

2011

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## Citation of this paper:

Gustafsson, Björn, Sai Ding. "Unemployment and the Rising Number of Non-Workers in Urban China: Causes and Distributional Consequences." CIBC Centre for Human Capital and Productivity. CIBC Working Papers, 2011-17. London, ON: Department of Economics, University of Western Ontario (2011).

Paper Revised August, 2012

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**Björn Gustafsson and DING Sai**

**Working Paper # 2011-17**

**October 2011**



***CIBC Working Paper Series***

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This working paper is available as a downloadable pdf file on our website  
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## **EIGHT**

### **Unemployment and the Rising Number of Non-Workers in Urban China: Causes and Distributional Consequences \***

Björn Gustafsson and DING Sai

## I. Introduction

Before the economic transition, almost all urban women ages 16 to 50/55 (both manual jobs and mental jobs) and urban men ages 16 to 60 worked for an income. This situation changed when China modernized and moved toward a market economy. In this chapter we show that whereas only 6 percent of those of working age who had an urban residence permit were non-workers in 1988, the proportion increased to 15 percent in 1995, to 29 percent in 2002, and to as much as 36 percent in 2007. Such a rapid change in the expenditure burden is difficult to cope with in most economies. China, however, has experienced very rapid economic growth, as well as favorable demographic changes because many young persons were entering the labor force and few children were being born. In addition, an increasing proportion of paid work in urban China was performed by rural migrants, who generally work long hours, even though they are paid less than urban residents.

The rise of non-workers in urban China is the result of various processes which to some degree have affected persons differently, both over time and in terms of age. One process that is shared with many rich countries is the rapid expansion of education since the late 1990s, leading to more young adults remaining students and not working for an income. Furthermore, during the planning era, the transition from being a student to one's first job (which often became life-long) typically did not involve periods of enforced non-work. In contrast, more recent means that school-leavers in contemporary China may experience periods of unemployment before gaining a foothold in working life, as is also the case in many rich countries. In this respect, therefore, the Hu Jintao–Wen Jiabao leadership period represent a continuation of circumstances that appeared at the end of the preceding period.

Another kind of process began in the 1990s when state and collective enterprises were restructured to function more like capitalist enterprises. Two elements were involved: restructuring ownership and abolishing permanent job tenure. The latter was carried out under the slogan “smashing the iron rice bowl” (*za tiefanwan*). In most enterprises, the goal of reducing the number of employees and increasing efficiency resulted in large-scale layoffs. In parallel, enterprises were no longer responsible for housing, pensions, health insurance, and social services. As consequence of these changes, many workers left the workforce before general retirement age. Such processes did not proceed at random. For example, unskilled workers have met increased competition from the recent large influx of rural-to-urban migrants, a situation that rarely affects skilled workers. Women and older workers are often considered less attractive potential employees and for them the option of non-work is more socially acceptable than it is for males in their prime. Furthermore, China’s economic restructuring has been a spatially uneven process, affecting some locations and cities more than others. The structural changes in the economy during the Hu–Wen period to date differ in one important respect from the changes in the years immediately preceding their leadership (when the total number of jobs in urban China decreased drastically). The Hu–Wen period so far has been characterized by increasingly more urban jobs in China as a whole, leading to a decline in employment problems, although not to the level in the 1990s before the restructuring of ownership and the abolition of permanent job tenure.

This chapter aims to increase our knowledge about non-work in urban China in several directions. At the descriptive level, it provides unprecedented details on the changed gender/age profile of work and non-work. We use large samples taken from many cities across China to study the situation in 1988, 1995, 2002, and 2007. We argue that it is meaningful to distinguish between five different categories of non-workers: students, the unemployed, the early retired, homemakers, and the residual category. Of these, the

unemployed together with the employed are regarded as a part of the labor force, and the key indicator, “the unemployment rate,” is defined as the proportion of unemployed in the labor force. In contrast, persons who are students, early retired, homemakers, or belong to a residual category of non-workers are not regarded as part of the labor force. From this it follows that the unemployment rate does not necessarily capture the entire employment problem. In the case of urban China we will illustrate that the probability that a person is in one of the following states -- students, early retired, homemaker, or the residual category -- actually is affected by the employment situation in the city.

