker's chance of getting a job in the same sector. The finding suggests that although risk diversification might be a concern for Chinese families and some of them might be able to successfully execute the strategy during the economic reform era, more families are constrained by their resources, especially social capital, and not able to send the youths in their families to different employment sectors from other family members. This is consistent with another empirical study, which found that the Chinese households are more likely to "specialize" in one employment sector rather than "diversifying" into different sectors (Entwisle et al. 2000). Moreover, the social capital in the state/collective and the private/other sectors are found to be equally effective in keeping young workers off the farm. On the contrary, having family

members working on the farm is indeed an obstacle (or negative social capital) for young workers from this kind of family background to enter either of the off-farm sectors. These can be understood as the continuity of the rigid segregation between the agricultural and the nonagricultural sector under the state socialist economy. Despite that the economic reform has provided new off-farm job opportunities for young men and women from farmers' family, the hierarchy of employment sectors is still highly visible in the 1990s. Furthermore, the social capital effect of having family members in the private/other sector has become more influential in helping young workers find a job in the private/other sector and keeping them off the farm in 1997. These findings suggest that the further progress of the market economy does not necessarily decrease the significance of the family as the social capital in determining individuals' employment sectors. On the contrary, as the private/other sector grows and becomes a more attractive employment sector, the value of the social capital in that sector increases.

For the cross-sectional sample of young workers from 1989 and 1997 as a whole, there is no significant gender difference on their employment sectors. Nevertheless, the gender effect on the probability of working in the private/other sector has some noticeable changes over time. While in 1989 young men are more likely to work in the sector than young men, the gender effect has flipped in 1997 and young women have a higher probability to work in the sector than young men. The changes of the gender effects are interesting in the way that the increased probability for women to work in the private/other sector does not result from the decreased probabilities for women to work on the family farm or in the state/collective sector.

Rather, the growth of young women's share in the private/other sector is mostly due to the decline of their probability to stay out of work or stay in school. This finding implies that there is an increase in the demand of young female workers in the off-farm sectors in the 1990s, which might be the consequence of the growth of labor-intensive manufacture industry and service industry. It is also possible that the jobs with fastest growth rate on the labor market are considered as "female" jobs so that young men are reluctant to take those jobs.

In conclusion, both human capital and social capital are important in determining the employment sectors of young workers. Additionally, the effect of tertiary education has become stronger, and the social capital in the private/other sector has become more powerful. Although there is no significant gender segregation on employment sectors among young workers, young women seem to have become more active in the private/other sector as the economic reform proceeds. The labor market experience of young workers during the 1990s demonstrated the importance of human capital, social capital and, to some extent, gender on influencing the starting point of Chinese workers on the ladder of employment sectors. The next question is how the same set of variables affects the job shift across employment sectors, which will be discussed in the next chapter.

Chapter 6: To Change or Not to Change? Job Shifts across Employment Sectors among Older Workers

Focusing on the workers who were between ages 25 to 44 in 1989 and stayed in the labor force till 1997, this chapter analyzes the factors determining the job shifts across employment sectors. There are four outcomes of interest. The first one is the overall job mobility across *all* employment sectors, and the rest are about the three possible destinations of the job shift: moving to the state/collective sector, moving to the private/other sector, and moving to family contract farming. Since all the outcomes are dichotomous variables, logit models are used for the multivariate analysis. In these analyses, the independent variables include the individual and family characteristics of the workers in 1989, among which I will concentrate on the influences of the worker's original employment sector, human capital, family background, and gender. When discussing the gender differences on job shifts across employment sectors, the interactive effects of gender and marital status and of gender and original employment sector are investigated. The effects of the control variables will be discussed following the key independent variables.

Effects of Original Employment Sectors

Table 6.1 displays the cross-tabulation of the employment sector in 1989 and in 1997 for workers aged 25 to 44 in 1989. It is clear that about one in four workers changed their employment sectors by 1997. Moreover, depending on the original employment sector in 1989, the mobility rate across employment sectors varies. Workers of the private/other sector are the most mobile group: about 40 percent of the

workers changed their employment sectors during the period. Farmers are the least mobile group: only 19 percent had moved to a different sector. Workers of the state/collective sector are in the middle: about 33 percent of them had gone to a different sector by 1997. It should be mentioned that the overall mobility rate and the mobility rate of the state/collective sector might be underestimated because the panel sample has lost many observations from the state/collective sector and it is very likely that the survey cannot trace those individuals and households because they have changed their jobs, although we have no idea if their job shifts are mostly within or across employment sectors.

Consistent with the secular trend of the growth of the private/other sector during the 1990s, the private/other sector is the most common destination of the job shifts, with 11 percent of the workers moving into that sector. About 8 percent of the workers moved to family farming, and 5 percent to the state/collective sector. It is surprising to see that there are more workers transferring to family farming than to the state/collective sector, not only because family farming is the least desirable employment sector (especially for workers who have worked off farm) but also because farming land usually cannot be contracted to urban residents. The distribution of the destination employment sectors by the workers' original employment sector discloses that actually among workers from the state/collective sector, 20.4 percent have moved to farming, and 12.8 percent to the private/other sector. Similarly, 23.8 percent of workers from the private/other sector have shifted into family farming, while only 16.7 percent of them have transferred to the state/collective sector. The unusual high mobility rate toward family farming among the nonagricultural sector

workers in CHNS may be explained by two reasons. First, the CHNS data have "rural bias" because the survey sampled more observations in rural areas than in urban areas. But CHNS never provided weighting variables to correct such bias. And the transition from nonagricultural sector to family contract farming may be more common and easy in rural areas even if the workers have worked off farm. Secondly, the panel sample for the analysis is also somewhat biased because the observations that have remained in the survey are more rural than those who have left. Therefore, the job shifts between the state/collective sector and the private/other sector might be underestimated due to the great loss of urban workers in the sample. With regard to the destination employment sector for the farmers, 7.2 percent have moved to the state/collective sector and 11.7 percent to the private/other sector. That is understandable because the private/other sector is more flexible in hiring workers from rural areas and without the permanent household registration of urban residence.

The multivariate analysis (Model 1, Table 6.2) shows that the mobility rate of the farmers is significantly lower than the rate of state/collective sector workers. The difference of the mobility rate is insignificant between workers of the state/collective and the private/other sector. As for the destinations of the job shifts for workers from different employment sectors, the move to the family farming is still more common than the transition to the other nonagricultural sector among workers from both the state/collective sector and the private/other sector even after controlling many variables. And for farmers, the private/other sector is a more common destination than the state/collective sector. Further analyses find that the farmers are more likely to move to the private/other sector than workers in the state/collective sector, and the

difference is statistically significant (Model 3, Table 6.2). However, there is no significant difference between farmers and workers of the private/other sector on their chances of moving into the state/collective sector (Model 2, Table 6.2). Neither is there any significant difference between the workers of the state/collective sector and those of the private/other sector on the likelihood of moving to family farming.

In sum, the overall rate of job mobility across employment sectors is about 25 percent among workers who were between ages 25 to 44 in 1989. Farmers have the lowest chance to change their employment sector. Workers of the state/collective sector have a slightly lower rate of job mobility across employment sector than workers of the private/other sector, but the difference is not significant after controlling workers' characteristics. Among the workers who have changed their employment sectors, those from nonagricultural sectors are more likely to retreat to farming than to move between the nonagricultural sectors (although this estimate might be biased by the features of the CHNS data and the panel sample). As for farmers who have changed the employment sector, they are more likely to go to the private/other sector than to the state/collective sector.

Effects of Education

From Model 1 in Table 6.2, we see that the effect of education on the overall job change across employment sector is not statistically significant, which runs contrary to the research hypothesis on the inversed U-shape relationship between educational achievement and job mobility across employment sectors.

But education matters in determining the destination employment sector of the job shifts. For instance, Model 2 (Table 6.2) 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 6.2), 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 6.2). 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. 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, self-employment (which is a substantial component of the private/other sector) does not have any formal requirement on education.

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.

Effects of Family Background: Social Capital versus Family Strategy

The family background and employment location of other household members has some influence on the overall change of employment sector for individual workers. According to Model 1 (Table 6.2), workers with any other family member in the state/collective sector in 1989 are more likely to change their employment sectors by 1997 than those without any other family member in the state/collective sector, and the effect is statistically significant but having another family member in the private/other sector or working on the family farm in 1989 does not have significant influence on a worker's probability to change the job across employment sectors by 1997. The finding of the significant effect of having other family members in the state/collective sector is not sufficient to decide whether the family background works as social capital or as the necessity to diversify income sources and therefore affects individual workers' job shifts across employment sectors. Further analyses on the association between family background in each employment sector and the direction of the job change are necessary to make such a judgment. Model 2 to Model 4 in Table 6.2 displays the coefficients of the logit models of the direction of job shifts.

From Model 2, we see that the probability of moving to the state/collective sector by 1997 is positively associated with the presence of family members in that

sector in 1989. That is consistent with the social capital hypothesis, which argues that the likelihood of moving into an employment sector is increased by the presence of another family member in the same sector. However, having another family member in the private/other sector or in farming does not have any significant impact on the likelihood of moving to the state/collective sector.

In Model 3, the family background in each employment sector has no significant influence on the probability of transferring to the private/other sector. But the directions of the coefficients are consistent with the social capital hypothesis: having family members in the private/other sector in 1989 is positively associated with the likelihood of moving to the sector by 1997. The presence of another family member in farming does not affect the probability of moving to family farming significantly (Model 4), although having other family members in farming in 1989 is positively related with the transition to family farming by 1997.

In sum, the family's presence in the state/collective sector not only greatly increases individual workers' probability of changing jobs across employment sectors but also significantly improves their chances of moving into the same sector. Therefore, it is safe to conclude that the family background in the state/collective sector works as social capital in sending family members from other sectors into the state/collective sector. Having other family members in the private/other sector or family farming is also positively associated with the likelihood of moving into the same sector for individual workers, but such effects are not statistically significant. Therefore, the social capital hypothesis on the importance of having the family connection in an employment sector in assisting workers to move into that sector is

supported for the state/collective sector, but cannot be proved for the private/other sector or family farming.

The lack of the significant finding on the social capital effect in the private/other sector might be attributed to the relatively small scale of that sector in 1989. Many individuals who worked in the private sector were self-employed or owners of small businesses. Therefore, their ability of helping family members move to the sector could be limited. As for the insignificant social capital effect in family farming, it is understandable since usually the transfer to family farming from nonagricultural sectors is involuntary. For workers who cannot keep their jobs in the state/collective sector or the private/other sector, they would seek other opportunities in the nonagricultural sectors first and retreating to family farming could be their last choice. In that way, having family members in farming may be never fully used as social capital by those with the connection.

Effects of Gender

Generally speaking, female workers are less likely to change their employment sectors from 1989 to 1997 than male workers (Model 1, Table 6.3). The introduction of the interactive term between gender and marital status further indicates that the female disadvantage in the probability of changing employment sectors is especially true for married women (Model 2, Table 6.3). To better understand the effects of the interaction between gender and marital status in job mobility rate, Table 6.4 displays the predicted probabilities of changing employment sector for married men, unmarried men, married women, and unmarried women

separately based the estimates of Model 2 in Table 6.3.[1] The predicted probability of transferring into a different employment sector is .18 for married women; and it is .27 for married men. The 95% confidence intervals clearly show that the difference on the predicted probability between married women and married men is statistically significant. Although the predicted probability of changing employment sector seems much higher for unmarried women, the difference between them and the other groups is not statistically significant possibly due to the small number of unmarried women at the age group in the sample. Therefore, the gender difference on job mobility across employment sectors is significant among married workers, but insignificant for unmarried workers.

Moreover, the female disadvantage on the chance of changing employment sector is not universal for all employment sectors. The coefficients of the interactive terms between gender and original employment sector indicate that female farmers are significantly less likely to change their employment sectors (Model 3, Table 6.3). Based on the model, Table 6.5 presents the predicted probabilities of job mobility across employment sectors for male and female workers originated from different employment sectors separately. For women who were working on the family farm in 1989, the probability to move out of it by 1997 is .13. For their male counterparts, the probability increases to .24. From the 95% confidence intervals, it is clear that the difference between male and female farmers is statistically significant. Nevertheless,

[1] Similar with Chapter 5, the predicted probability is calculated by using the "prvalue" procedure in STATA provided by Long and Xu (www.indiana.edu/~jslsoc/spost.htm). When calculating the predicted probabilities, the value of the key independent variable specifies the subgroup and the rest of the independent variables are set to the mean of the subgroup.

the differences between male and female workers in the state/collective sector or the private/other sector are not significant.

Among the workers who had moved to a different employment sector, female workers are generally less likely to move to the state/collective sector (Model 1, Table 6.6). The interactive effect of gender and marital status is not significant, and the gender effect diminishes after introducing the interactive term in the model (Model 2, Table 6.6). It means that the gender difference in the probability of moving to the state/collective sector does not vary much by individual's marital status. Model 3 (Table 6.6) shows that the interactive effect of gender and family farming is statistically significant. It indicates that the female farmers are the most disadvantaged in job shift to the state/collective sector among the workers. The predicted probabilities in Table 6.7 illustrate the finding. For women who worked on the family farm in 1989, their probability of moving to the state/collective sector by 1997 is only .03. The probability of going to the state/collective sector by 1997 for male farmers is .07. And the difference is statistically significant. However, there is no significant difference between male and female workers that originated from the private/other sector with regard to the likelihood of moving to the state/collective sector.

Female workers also have a significantly lower probability to move to the private/other sector from 1989 to 1997 than male workers (Model 1, Table 6.8). The significant and negative interactive effect of gender and marital status implies that married women are even more disadvantaged in transferring to the private/other sector (Model 2, table 6.8). Table 6.9 presents the predicted probabilities of moving

to the private/other sector for unmarried male workers, married male workers, unmarried female workers, and married female workers. It is obvious that there is a significant difference between married male and female workers in the probability of transferring to the private/other sector. For married male workers, the probability is .11. The probability for married female workers is .07. Although the predicted probabilities of unmarried male and female workers appear to be different in large scale, the difference is not statistically significant because of the small observation number of unmarried workers. Moreover, Model 3 (Table 6.8) demonstrates that again female farmers are more disadvantaged in moving from outside to the private/other sector. The predicted probabilities in Table 6.10 clearly show that. For female farmers, the probability of moving to the private/other sector is .07. For male farmers, the probability is .13. And the 95% confidence interval of this pair of predicted probabilities prove that the difference of the probability between male and female farmers is statistically significant. Nevertheless, there is no significant difference between male and female workers coming from the state/collective sector on their chances of transferring to the private/other sector.

In terms of the transition to family farming from nonagricultural sectors, surprisingly there is no significant difference between male and female workers (Model 1, Table 6.11). The interactive effect of gender and marital status is not significant either (Model 2, Table 6.11). However, the coefficient of the interactive term of gender and private/other sector is negative and statistically significant (Model 3, Table 6.11), which means that women from the private/other sector are less likely to retreat to family farming. The calculated predicted probabilities of moving to

farming for men and women originated from different employment sectors are displayed in Table 6.12. While the probability of transferring to family farming is .18 for male workers who was working for the private/other sector, it is .04 for women coming from that sector. The confidence interval shows that the difference is significant. In contrast, the probability of moving to family farming is similar for male and female workers of the state/collective sector. The male disadvantage in staying away from family farming among workers of the private/other sector is opposite to the research hypothesis, which predicts that women workers of that sector are more likely to retreat to family farming than men workers because agricultural work is considered to be more compatible with the responsibility of child care that usually falls on women's shoulders. The unexpected finding implies that women are more likely to stay in the private/other sector than men after controlling other characteristics of the workers.[2]

To sum it up, male and female workers have unequal experiences on the job mobility across employment sectors. In addition, the gender inequalities on job shifts vary by marital status and the original employment sectors of the workers. In general, female workers fall behind male workers on the overall mobility rate. And female workers are significantly less likely to move into the state/collective sector or the private/other sector. Moreover, there seems to be a "marriage bar" that decreases women's probability to change jobs across employment sectors in general and prevents them moving to the private/other sector in specific: the gender inequalities on the overall mobility rate and the transfer to the private/other sector are significant

[2] In the sample, among the 84 male workers of the sector, 48 (57.1%) stayed in the sector; among the 42 female workers of the sector, 27 (64.3%) stayed. However, chi-square test shows that the difference is not statistically significant for the bivariate analysis.

between married workers, but insignificant between unmarried workers. Furthermore, the female disadvantage on job mobility is noteworthy in the farming sector: female farmers are significantly less likely to change employment sector and to move to the state/collective sector or the private/other sector. There are no such significant gender differences among workers in the nonagricultural sectors. Finally, women are not always in the disadvantaged position in the labor market. Female workers of the private/other sector are actually found to be less likely to retreat to family farming than male workers of the private/other sector.

Effects of Control Variables

The probability of job change across employment sectors varies by age group. Model 1 (Table 6.2) shows that the oldest workers (age 40 to 44) in 1989 are less likely to change their employment sectors than the workers at younger age groups. The negative effect of age is also found for the transition to the private/other sector (Model 2, Table 6.2). Relative to the workers at age 30 to 39 in 1989, those at the younger ages (age 25 to 29) have a higher probability to move into the private/other sector, and those at the older age group (40 to 44) are less likely to move to the private/other sector. However, there are no significant age effects on the likelihood of moving into the state/collective sector (Model 2, Table 6.2) or family farming (Model 4, Table 6.2), although the workers at age 30 to 39 seemed to be more likely to make such movements than workers at the younger or older age group. The age effects on the overall mobility across employment sector and on the particular move to the private/other sector are understandable for at least three reasons. First of all, it is believed that people become more conservative in their attitudes toward change when

they are growing older. Secondly, age can be viewed as a proximate to the workers' experience in one employment sector. Job change always involves some cost. The longer a worker has worked in one employment sector, the higher the opportunity cost would be for leaving that sector. Last, there is strong age discrimination in the job market in China. Many employers, especially those in the private/other sector, set upper limit of age when they recruit new employees. That practice must have limited the job opportunities in the private/other sector for older workers.

Marital status per se does not have significant impact on the job shifts across employment sectors. The insignificant effect of marital status is a little bit surprise because it is believed that individuals may change their jobs after marriage to accommodate new family life or are simply more capable to move to a better job through spouse or spouse's networks. The lack of the finding might be attributed to the characteristics of the panel sample, which is dominated by married workers.

Among the variables measuring the demographic composition of the family, having a preschool child at home does not influence the job change across employment sectors. Having elders in the family, however, significantly decreases the probability of job mobility across employment sectors and the likelihood of the transition to the private/other sector. The total number of working age adults in the family does not strongly affect the overall change of employment sector, which also disapproves the hypothesis of family diversification strategy because a family with more working adults should have be more labor resources to assign its members into different employment sectors and thus increases their probabilities of changing employment sectors. The probabilities of moving to the private/other sector or family

farming are not significantly associated with the total number of working age adults of the family either. The only significant effect of the total number of working age adults in the family is found for the movement to the state/collective sector: for workers who were the only working age adult in the family in 1989, they are more likely to move to the state/collective sector than the workers from families with more than one working age adults.