However, at least to some extent, the determinants of being grouped in one of these five categories of not employed can be assumed to differ. In one research question we ask: What characterizes people who belong to the various categories of non-workers? Starting from the assumption that the determinants differ throughout the life cycle, we investigate the role played by gender, education, household characteristics, as well as whether the employment situation in the city where the person resides affects the probability of being in a different state of non-work, and if so, how?

As a second research question we ask: What is the economic well-being of the various categories of non-working people? The personal income of the non-worker plays a role, but also the income of the other household members as well as the expenditure burden of the household are important. We expect to find considerable variations across, as well as within, the different categories of non-workers. For example, a considerable number of students are the only children of well-off, or relatively well-off, parents, whereas other students are not as privileged. Some early-retired individuals receive relatively generous pensions and live with a partner who has above-average personal income, whereas other early-retired individuals are less fortunate in one or both of these respects. The economic situation of unemployed persons can be expected to be worse, because if it is received at all, unemployment compensation is

often meager. It is an open question whether or not the situation is similar for homemakers, which would be the case if the respondents to our survey communicate this alternative, instead of the alternative “unemployed.” Has urban China seen a reappearance of traditional housewives, i.e., spouses of well-off workers? Our research aims to provide new information about family roles and gender differences in urban China during the two decades of rapid economic expansion and structural change.

By now, a number of authors have addressed issues about the changed labor market in urban China since the introduction of the reforms. Several authors have studied issues related to laid-off workers and the unemployed. Other authors have estimated earnings or wage functions, sometimes linked to the study of the gender wage gap. There are also writings about inequalities of remuneration and of household income. In contrast to the situation in the West, we have not found much research on the transition from school to work among young adults in urban China. The same is the case for the issue of transition into early retirement. Our study has the potential of contributing to knowledge on the economic well-being of persons who are non-workers in urban China (a topic that, to the best of our knowledge, has attracted very little attention in the literature), and thereby to the literature on the changing income distribution in urban China.

Turning to our results, we show that the age at which a majority of young men begin to work increased from age 17 in 1988 to age 24 in 2007. The situation for young women is similar. Parallel to this, larger proportions of people in most age brackets did not work for pay. Furthermore, there was a clear change between 1988 and 2002 of a lowering of the ages when the person exited the labor force, but thereafter the real retirement age bounced back to be about the same in 2007 as it was in 1988. A major result is that from 1988 to 2002 there was an outspoken education and gender bias in the process of increased non-work in urban China. Among middle-aged and older workers, a low level of education and being female

profoundly increased the probability of belonging to various states of non-work in 2002. However, between 2002 and 2007, the first five years of the Hu–Wen era, more jobs were created, thereby reducing the influence of lower levels of education or of being female. In contrast, we also find that there is little indication of non-work gender differences among young persons. Furthermore, local labor-market conditions affect the probability of belonging to some state of non-work. Open unemployment is only one of the consequences of a low urban employment rate. When the employment rate is low, young adults are more likely to continue their studies, whereas middle-aged and older workers face an increased probability of retiring early, becoming a homemaker, or belonging to the residual category of non-workers.

Another major finding is that in several cases, income deficits due to non-work are cushioned most importantly by income from working household members or by transfers. Several students have parents with high personal incomes. A substantial number of those who retire early make sizable contributions to the household income with their pensions. These are important reasons why we can report that students and the early-retired are relatively evenly represented across the household income distribution. In contrast, the unemployed and homemakers are concentrated at the lower deciles of the distribution, particularly in 2002. The increased proportion of unemployed and homemakers thus directly contributed to making the distribution of income at the household level more unequal, whereas possible contributions from the increased proportion of students and the early-retired are not equally straightforward. Although during the first five years of the Hu–Wen leadership the number of jobs increased in urban China, there was also continuity in widening inequality along some dimensions. One dimension was spatial as the dispersion in employment rates across cities continued to increase. Another dimension was the continued trend toward increased gender inequality as



the wife's share of the couple's income continued to decrease, whereas the husband's contribution continued to rise.