Workers from the family with the highest level of income (7,000 *yuan* or above annually) in 1989 are the most likely to change their employment sectors by 1997, and the difference between them and workers with a lower family income is statistically significant. However, the differences between workers with the lower levels of family income are not statistically significant, although workers with lowest levels of annual family income (less than 1,000 *yuan* and 1,000 to 3,000 *yuan*) seem to be more likely to change their employment sectors than those with the mid-level family income (3,000 to 5,000 *yuan* and 5,000 to 7,000 *yuan*). The findings suggest that job change across employment sectors may be financially demanding. The analyses on the direction of the job change partially support the idea. Among the workers who had changed their employment sectors by 1997, those with the highest level of family income in 1989 are the most likely to move to the private/other sector. The lower the family income, the lower the probability of moving to the private/other sector, although the differences between workers of lower family income are not statistically significant. The finding implies that at least the transition to the private/other sector requires the family to have some financial cushion. The family income, however, does not have any significant impact on the possibility of moving

to the state/collective sector. For the transition to family farming, relative to workers with mid level family income (3,000 to 5,000 *yuan*) in 1989, those from families of lower levels of income are more likely to move to family farming, and those with higher family income (5,000 to 7,000 *yuan*) are less likely to do so. This indicates that the transition to family farming may be an involuntary move, considering that family farming is the least rewarding sector financially. Workers who had failed in the nonagricultural sectors chose to withdraw from those sectors and resorted to family farming as the backup plan.

Compared with the city residents, workers from less urban areas, including suburbs, towns, and villages, are significantly more active in changing their employment sectors from 1989 to 1997. Since a large proportion of older workers in urban areas live in the housing supplied by the work organizations in the state/collective sector, it might be difficult for them to quit the job in the state/collective sector. Not surprisingly, workers from suburbs, towns, and villages are more likely to move to the family farming than urban workers. With regard to the transition to the private/other sector, workers from towns have a significantly higher likelihood to move to the sector than those from cities. However, there is no significant difference in moving to the private/other sector between workers from cities and those from suburbs or villages. The probability of moving into the state/collective sector does not vary by the workers' residence. When understanding the effects of residence on determining job shifts across employment sectors, it should be kept in mind that the majority of the lost observations from 1989 to 1997 were city residents. In other words, the change of employment sectors in general and

the move to the private/other sector for city residents might be underestimated because the lost observations are very likely the workers who have changed their jobs.

Workers from different provinces do not have significantly different rates of mobility across employment sectors. However, the directions of the job shifts across employment sectors are significantly different for workers of different provinces. Comparing to the workers from central provinces (Henan, Hubei, and Hunan), workers from the coastal provinces (Shandong and Jiangsu) are more likely to move to the state/collective sector, and workers from the western provinces (Guizhou and Guangxi) are less likely to do so. Workers of the coastal and western provinces are more likely to move to the private/other sector than workers of the central provinces. On contrast, workers from the coastal and western provinces are less likely to move to family farming than workers from the central provinces. In summary, workers of the coastal provinces are more active in the transition to the state/collective sector and to the private/other sector, but less active in the transition to family farming. Workers of the western provinces are more active in the transition to the private/other sector, but less active in the transition to the state/collective sector or family farming. Workers of the central provinces are more active in the transition to family farming and to the state/collective sector, but less active in the transition to the private/other sector. Similar with the findings of provincial differences in Chapter 5, those differences by province are a reflection of the composition and the strength of the employment sectors for each province.

Summary

Using the panel data from the first and fourth wave of CHNS, this chapter examines the job shifts across employment sectors during the 1990s among the workers aged 25 to 44 in 1989. It is found that about 25 percent of the workers have changed their employment sectors. The farmers have a significantly lower probability of changing employment sectors than workers in the nonagricultural sectors, but there is no statistically significant difference on the mobility rate between workers of the state/collective sector and those of the private/other sector. Surprisingly, family farming is more likely to become the destination of job change among the workers of nonagricultural sectors than either the state/collective sector or the private/other sector. The estimation might be biased, though. Not surprisingly, the private/other sector is more likely to absorb workers from the agricultural sector than the state/collective sector. Considering the massive attention paid to the rural-to-urban migrant workers by the media, the government, and researchers in the 1990s in China, the picture drawn from the CHNS panel sample captures two features on the job mobility across employment sectors that were largely ignored before. First, it is still difficult for farmers to move to off farm jobs in spite of the great increase on the absolute number of migrant workers from rural areas in the 1990s. Secondly, it is not uncommon for workers of both the state/collective sector and the private/other sector to retreat to family farming.

Although the probability of changing employment sectors is not different among workers with different levels of education, education definitely has some impact on the chance of moving into a certain sector. On the one hand, individuals

with at least some middle school education have a better chance to transfer to the state/collective sector, and those with at least some primary education are more likely to move into the private/other sector. On the other hand, workers with at least some primary education are less likely to move from nonagricultural sectors to family farming. 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.

Having other family members in the state/collective sector facilitates a worker's transition from other sectors to the state/collective sector, and increases a worker's likelihood of changing his or her employment sector no matter which sector the worker originally came from. Therefore, the family background in the state/collective sector serves as social capital for workers with such a background in improving their job mobility in general and in sending them to the sector in specific. However, having other family members in the private/other sector or in farming does not have significant social capital effects on workers' job shifts across employment sectors.

Comparing with men, women workers are noticeably less mobile in the labor market, and even if they changed their employment sectors, they are less likely to transfer to the state/collective sector or the private/other sector. Two groups of women are the most disadvantaged in job mobility: married women and women working on the family farm. Nevertheless, being less mobile does not always mean a

bad thing for women. Indeed, women workers have a lower probability of retreating to the family farming from the private/other sector.

In conclusion, human capital, social capital in the state/collective sector, and gender are important factors in determining both the overall job mobility across employment sectors and the destinations of such job mobility. In addition, the requirement on the threshold level education seems to be different for each employment sector. The gender differences on job shifts vary by marital status and the workers' original employment sector.

Chapter 7: Conclusion and Discussion

This dissertation has investigated the impact of the market-oriented economic reform on one aspect of the labor market outcomes—individuals' access to different employment sectors in China. In contemporary China, the economy is divided into three sectors with distinct institutional arrangements: the state and collective sector, the private sector, and the sector of family contract farming. Different employment sectors provide different opportunity structures for individuals working in the sectors. Therefore, the procedure that sorts individuals into different employment sectors is important for understanding the inequalities in other labor market outcomes (wage, welfare benefits, career development, etc.) and the process of social stratification in the context of China's economic reform.

Using the first wave (1989) and the fourth wave (1997) of the CHNS data, this study examines the effects of education, family background, and gender on the job placement among the employment sectors for young workers (age 17 to 24) and the job shifts 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 was also examined. Different from previous studies whose focus is the relative importance of political capital and human capital in determining income inequality in the pre-reform and reform-era China, this study recognizes the importance of family background and gender as mechanisms of social stratification and paid equal attention to their influences as well as the influence of education on individuals' access to different employment sectors.

The Chinese workers' distribution across employment sectors is undoubtedly affected by the change of the macroeconomic environment. In the 1990s, China's economy experienced the growth of the private sector and the decline of the state/collective sector and the sector of agricultural production. This study finds that young workers in 1997 are more likely to work in the private sector and less likely to work in the state/collective sector or work on the family farm than their counterparts in 1989. Among the older workers who have changed their employment sectors by 1997, the private sector is more likely to be the destination of the move than the state/collective sector or the sector of family farming. However, considering the overall low mobility rate (25%) of the older workers, it is possible that a large proportion of the rapid growth of the private sector can be attributed to young workers who selected the private sector at the early stage of their careers rather than to the older workers who joined the sector later in their careers.

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.

With regard to the influences of family background on the access to different employment sectors, the social capital hypothesis of family background is fully supported by the analyses on young workers and partially supported by the analyses on older workers, and the risk diversification hypothesis is rejected. Young workers are found to be more likely to work in an employment sector if they have other family members in that sector, and that is true for all the three employment sectors. Older workers have a better chance to transfer to the state/collective sector if they have other family members working in that sector, but the association between a worker's destination of job shifts and the presence of other family members in the same

employment sector is not statistically significant for the private sector or the sector of family farming. In addition, the analyses on the job placement of young workers find that the family connection in the state/collective sector or the private sector greatly decreases the probability of working on the family farm, and young workers from farmers' families are significantly disadvantaged in finding off-farm jobs either in the state/collective sector or in the private sector. But such effects are not significant in the analyses on the job shifts of older workers. These findings suggest that the social capital obtained through family members is more critical to young workers than to older workers in affecting their access to different employment sectors. It is probably because older workers are more likely to develop and use social networks beyond the family. Compared to them, young workers are less resourceful and have to rely on their own families. Another significant finding from the analyses on the job placement of young workers is that the "social capital effect" of having other family members in the private sector has become stronger from 1989 to 1997. That contradicts the expectation that the importance of family connection in job seeking would decrease as the market economy grows. A possible explanation is that the labor market in China is still underdeveloped even in late 1990s. The lack of efficient ways to find jobs through the labor market (Knight and Yueh 2004) might have forced people to depend on informal channels, including family networks. And the expansion of the private sector increases the value of the social capital in the sector.

Gender differences on the access to different employment sectors are found in the study, but the effects of gender are more noticeable among older workers, especially those who originally worked on the family farm. For young workers, there

is little gender difference in their chances of entering into the state/collective sector or on the family farm. The likelihood of working in the private sector is not different between young women and young men in 1989, but young women have gained some advantage in entering into the private sector in 1997. This finding might reflect the increasing demand on young female workers in the private sector in the 1990s. Among older workers, it is found that female farmers are less likely to leave the farm and move to the state/collective sector or to the private sector than are male farmers. Furthermore, married women are less likely to transfer to the private sector than are married men. However, the possibility of leaving the state/collective sector or leaving the private sector is not different between female workers and male workers. And there is no gender difference in the chances of moving to the state/collective sector from the private sector or moving to the private sector from the state/collective sector. In addition, no gender effect is found on the probability of moving to family farming. Actually, women in the private sector have a lower probability to retreat to family farming than do men in the private sector. The findings reveal that the growth of the private sector does create more work opportunities for women: young women have a better chance to work in the sector than young men do; and among older workers who worked in the sector, women are less likely to move to family farming than are men. But the work opportunities in the private sector are not equally open to all women: married female workers and female farmers are less likely to transfer to the sector than are their male counterparts. The reforms in the state/collective sector do not appear to be hurting women's access to the sector except that female farmers have a lower chance to transfer to the state/collective sector than do male farmers.