The topic in this chapter is closely related to that in Chapter 7, which also analyzes changes in urban income inequality with an emphasis on the Hu–Wen period up to 2007 using the same data. Chapter 7 describes the development of poverty and analyzes how changes in various income components affected the development of income inequality -- topics not addressed in this chapter. Furthermore, although Chapter 7 investigates how, on the one hand, the relation between education, household size, and some other characteristics has changed, and, on the other, how income has changed, this chapter focuses on households with members who do not work.

The remainder of this chapter proceeds as follows: In the next section we describe the context and in Section III we present our data and describe how non-work varies across the life cycle for men and women during the three years under study. In the same section we also introduce five categories of non-workers. In Section IV we analyze the characteristics of the various categories. The question of the economic well-being of the various categories of non-workers is addressed in Section V. The chapter ends with a summary and a discussion of our findings.

## **II. Context and Conjectures**

Newer birth cohorts in China have considerably more education than earlier birth cohorts due to both supply and demand reasons. But the expansion has not always been smooth. For example, the data do not reveal an increasing trend in the transition rate from primary to secondary school during the 1980s (Hannum et al. 2008, p. 231). In contrast, starting at a rate of slightly over 70 percent, the transition rate went up to over 90 percent in the 1990s. At the beginning of the reform period, there were relatively few students, relative to the large

population, in universities and colleges in urban China. In 1980 as few as 5 percent of graduates from secondary schools continued to the tertiary level. In 1984 the transition rate increased to 25 percent where it remained until the end of the decade, when it then began to increase, reaching over 50 percent at the end of the 1990s. The expansion of higher education in China has been rather impressive. The number of new students enrolled in regular institutions of higher education increased from 0.7 million in 1988, to 0.9 million in 1995, to 3.2 million in 2002, and to a stunning 6.6 million in 2007.<sup>1</sup> The expansion of higher education has resulted in large costs for the public sector but a part of the costs has been shifted to the students and their parents because universities and colleges now charge tuition fees. As a result of the expansion, China's share of the world's more highly educated labor force is growing, a process that unquestionably will have global consequences.

Complementing the supply reasons, the expansion of education should also be understood from the demand side. As the Chinese economy has grown and become more complex, the job requirements faced by potential workers have become higher. This, together with the transition from a planned economy (where income disparities from education were rather small), as well as the increased competition less-qualified workers have faced from migrant workers, has meant that incentives for pursuing a longer education have become greater. Recent studies on changes in the rates of return to education in China confirm this (for example, Zhang et al. [2005] and Knight and Song [2008]). Rapid economic growth has also made it possible for parents to finance longer periods of education for their children. Working in the same direction, China's adoption of the one-child policy means that few children born in urban China since 1979 have siblings who compete for parental resources. The growth rates of spending on education typically have been higher than the growth rates of GDP. Hannum et al. (2008, p. 222) provide information for the 1994-2004 period.

The expansion of education is a major reason why young adults are entering the labor force later in urban China. Students in China typically do not work for pay during the school terms or holidays. Another difference with the West, where the school-to-work transition has attracted considerable research interest (see, for example, Ryan [2001]), is that the nature of the process of leaving school has changed dramatically. Before 1984 the government assigned jobs to graduates. Thereafter, a mixed system prevailed whereby young job-seekers could also find jobs on their own. Since 1993, however, graduates have been left entirely on their own to find employment (Zhao and Wen 2008). These changes have taken place in an environment where supply is greater than demand and, like the situation in rich countries, many school-leavers in China now have difficulties finding a first job.<sup>2</sup>

On average, urban parents are much better-off than their rural counterparts and can afford schooling fees and other educational expenses as well as the forgone income when a studying child is not economically active. Similarly, school administrations in urban areas are much richer than those in rural areas (particularly those in rural poor areas), and therefore can provide more varied opportunities for learning (Tsang and Ding 2005). As a consequence, school enrollments and education attainments vary profoundly by location (Connelly and Zheng 2003; Hannum and Wang 2006). In terms of spatial variations, to what extent does employment at the city level affect the probability of belonging to the different categories of non-workers? To what extent is there evidence that student status is more likely when employment opportunities are limited?

We are also interested in determining the extent to which intergenerational links in education activities affect the probability of non-work. During the Cultural Revolution period (1966-1976), Chinese education policy focused on eliminating the educational disparities brought about by social background. Yet such policies are now history, and the restructuring of the educational system has been portrayed as “embracing neo-liberalism” (Mok, Wong,

and Zhang 2009). Education is becoming more commercialized, public institutions are no longer entirely public, and there has been a rapid emergence of private schools. For example, in 2007 almost half of the funds for institutions of higher education came from tuition and miscellaneous sources. This was not the case in the past when fewer funds were allocated for education (NBS various years). Statistical data show that the average yearly tuition fee paid by households in 2007 was several thousand yuan, or a sum equivalent to the average household income for three to four months.<sup>3</sup> Increasingly, Chinese parents are helping their children financially, but for many the paying of tuition fees is difficult. Financing a child's educational expenditures has become a top savings objective for Chinese residents.<sup>4</sup> Thus one should expect that, as is observed almost universally, the probability of being a student in urban China today is affected by the economic situation of the parents. Turning to gender, however, it is unclear whether gender differences affect the probability of being a student. The one-child policy in urban China means that parents do not have a choice between investing in the education of a son or a daughter.

We now turn to the other major process leading to non-work, that is, the economic restructuring that resulted in both the growth of unemployment and the decline in labor-force participation. Before the mid-1990s, there was virtually no open unemployment in urban China, thus there was no need for a system of unemployment insurance. This changed, however, as central policies aimed to reduce the number of employees and to "smash the iron rice bowl." As a consequence, the number of wage earners in state SOEs and institutions and urban collectively owned units fell from 141 million in 1995 to 80 million in 2002. The huge drop of 61 million jobs in the combined state and collective sectors between 1995 and 2002 was only partly cushioned by 17 million new jobs created in other types of ownership, including 7 million jobs created from self-employment. As more jobs were lost than were

created and the work-active population increased, the employment problem among registered urbanites was exacerbated.

This situation changed between 2002 and 2007, the first years of the Hu–Wen period. Although the number of wage earners in state and collectively owned units continued to decrease, the decline was down to less than 2 million persons per year, not the almost 9 million per year as was the case during the preceding period. This means that in 2007 the state and collectively owned units together employed 73 million workers, as compared to 49 million wage earners in other ownership sectors, 33 million self-employed, and 10 million owners of private enterprises.

The employment shocks that hit urban China in the mid-1990s and for some years thereafter were particularly serious in certain localities, for less-qualified workers, among older workers, and for females (Appleton et al. 2002; Giles, Park, and Cai 2006). Although in a growing economy many displaced workers are able to find new jobs, in China the demand for labor did not keep pace with the number of school-leavers, displaced workers, and new rural-to-urban migrants. Furthermore, urban Chinese labor markets were not well developed and due to residence restrictions, geographic mobility was difficult. Hence, since the mid-1990s open unemployment has become a reality for many urban residents who have been forced to leave the labor force.