Considering the lack of gender differences on job shifts between the state/collective sector and the private sector, the observed disadvantages of female farmers in transferring to the state/collective sector or the private sector may not be attributed to the demand factors of these two sectors. Rather, it is possible that the gendered division of labor within farmers' households have been keeping female farmers on the family farm.

In sum, this study finds that Chinese workers are channeled into different employment sectors according to their education levels, family background, and gender. In addition to the specific effects of these three factors on the access to the employment sectors I discussed above, this study contributes to the market transition debate on understanding the procedure of social stratification in the reform era in following aspects.

First of all, the access to different employment sectors is not equally distributed among Chinese workers and therefore should be viewed as another dimension of social stratification in contemporary China. Both achieved and ascribed characteristics have strong influences on the entry to different employment sectors among young workers and on the transfer to different employment sectors among older workers. If the differentiations in monetary and non-monetary rewards between employment sectors persist, the inequalities in the access to employment sectors, especially the ones associated with ascribed characteristics of individual workers, have far-reaching consequences on the social inequality in China.

Secondly, 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. 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 become greater in 1997. 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 2000a).

Thirdly, the influences of family background and gender after controlling the effects of education suggest the importance of social capital and gender as mechanisms of social stratification even when the market economy is expanding. Researchers should go beyond the dichotomy of political capital versus human capital in the market transition debate and pay more attention to other mechanisms of social stratification such as social capital and gender. Specifically, the effects of family background point out the importance of social capital in status attainment in reform-era China. On the one hand, the strong "social capital effects" of family background in affecting young workers' employment sectors suggest a high-degree of familial inheritance of individuals' employment sectors. On the other hand, due to the low rate of job mobility across employment sectors among older workers, it is very likely that an individual's employment sector in later life is already determined when he or she first enters the labor market. Therefore, although the impact of family background on the job shift patterns of older workers is not as strong as its impact on the employment sectors of young workers, family has been playing a significant role in the procedure of status attainment in reform-era China. This is especially important in understanding the lack of intragenerational and intergenerational mobility of farmers because the chances to work in nonagricultural sectors are significantly lower for the youths coming from farmers' families than for the youths not from farmers' families, and the chances for them to change their employment sector in later life is significantly lower than for workers of the nonagricultural sectors. Consequently, although the decollectivization of agricultural production has liberated rural labor from the control of rural collectives at the very beginning of the economic reform, the

lack of social capital in farmers' families still constrains their chances of moving to the nonagricultural sectors after two decades of the reform. This finding suggests that the procedure of social stratification during China's economic transition is not only influenced by human capital and political capital but also affected by social capital, especially the social capital gained through family members.

The effects of gender on the access to different employment sectors suggest the coexistence of opportunities and constraints for Chinese women in the economic reform era. The emergence of the private sector, especially its rapid growth in the 1990s, has increased the demand for female labor in the labor markets. Young women therefore have a better chance to work in the private sector than young men. Older women who joined the private sector in the 1980s seem to be benefiting from the expansion of the sector as well because they are less likely to transfer to family farming than male workers in the sector. However, it should be noted that the increased possibility of working in the private sector for young women does not accompany the decline of their share in the other employment sectors. Rather, it is partly because young women are less likely to stay in school than young men. The interruption of education may hurt young women in the future because recent studies found that the increase in gender wage differential in the private sector is largely caused by the differences in returns to human capital (Liu et al. 2000). Additionally, although young women have a better chance to find a job in the private sector than young men, and the state/collective sector is equally accessible to young women and young men, young women may suffer from the persistent gender wage gap in both sectors, as women workers have experienced in other East Asia economies (Seguino

2000). Moreover, the gender dynamics within households have put female farmers in the disadvantageous position: their chances of moving to off-farm jobs are much lower than their male counterparts. Therefore, as suggested by Whyte (2000), the forces underlying the gender stratification in contemporary China can be conflicting and contradictory. Plus, those forces do not uniformly affect women. Older married women may face more discrimination in the labor market and are more likely to be constrained by the unequal gender relationships within family than young single women.

There are a few limitations of this study. First, the CHNS data is not nationally representative data. In the analyses in Chapter 5 and Chapter 6, the province variables show strong effects on influencing individuals' chances of working in different employment sectors. That means the economic structures of the surveyed provinces have determined the employment opportunities faced by the workers in the data. Therefore, we need to be aware of the bias of the CHNS data when interpreting the findings and compare the findings with other researches. Secondly, the panel data of older workers suffer from the problem of attrition. Since the lost cases are possibly workers who have emigrated from the survey community, the overall rate of job mobility across employment sectors is probably underestimated in this study. Considering that the workers who had left the survey by 1997 are more likely to be in an advantageous position in China's labor market—they 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 members working in the

state/collective sector, the differentiations on job mobility caused by education, family background, and gender are possibly underestimated. Thirdly, since the CHNS data do not collect any information on the utilization of social networks in job searching, the social capital effects of family background on influencing the workers' employment sectors are inferential. It is possible that the similarities of unmeasured characteristics of family members (e.g. tastes, preferences, propensities of risk taking, etc.) might have some influence on the clustering of family members in the same employment sectors.

In further researches on this topic, I would be interested to examine the interactive effects of education, family background, and gender on sending workers into different employment sectors. Specifically, will the possession of social capital decrease the influences of human capital or vice versa? Are men and women affected in the same way by human capital and social capital? In addition, the importance of social capital, especially the family networks, in job finding deserves to be investigated using updated data because the urban labor market has been rapidly developing after 1997. Moreover, the gender differences in the access to employment sectors need closer attention. A longitudinal analysis on young workers might be able to answer following questions. Does the female advantage in finding jobs in the private sector sustain over time? Is it good or bad for women in the long run? Between young women who started working in the private sector early and young men who stayed in school or out of the labor force, do they have different trajectories on their career development? Lastly, as the private sector continues to grow, it is necessary to take into account the heterogeneity of the sector. As I mentioned in

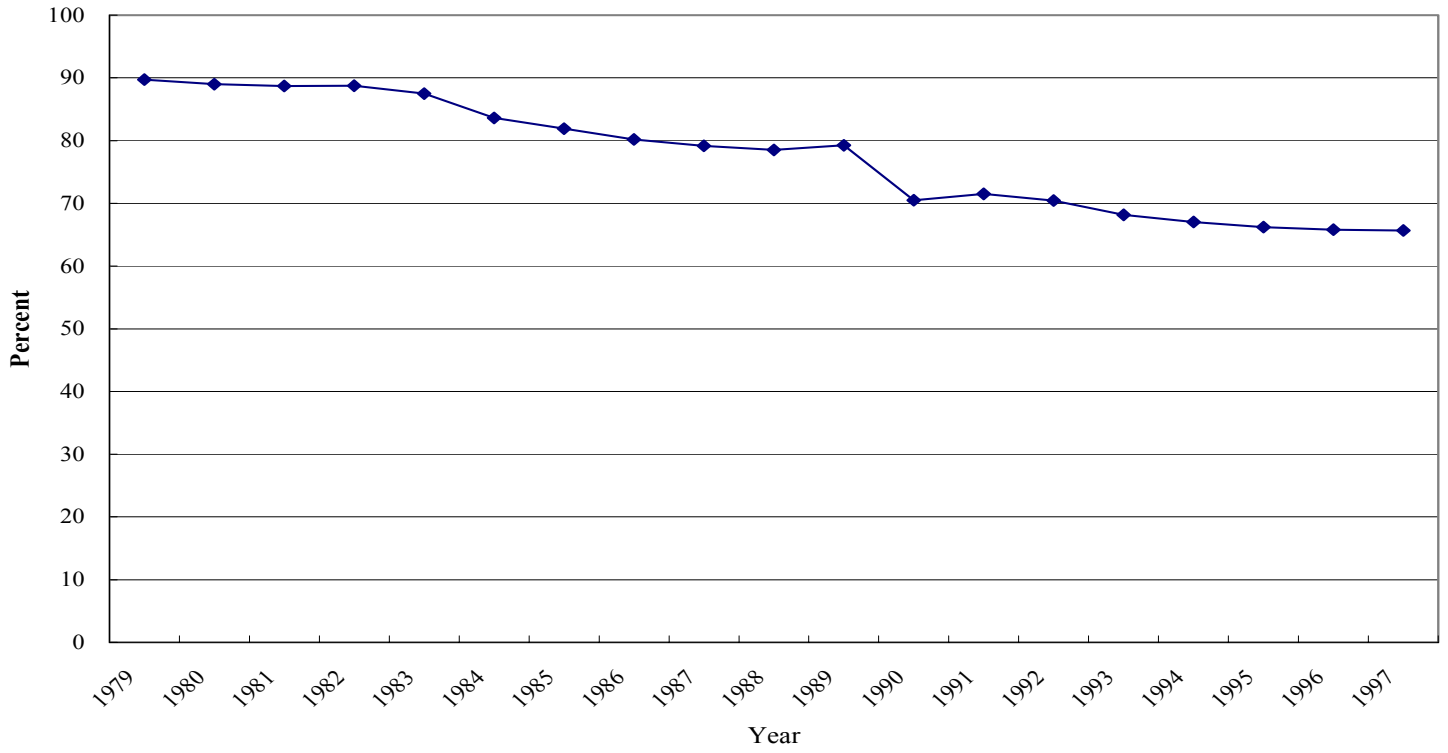
Chapter 2, the private sector is a diversified one composed of jobs ranging from well-paid positions in foreign or joint venture firms to self-employment in the informal economy. The factors facilitating the entry to the joint venture firms might be different from the factors assisting self-employment.

Table 2.1 Number (in millions) of Rural Employees: 1979-1997

Year	Total Rural Labor Force	In Agricultural Prodcution
1979	310.3	278.4
1980	318.4	283.3
1981	326.7	289.8
1982	338.7	300.6
1983	346.9	303.5
1984	359.7	300.8
1985	370.7	303.5
1986	379.9	304.7
1987	390.0	308.7
1988	400.7	314.6
1989	409.4	324.4
1990	472.9	333.4
1991	478.2	341.9
1992	483.1	340.4
1993	487.8	332.6
1994	487.9	326.9
1995	488.5	323.4
1996	490.4	322.6
1997	493.9	324.3

Source: State Statistical Bureau (1996, 1998), China Labor Statistical Yearbook.