It is difficult to provide a precise picture of the extent and evolution of open unemployment and the drop in labor-force participation in urban China. Currently, there are no official, reliable, and timely countrywide labor-force surveys (comparable to those in the OECD countries) from which unemployment rates and labor-force rates can be computed annually.<sup>5</sup> However, a survey of five large cities reported the unemployment rate of urban residents, computed by international standards, to be 6.8 percent in 1996 and 11.1 percent in 2002 (Giles et al. 2006). These figures indicate an unemployment rate similar in magnitude to

that of contemporary rich countries and considerably higher than the rate of registered unemployed, which stood at 2.9 percent and 4.0 percent respectively for 1996 and 2002 (NBS various years).

Prior to the Hu–Wen period, several policy initiatives were aimed at reducing the consequences of employment problems in China. Thus in 1999 the National Unemployment Insurance Rules were extended beyond the state enterprise sector and made mandatory for all urban employees (Duckett and Hussain 2008). Funded by contributions from employers and employees, this system provided limited benefits (*xiagang butie*) or re-training (*zai jiuye peixun*) for those laid-off workers who registered and paid contributions. Some work-units provided laid-off workers with an early retirement (*zaotui*) for the years until retirement -- age 50/55 for women and age 60 for men. Another measure to ease the consequences of job losses was the creation of the *xiagang* category, a situation where workers were off-duty but still kept their ties with the work-unit. If the work-unit could afford it, the workers received a low wage and some welfare benefits (Wong and Ngok 2006).

During the period of very rapid job losses it became common for work-units to buy out middle-aged and older employees with a lump sum related to their cumulative future earnings up to regular retirement (*maiduan gonglin*). Together with those workers who had accumulated a work history of thirty years or more, they voluntarily chose to terminate their employment upon receiving a monthly stipend. A major policy shift prior to the Hu–Wen period was the expansion of the system of social assistance to urban residents, resulting in an increase in the number of recipients from fewer than 2 million in 1998 to 22 million in 2003 (NBS various years; Leung 2006; Gao, Garfinkel, and Zhai 2009; Gustafsson and Deng 2011).<sup>6</sup>

However, as labor-market conditions improved after the beginning of the Hu–Wen leadership, many of the policies affecting jobless workers changed. Work-units no longer

have *xiagang* workers, and it has been rare for work-units to buy out middle-aged and older workers with a lump sum. The *dibao* (minimum living guarantee) program is no longer expanding in terms of the number of recipients, although the number on the welfare rolls has not decreased.<sup>7</sup>

We can conclude that the income consequences of restructuring have attracted much policy-making attention. Nevertheless, the measures have not been able to counteract the trend toward greater income inequality. Results from two studies on the pre Hu–Wen period point in this direction. Based on an analysis of household income data for 1988, 1995, and 1999, Meng (2004) concludes that unemployment and other effects of the economic restructuring were the main contributors to the increase in the Gini coefficient for urban household income. Cai, Chen, and Zhou (2010) constructed panel data at the provincial level for the period from 1992 to 2003 and related measures of inequality to variables indicating SOE reform, urbanization, and globalization. They conclude that the SOE reform was the most significant factor contributing to the rise in urban inequality during the period.

To what extent has the restructuring affected men and women differently? Two ideal types describing how public policies in rich countries structure gender roles are the “breadwinner model” and the “dual-earner model.” Urban China possesses several characteristics of the latter. During the planning era, the income of women was almost as high as that of men. Similarly, the earnings of employed women in urban China during the reform period on average have been almost at the same level as those of men, and this did not change much up to the first years of the new millennium (Gustafsson and Li 2000; Démurger, Fournier, and Chen 2007; Chi and Li 2008). However, there have been signs of a rapid increase thereafter, as reported in Chapter 11. The Chinese social insurance systems provide benefits for being a worker, not for being a caregiver. When the income tax is assessed, it is based on how much

the individual worker earns, without consideration of the household characteristics. In all respects, the situation is similar to the Nordic prototypes of the dual-earner model.