Figure 2.1 Percentage Distribution of Rural Employees in Agricultural Production: 1979-1997



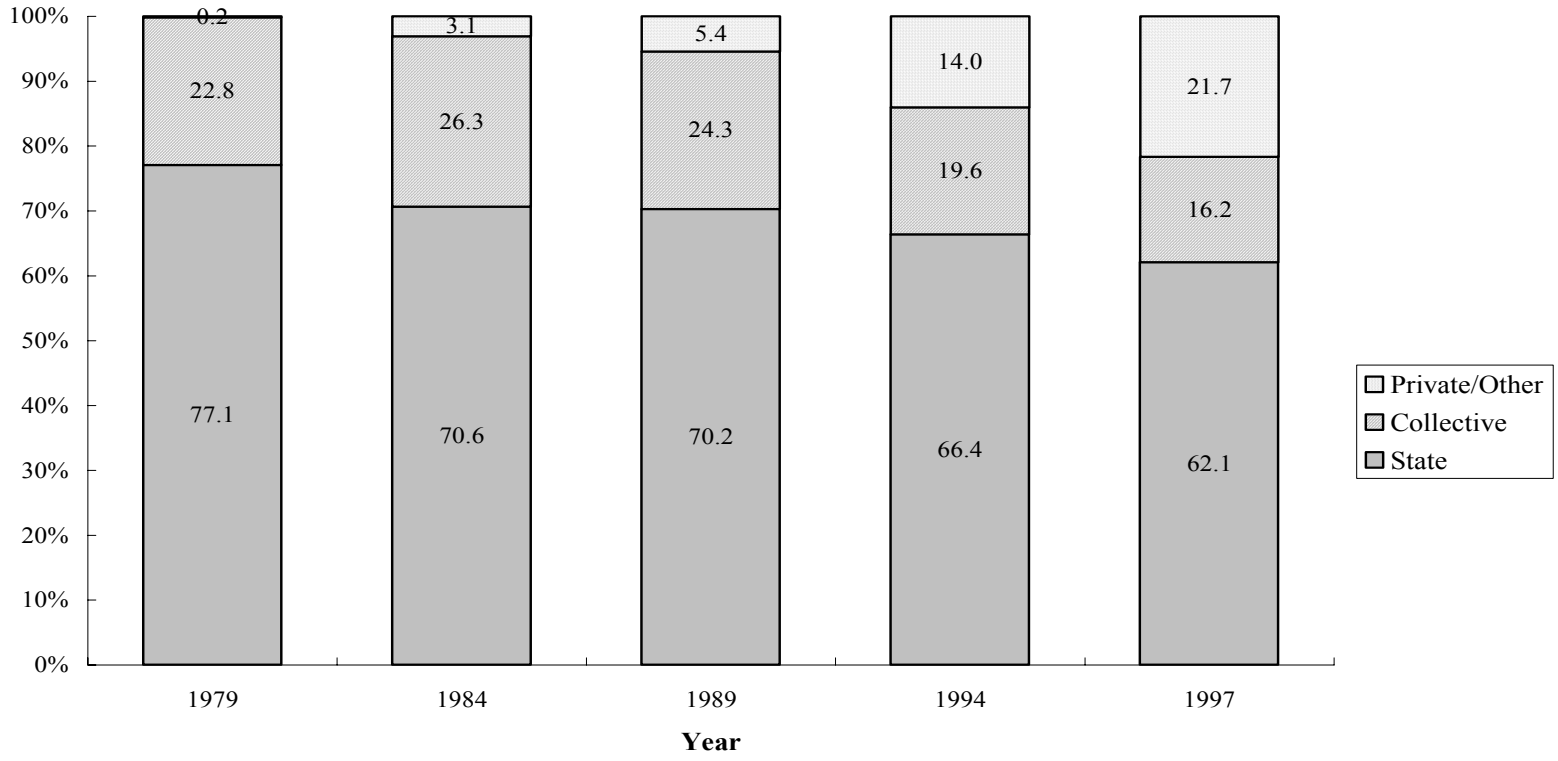
Source: State Statistical Bureau (1996, 1998), *China Labor Statistical Yearbook* .

Table 2.2 Number (in millions) of Urban Employees by Employment Sector**:** 1979-1997

Year	Total Urban Labor Force	State	Collective	Private/Other
1979	99.8	76.9	22.7	0.2
1980	105.3	80.2	24.3	0.8
1981	110.7	83.7	25.7	1.3
1982	114.9	86.3	26.5	2.1
1983	117.5	87.7	27.4	2.3
1984	122.3	86.4	32.2	3.8
1985	128.1	89.9	33.2	4.9
1986	132.9	93.3	34.2	5.4
1987	137.8	96.5	34.9	6.4
1988	409.4	99.8	35.3	7.6
1989	143.9	101.1	35.0	7.8
1990	147.3	103.5	35.5	8.3
1991	152.7	106.6	36.3	9.8
1992	156.3	108.9	36.2	11.2
1993	159.6	109.2	33.9	16.5
1994	164.1	108.9	32.1	23.0
1995	169.5	109.6	30.8	29.2
1996	171.7	109.5	29.5	32.7
1997	173.4	107.7	28.2	37.5

Source: State Statistical Bureau (1990, 1996, 1998): *China Labor Statistical Yearbook* .

Figure 2.2 The Composition of Urban Employment Sectors in the Reform Era



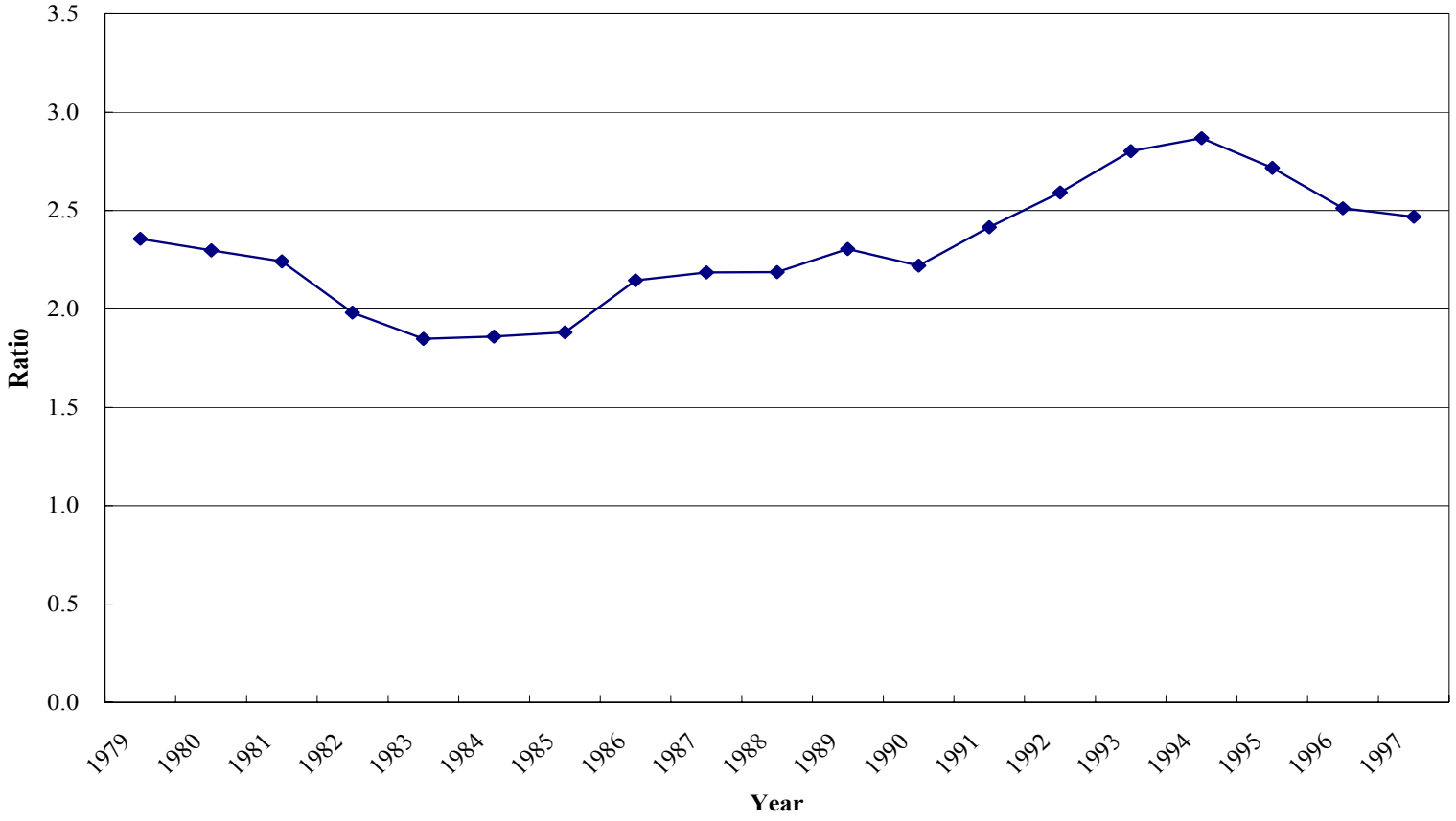
Source: State Statistical Bureau (1990, 1996,1998): *China Labor Statistical Yearbook* .