In other respects, however, gender roles and the role of the family in urban China have elements of the bread-winner model. Parents in urban China cannot depend on heavily subsidized out-of-home child care or publicly funded home care for the elderly, services that tend to otherwise be women's unpaid work. Similar to the situation in southern Europe, and different from that in the Nordic countries, adult children in China typically remain members of the parental household until they marry and become parents. This means there are considerable inter-household transfers as well as a sizable demand for care-giving within urban households. It also means there is a strong demand for financial redistribution within households, as housing, food, and education expenses are generally borne by the parents. In contrast, in the Nordic countries where adult children form their own households shortly after completing secondary school, most living expenditures for college students are funded by state loans and stipends and there are no tuition fees, thereby limiting the need for parental funding.

Women (particularly married women) in urban China, as elsewhere, can be assumed to structure their lives to meet expectations to perform care-giving and thus they do not seek full-time paid work during all phases of their lives (Zhang et al. 2008; Maurer-Fazio et al. 2009). Employers and potential employers uphold this stereotype and assume that female workers are less productive; therefore, males are given preferential treatment in terms of hiring and in terms of retaining their jobs. It is thus not surprising that during periods of restructuring, spells of unemployment were longer for women than for men (Du and Dong 2009). The same authors, in an effort to weigh the relative importance of different factors leading to longer unemployment spells among women, conclude that structural and institutional factors play a more decisive role than gender preferences in contributing to



gender disparities. At the household level, the rapid withdrawal of middle-aged women, as opposed to middle-aged men, from paid employment in urban China has led to a decrease in the contribution of women to household income, thereby possibly weakening women's bargaining power within the household (Li et al. [2006] for the 1988-99 period; Li and Gustafsson [2008] for the 1995-2002 period).

Finally, we turn to the issue of spatial differences. It is well known that the process of restructuring has hit some locations in urban China rather hard, for example the northeastern part of the country, resulting in many job losses but the creation of relatively few new jobs. In other locations, such as the large metropolitan cities where local governments have more resources to combat job losses, employment problems, when viewed in terms of population size, have been less serious. Figure 8.1, derived from our data described in the next section, reports on the dispersion in employment rates at the city level. It shows that urban employment rates widened notably from 1995 to 2002. The data also show that this trend continued during the Hu–Wen period here. The Gini coefficient computed for city employment rates stood at 0.031 in 1988 and 0.032 in 1995 but increased to 0.060 in 2002 and rose further to 0.093 in 2007.<sup>8</sup>

*/Figure 8.1 about here/*

### **III. The Data and Descriptions of Non-workers**

Our data come from the urban household surveys collected from the China Household Income Project (CHIP) for 1988, 1995, 2002, and 2007. Although there were six years between the first three pairs of years, there were four years between the last two years. We have worked with data collected in the same provinces for all four years: Beijing, Shanxi, Liaoning, Yunnan, Gansu, Jiangsu, Anhui, Henan, Hubei, Guangdong, Chongqing, and Sichuan. These

samples are subsamples taken from the larger samples that the National Bureau of Statistics (NBS) uses when collecting the official household statistics that are published in the annual *Statistical Yearbook of China*. The NBS also carried out the fieldwork. The target population for the samples was registered urban residents, and did not include rural-to-urban migrants who did not have urban registrations. Our samples were collected from a varying number of cities: 158 cities in 1988, 69 in 1995, 77 in 2002, and 219 in 2007.<sup>9</sup> Further details on the sampling procedures are provided in Eichen and Zhang (1993) for the 1988 survey, Li et al. (2008) for the 1995 and 2002 surveys, and the Appendix to this volume for the 2007 survey. To a large extent, the same or similar questions were asked in all four surveys, but there were also certain differences. For example, in 2007 there were fewer questions about individual characteristics.