Table 2.3 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 2.3 Urban/Rural Ratio of Per Capita Annual Income: 1979-1997



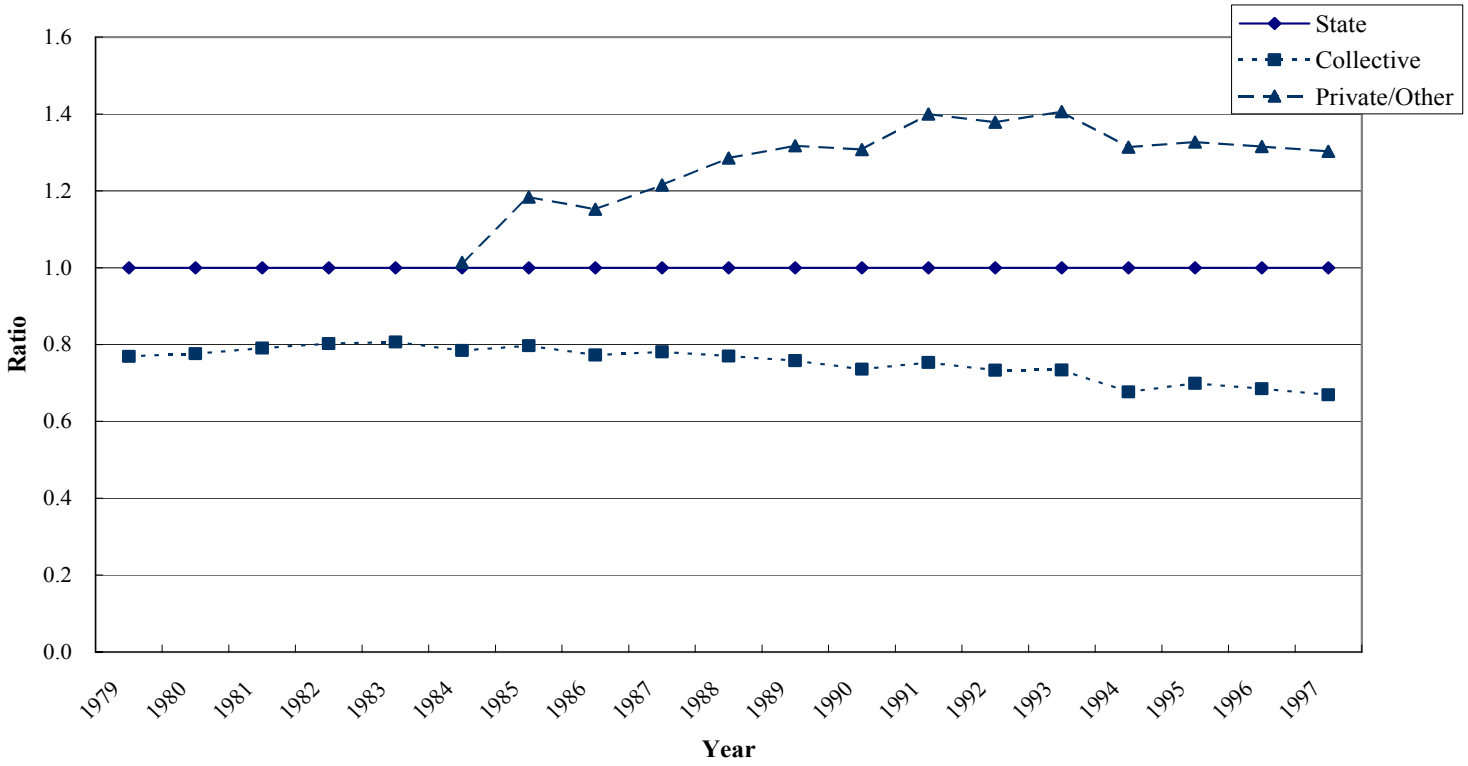
Sources: State Statistical Bureau (1986, 1991, 1995, 1998), *China Labor Statistical Yearbook*.

Table 2.4 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 2.4 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 2.5 The Hierarchy of Employment Sectors in Pre-Reform and Reform Era

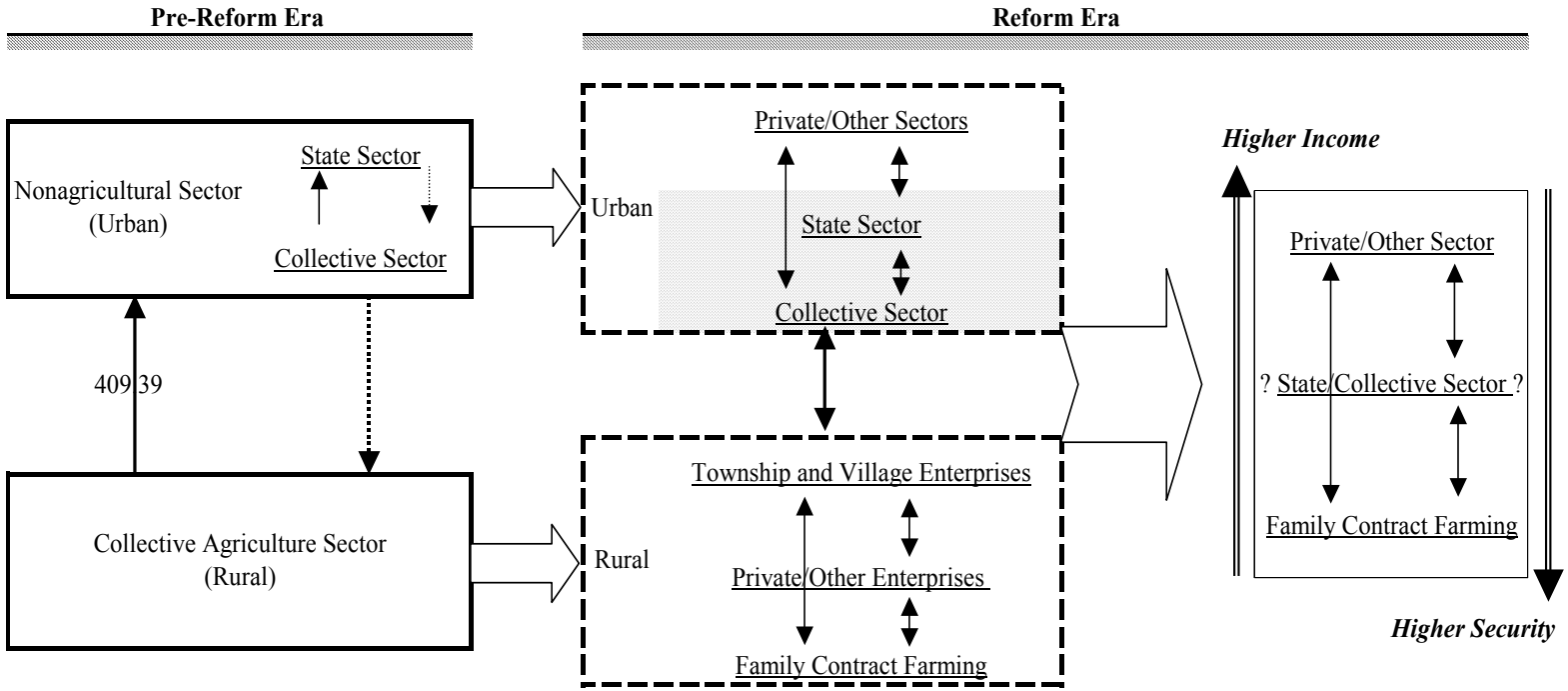
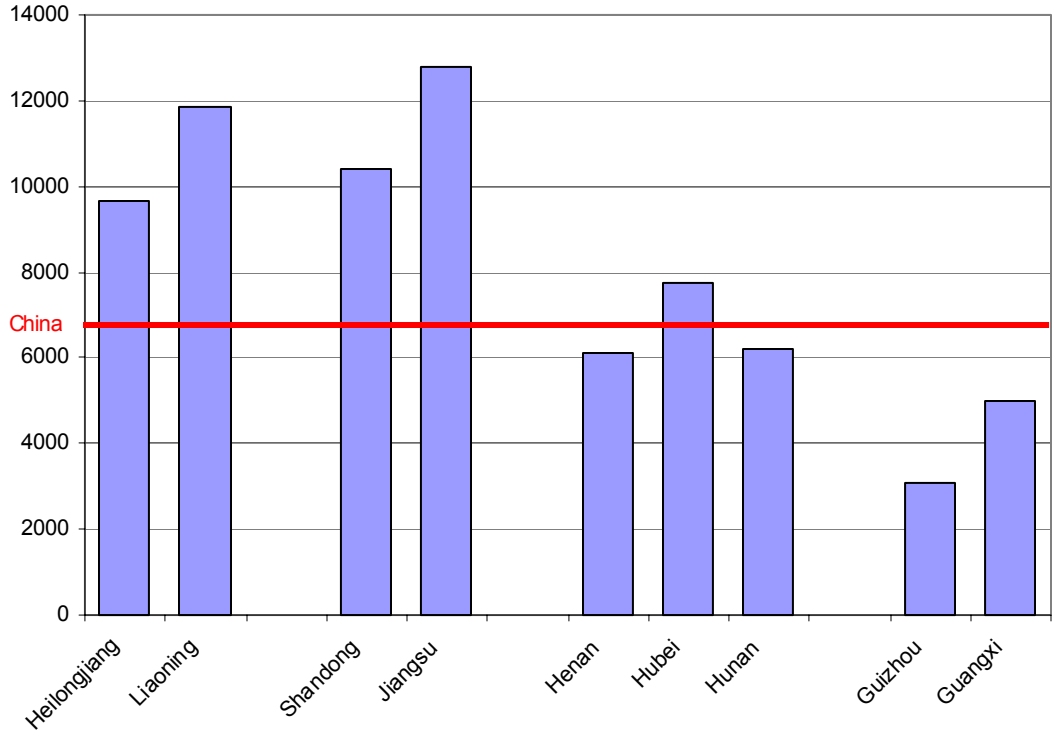


Figure 4.1 Map of China

Note: The provinces participated the CHNS are in darker color.

Figure 4.2 GDP per Capita (*yuan*) of the CHNS Provinces: 2001



Notes:

[1] The population data come from the *Communique on the Results of the 2000 Census: No. 1, No. 2* (in Chinese), http://www.stats.gov.cn/tjgb/rkpcgb/index.htm

[2] The GDP data come from the *Communique on the Economic and Social Development: 2001* (in Chinese), http://www.stats.gov.cn/tjgb/index.htm

[3] GDP per capita is calculated based on the population and GDP of each province.

Table 4.1 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 4.2 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 4.2 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 4.3 Percentage Distribution of Occupation, Education, and Residence by Employment Sectors: CHNS 1989, 1997

	1989			1997		
	State/Collective	**Private/Other**	**Farming**	**State/Collective**	**Private/Other**	**Farming**
Occupation						
Professional	12.0	3.5	------	15.7	0.6	------
Administrative/Executive/Manager	5.9	1.2	------	9.8	2.3	------
Office staff	8.8	1.4	------	14.6	1.0	------
Skilled worker	19.8	13.9	------	18.7	10.2	------
Unskilled worker	30.3	13.7	------	25.7	21.9	------
Service worker	9.7	33.4	------	2.4	31.4	------
Driver	1.4	6.4	------	9.4	8.7	------
Farmer	------	------	100.0	------	------	100.0
Other	12.1	26.6	------	3.8	23.9	------
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
N	2,802	425	3,232	1,785	1,062	2,722
Education						
No education	2.8	3.3	12.9	0.8	2.2	7.6
Primary school	16.3	28.3	40.9	7.4	16.4	34.5
Middle school	43.9	48.5	37.1	38.4	57.1	48.3
High school	24.4	18.3	9.0	29.4	18.9	9.2
College or above	12.6	1.6	0.2	24.1	5.3	0.5
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
N	2,800	431	3,219	1,792	1,077	2,709
Residence						
Urban	31.7	18.5	0.7	32.1	11.4	0.2
Suburb	16.9	12.7	16.7	18.1	19.4	16.8
Town	26.5	24.0	4.2	26.4	23.2	3.1
Village	24.9	44.8	78.3	23.4	46.1	80.0
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
N	2,805	433	3,232	1,804	1,084	2,722

Table 5.1 Percentage Distribution of Employment Status for the Youths: CHNS, 1989 and 1997

	All	By Year	
		1989	1997
Not Working, Not in School	9.5	8.1	11.3
In School	13.2	10.3	17.1
State/Collective Sector	26.2	31.2	19.6
Private/Other Sector	10.8	6.0	17.3
Farming	40.4	44.5	34.7
Total	*100.0*	*100.0*	*100.0*
N	4,156	2,388	1,768

Table 5.2 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 5.2 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 5.3 Predicted Probability of Employment Status by Year

	Predicted Probability	95% Confidence Interval	
1989 (N = 2,388)			
Not Working, Not in School	0.12	0.095	0.138
In School	0.04	0.024	0.055
State/Collective Sector	0.42	0.379	0.454
Private/Other Sector	0.09	0.075	0.111
Farming	0.33	0.292	0.378
1997 (N = 1,768)			
Not Working, Not in School	0.18	0.150	0.211
In School	0.09	0.068	0.112
State/Collective Sector	0.25	0.246	0.310
Private/Other Sector	0.28	0.167	0.234
Farming	0.20	0.221	0.281

Table 5.4 Predicted Probability of Employment Status by Education

	Predicted Probability	95% Confidence Interval	
Primary School or Less (N = 984)			
Not Working, Not in School	0.05	0.037	0.067
In School	0.00	0.001	0.008
State/Collective Sector	0.09	0.073	0.117
Private/Other Sector	0.08	0.060	0.098
Farming	0.77	0.735	0.804
Middle School (N = 2,079)			
Not Working, Not in School	0.15	0.121	0.170
In School	0.04	0.025	0.048
State/Collective Sector	0.32	0.290	0.353
Private/Other Sector	0.15	0.127	0.173
Farming	0.35	0.309	0.385
High School or More (N = 1,093)			
Not Working, Not in School	0.11	0.082	0.131
In School	0.41	0.362	0.455
State/Collective Sector	0.38	0.340	0.418
Private/Other Sector	0.09	0.064	0.106
Farming	0.02	0.013	0.030

Table 5.5 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 5.6 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 5.7 Predicted Probability of Employment Status by Family Background in the State/Collective Sector

	Predicted Probability	95% Confidence Interval	
With Other Family Member in State/Collective Sector (N = 1,849)			
Not Working, Not in School	0.15	0.124	0.169
In School	0.07	0.048	0.086
State/Collective Sector	0.66	0.624	0.687
Private/Other Sector	0.09	0.075	0.110
Farming	0.04	0.026	0.051
Without Other Family Member in State/Collective Sector (N = 2,307)			
Not Working, Not in School	0.07	0.057	0.087
In School	0.03	0.016	0.035
State/Collective Sector	0.11	0.089	0.121
Private/Other Sector	0.12	0.098	0.133
Farming	0.68	0.654	0.709

Table 5.8 Predicted Probability of Employment Status by Family Background in the Private/Other Sector

	Predicted Probability	95% Confidence Interval	
With Other Family Member in Private/Other Sector (N = 1,064)			
Not Working, Not in School	0.18	0.143	0.210
In School	0.06	0.045	0.085
State/Collective Sector	0.28	0.245	0.318
Private/Other Sector	0.38	0.339	0.426
Farming	0.09	0.071	0.118
Without Other Family Member in Private/Other Sector (N = 3,092)			
Not Working, Not in School	0.13	0.104	0.147
In School	0.05	0.034	0.069
State/Collective Sector	0.35	0.313	0.379
Private/Other Sector	0.10	0.085	0.122
Farming	0.37	0.332	0.416

Table 5.9 Predicted Probability of Employment Status by Family Background in Farming

	Predicted Probability	95% Confidence Interval	
With Other Family Member in Farming (N = 2,616)			
Not Working, Not in School	0.05	0.037	0.058
In School	0.02	0.015	0.031
State/Collective Sector	0.10	0.090	0.119
Private/Other Sector	0.08	0.071	0.098
Farming	0.74	0.719	0.762
Without Other Family Member in Farming (N = 1,540)			
Not Working, Not in School	0.22	0.193	0.249
In School	0.06	0.044	0.081
State/Collective Sector	0.61	0.577	0.640
Private/Other Sector	0.10	0.077	0.114
Farming	0.01	0.007	0.017

Table 5.10 The Interactive Effect of Year and Family Background in State/Collective Sector: 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	1.138**	0.683*	0.375	1.783**	1.408**
	(0.272)	(0.289)	(0.229)	(0.248)	(0.272)
Having Other Family Member in State/Collective Sector (*no* is omitted)					
Yes	0.351	0.537*	1.533**	0.521*	-1.012**
	(0.249)	(0.253)	(0.196)	(0.239)	(0.247)
Interactive Effect					
Year 1997*With Family Member in State/collective Sector	0.139	0.087	-0.016	-0.214	-0.198
	(0.333)	(0.328)	(0.295)	(0.303)	(0.304)
Other Variables *(results not shown)*					
Constant	2.390**	-1.424	3.151**	1.366*	-1.785**
	(0.688)	(0.747)	(0.632)	(0.673)	(0.360)
Log Likelihood	-3746.058				
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 5.11 The Interactive Effect of Year and Family Background in Private/Other Sector: 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	1.190**	0.496	0.195	1.460**	1.265**
	(0.266)	(0.281)	(0.207)	(0.259)	(0.247)
Having Other Family Member in Private/Other Sector (*no* is omitted)					
Yes	0.920**	0.565*	0.380*	1.765**	1.386**
	(0.233)	(0.260)	(0.179)	(0.242)	(0.214)
Interactive Effect					
Year 1997*With Family Member in Private/Other Sector	0.364	1.006**	0.785**	0.751*	-0.034
	(0.349)	(0.359)	(0.293)	(0.330)	(0.294)
Other Variables *(results not shown)*					
Constant	2.326**	-1.343	3.209**	1.553*	-1.656**
	(0.693)	(0.752)	(0.644)	(0.678)	(0.350)
Log Likelihood	-3739.777				
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 5.12 The Interactive Effect of Year and Family Background in Farming: 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	0.704	0.433	-0.084	1.350**	1.434**
	(0.458)	(0.470)	(0.425)	(0.454)	(0.256)
Having Other Family Member in Farming (*no* is omitted)					
Yes	-4.197**	-2.544**	-3.310**	-2.688**	0.623*
	(0.351)	(0.324)	(0.263)	(0.326)	(0.245)
Interactive Effect					
Year 1997*With Family Member in Farming	0.808	0.165	0.529	0.305	-0.224
	(0.477)	(0.460)	(0.421)	(0.458)	(0.281)
Other Variables *(results not shown)*					
Constant	2.517**	-1.450	3.282**	1.497*	-1.785**
	(0.691)	(0.759)	(0.642)	(0.681)	(0.360)
Log Likelihood	-3743.869				
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 5.13 Predicted Probability of Employment Status by Family Background in Private/Other Sector and Year

	1989			1997		
	Predicted Probability	**95% Confidence Interval**		**Predicted Probability**	**95% Confidence Interval**	
With Other Family Member in Private/Other Sector						
Not Working, Not in School	0.14	0.097	0.177	0.20	0.127	0.273
In School	0.06	0.033	0.082	0.04	0.018	0.066
State/Collective Sector	0.34	0.285	0.392	0.18	0.132	0.233
Private/Other Sector	0.25	0.195	0.304	0.48	0.371	0.586
Farming	0.22	0.163	0.275	0.10	0.061	0.134
Number of observations	*575*			*489*		
Without Other Family Member in Private/Other Sector						
Not Working, Not in School	0.09	0.067	0.121	0.20	0.151	0.240
In School	0.06	0.034	0.078	0.06	0.035	0.082
State/Collective Sector	0.40	0.346	0.452	0.31	0.261	0.353
Private/Other Sector	0.07	0.050	0.097	0.20	0.160	0.241
Farming	0.38	0.320	0.435	0.24	0.188	0.289
Number of observations	*1,813*			*1,279*		

Table 5.14 The Interactive Effect of Year and Gender: 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	1.600**	0.762**	0.323	1.422**	1.100**
	(0.283)	(0.290)	(0.220)	(0.253)	(0.245)
Gender *(male is omitted)*					
Female	0.531**	0.040	-0.160	-0.497*	-0.337
	(0.202)	(0.213)	(0.153)	(0.210)	(0.200)
Interactive Effect					
Year 1997*Female	-0.730**	-0.064	0.102	0.668*	0.565*
	(0.276)	(0.285)	(0.234)	(0.266)	(0.270)
Other Variables *(results not shown)*					
Constant	2.084**	-1.469*	3.172**	1.676*	-1.496**
	(0.691)	(0.745)	(0.632)	(0.667)	(0.345)
Log Likelihood	-3735.647				
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 5.15 Predicted Probability of Employment Status by Gender and Year

	1989			1997		
	Predicted Probability	**95% Confidence Interval**		**Predicted Probability**	**95% Confidence Interval**	
Male						
Not Working, Not in School	0.08	0.055	0.099	0.19	0.153	0.231
In School	0.04	0.028	0.062	0.11	0.079	0.132
State/Collective Sector	0.41	0.366	0.456	0.26	0.223	0.301
Private/Other Sector	0.11	0.086	0.141	0.25	0.209	0.288
Farming	0.35	0.305	0.404	0.19	0.155	0.230
Number of observations	*1,181*			*930*		
Female						
Not Working, Not in School	0.16	0.127	0.191	0.17	0.133	0.206
In School	0.03	0.018	0.051	0.07	0.050	0.099
State/Collective Sector	0.42	0.371	0.468	0.24	0.197	0.280
Private/Other Sector	0.07	0.052	0.093	0.31	0.265	0.354
Farming	0.32	0.260	0.370	0.21	0.166	0.249
Number of observations	*1,207*			*838*		

Table 6.1 Distribution of Job Shifts across Employment Sectors by Original Employment Sectors: CHNS, 1989 to 1997

	No Change	Changed		
		To state/collective	To private/other	To family farming
All (N = 2,510)	75.0	5.1	11.5	8.4
By Original Sector				
State/Collective Sector (N = 888)	66.8	------	12.8	20.4
Private/Other Sector (N = 126)	59.5	16.7	------	23.8
Family Contract Farming (N = 1,496)	81.2	7.2	11.7	------

Table 6.2 Logit Models of Job Change across Employment Sectors: CHNS, 1989 to 1997

	Model 1	Model 2	Model 3	Model 4
	Changed	Moved to state/collective	Moved to private/other	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 6.2 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%

Table 6.3 The Gender Effects on Changing Employment Sector: Without and With Interactions

	Model 1 No Interaction	Model 2 With Interaction of Gender and Marital Status	Model 3 With Interaction of Gender and Employment Sector
Gender *(male is omitted)*			
Female	-0.386**	0.896	0.146
	(0.112)	(0.614)	(0.166)
Marital Status in 1989 *(unmarried is omitted)*			
Married	-0.197	0.070	-0.159
	(0.316)	(0.354)	(0.313)
Employment Sector in 1989 *(state/collective sector is omitted)*			
Private/Other	0.144	0.122	0.216
	(0.238)	(0.238)	(0.278)
Farming	-0.776**	-0.769**	-0.424*
	(0.171)	(0.172)	(0.188)
Interactive Effects			
Female*Married		-1.319*	
		(0.623)	
Female*Private/Other			-0.242
			(0.457)
Female*Farming			-0.975**
			(0.216)
Other Variables *(results not shown)*			
Constant	-2.416**	-2.686**	-2.714**
	(0.476)	(0.493)	(0.486)
Log Likelihood	-1272.312	-1270.333	-1261.689
Observations	2,510	2,510	2,510

Notes: All the 3 models include all the independent variables in Model 1 of Table 6.2.
Robust standard errors in parentheses
* significant at 5%; ** significant at 1%

Table 6.4 Predicted Probability of Changing Employment Sector by Gender and Marital Status

	Predicted Probability	95% Conf. Interval	
Married Men (N = 1,290)	0.27	0.240	0.293
Unmarried Men (N = 61)	0.28	0.159	0.392
Married Women (N = 1,143)	0.18	0.154	0.199
Unmarried Women (N= 16)	0.42	0.172	0.678

Table 6.5 Predicted Probability of Changing Employment Sector by Gender and Employment Sector

	Predicted Probability	95% Conf. Interval	
Men from State/Collective Sector (N = 550)	0.29	0.246	0.330
Men from Private/Other Sector (N = 84)	0.42	0.303	0.529
Men from Family Farming (N = 717)	0.24	0.209	0.272
Women from State/Collective Sector (N= 338)	0.30	0.248	0.354
Women from Private/Other Sector (N = 42)	0.32	0.172	0.476
Women from Family Farming (N = 779)	0.13	0.104	0.149

Table 6.6 The Gender Effects on Moving to the State/Collective Sector: Without and With Interactions

	Model 1 No Interaction	Model 2 With Interaction of Gender and Marital Status	Model 3 With Interaction of Gender and Employment Sector
Gender *(male is omitted)*			
Female	-0.706**	0.599	0.689
	(0.247)	(1.213)	(0.664)
Marital Status in 1989 *(unmarried is omitted)*			
Married	0.516	0.826	0.648
	(0.528)	(0.623)	(0.524)
Employment Sector in 1989 *(private/other sector is omitted)*			
Farming	-0.598	-0.577	-0.171
	(0.345)	(0.342)	(0.404)
Interactive Effects			
Female*Married		-1.335	
		(1.232)	
Female*Farming			-1.576*
			(0.695)
Other Variables *(results not shown)*			
Constant	-2.254	-2.596*	-3.139*
	(1.164)	(1.197)	(1.237)
Log Likelihood	-379.831	-379.422	-376.947
Observations	1,622	1,622	1,622

Notes: All the 3 models include all the independent variables in Model 2 of Table 6.2.
Robust standard errors in parentheses
* significant at 5%; ** significant at 1%

Table 6.7 Predicted Probability of Moving to the State/Collective Sector by Gender and Employment Sector

	Predicted Probability	95% Conf. Interval	
Men from Private/Other Sector (N = 84)	0.10	0.034	0.166
Men from Family Farming (N = 717)	0.07	0.050	0.088
Women from Private/Other Sector (N = 42)	0.11	0.002	0.220
Women from Family Farming (N = 779)	0.03	0.018	0.039

Table 6.8 The Gender Effects on Moving to the Private/Other Sector: Without and With Interactions

	Model 1 No Interaction	Model 2 With Interaction of Gender and Marital Status	Model 3 With Interaction of Gender and Employment Sector
Gender *(male is omitted)*			
Female	-0.420**	1.009	-0.022
	(0.149)	(0.689)	(0.227)
Marital Status in 1989 *(unmarried is omitted)*			
Married	-0.172	0.129	-0.169
	(0.440)	(0.484)	(0.424)
Employment Sector in 1989 *(state/collective sector is omitted)*			
Farming	0.751**	0.759**	0.991**
	(0.249)	(0.249)	(0.275)
Interactive Effects			
Female*Married		-1.474*	
		(0.703)	
Female*Farming			-0.656*
			(0.289)
Other Variables *(results not shown)*			
Constant	-2.599**	-2.918**	-2.782**
	(0.633)	(0.651)	(0.637)
Log Likelihood	-789.350	-787.765	-786.713
Observations	2,384	2,384	2,384

Notes: All the 3 models include all the independent variables in Model 3 of Table 6.2.
Robust standard errors in parentheses
* significant at 5%; ** significant at 1%

Table 6.9 Predicted Probability of Moving to the Private/Other Sector by Gender and Marital Status

	Predicted Probability	95% Conf. Interval	
Married Men (N = 1,208)	0.11	0.096	0.134
Unmarried Men (N = 59)	0.14	0.051	0.228
Married Women (N = 1,104)	0.07	0.059	0.091
Unmarried Women (N= 13)	0.28	0.052	0.503

Table 6.10 Predicted Probability of Moving to the Private/Other Sector by Gender and Employment Sector

	Predicted Probability	95% Conf. Interval	
Men from State/Collective Sector (N = 550)	0.10	0.072	0.125
Men from Family Farming (N = 717)	0.13	0.106	0.154
Women from State/Collective Sector (N= 338)	0.10	0.070	0.132
Women from Family Farming (N = 779)	0.07	0.049	0.085

Table 6.11 The Gender Effects on Moving to the Family Farming: Without and With Interactions

	Model 1 No Interaction	Model 2 With Interaction of Gender and Marital Status	Model 3 With Interaction of Gender and Employment Sector
Gender *(male is omitted)*			
Female	0.314	-0.039	0.538*
	(0.221)	(1.244)	(0.239)
Marital Status in 1989 *(unmarried is omitted)*			
Married	-0.440	-0.557	-0.499
	(0.550)	(0.640)	(0.533)
Employment Sector in 1989 *(state/collective sector is omitted)*			
Private/Other	-0.120	-0.118	0.283
	(0.337)	(0.337)	(0.371)
Interactive Effects			
Female*Married		0.365	
		(1.268)	
Female*Private/Other			-1.544**
			(0.589)
Other Variables *(results not shown)*			
Constant	-5.263**	-5.146**	-5.212**
	(1.271)	(1.315)	(1.265)
Log Likelihood	-316.012	-315.977	-313.019
Observations	1,014	1,014	1,014

Notes: All the 3 models include all the independent variables in Model 4 of Table 6.2.
Robust standard errors in parentheses
* significant at 5%; ** significant at 1%

Table 6.12 Predicted Probability of Moving to Family Farming by Gender and Employment Sector

	Predicted Probability	95% Conf. Interval	
Men from State/Collective Sector (N = 550)	0.06	0.030	0.097
Men from Private/Other Sector (N = 84)	0.18	0.092	0.266
Women from State/Collective Sector (N= 338)	0.06	0.015	0.104
Women from Private/Other Sector (N = 42)	0.04	0.002	0.083

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