/Figures 8.2 – 8.3 about here/

Most of our analysis focuses on women ages between the ages of 18 and 55 and men between the ages of 18 and 60. This provided us samples of 20,426 persons for 1988, 14,238 persons for 1995, 14,304 persons for 2002, and 13,808 persons for 2007. Using our definition of work-active ages, we report that in 1988 in only 6 percent were non-workers. However, this figure increased to 15 percent in 1995, to 29 percent in 2002, and to 36 percent in 2007. Much of the reduction in paid work takes place at the beginning and end of one's working life. Figure 8.2 illustrates the situation for young males during each of the four years. In 1988, 50 percent of an age cohort worked for pay at age 17, whereas in 1995 it was age 20, and in 2002 it increased to age 23. However, between 2002 and 2007 the increase in the age at which 50 percent of an age cohort was employed was not more than one year, indicating that the speed was slowing. This means that over the two decades under study, the average age for entering the workforce rose by as much as seven years. The graphs for women (Figure 8.3) are rather similar to those for men in all the years under study.

/ Figures 8.4 and 8.5 about here /

Continuing to persons over the age of 30 in Figures 8.4 and 8.5, we find many examples of a sizable reduction in employment rates beginning in 1995. Initially, the reductions were larger among women than among men. The developments for older workers are particularly interesting. Although there were changes, they did not (as among the young adults) represent a twenty-year trend. Although the age at which half of an age group left employment, which can be considered “the real retirement age,” decreased from 1995 to 2002 by two years among men and women alike; by 2007 the real retirement age had returned to age 61 for men and age 52 for women, almost identical to the real retirement rates in 1988.

To sum up, Figures 8.2 to 8.5 show that the increase in non-work in urban China from 1988 to 2007 was due to the considerably higher age at which young adults became economically active, in combination with a larger proportion of individuals of many age brackets (particularly women) not working. However, as observed from 1988 to 2002, the trend toward a lower age when exiting the labor force, the real retirement age, was only temporary, not a long-run phenomenon. These changes are consistent with how the labor-market situation developed in urban China during those years. One can speculate that as the health of the Chinese population continues to improve, the age at which people exit the labor force will increase rather than decrease.

In what kinds of activities are non-workers of work-active age involved? Focusing on their main activities as reported by the respondents to the questionnaires, we define the following: “early retired” means that the person receives some kind of early retirement benefit and is not working, studying, unemployed, or a homemaker. The fifth state is a residual category including, for example, people who cannot work for temporary or permanent health

reasons. The operational definitions can be found in the notes to Table 8.1 in which we report the frequencies of the five categories for each of the four years under study.

/ Table 8.1 about here/

In Table 8.1 we see that in 1988 most of the non-workers belonged to the residual category, whereas less than 1 percent of the population between the ages of 18 and 55 or 60 belonged to each of the other four categories. The ongoing increases in the proportion of students were particularly rapid, reaching 11 percent by 2007. The proportion of unemployed increased rapidly between 1995 and 2002, after which it decreased but to a level higher than that in 1995. The proportion of early-retired rose to 4 percent in 2002,<sup>10</sup> whereas the proportion of respondents labeled as homemakers increased continuously, reaching 7 percent in 2007. As a consequence, measured in this way signs of a re-emergence of traditional gender roles in urban China are visible, though not massive, during the two decades under study here.

/ Table 8.2 about here /

In Table 8.2 we report the five rates of non-work for persons between the ages of 18 and 29, 30 and 45, and 46 and older by gender for each year of the study. Unsurprisingly, students are concentrated in the youngest category, which in 1995, 2002, and 2007 also had a relatively large proportion of unemployed persons. Another unremarkable finding is that there are no early-retired persons in the youngest age category in any year. Shifting to persons between the ages of 30 and 45 we find that in 1995, 2002, and 2007 unemployment was the most frequent state of non-work. In contrast, among those 46 and older we find

unemployment to be the third most frequent state of non-work. Instead, the residual category, followed by early retirement, ranks highest among this group in all three years. From Table 8.2 we also learn somewhat predictably that being a homemaker is predominantly a female activity.<sup>11</sup>

By convention, the unemployment rate is defined as the percentage of not employed persons who are actively searching for a job in the labor force. Some unemployed register at employment offices, others do not. The labor force is defined as the sum of the employed and unemployed. This means that the number of people who are not working for reasons other than unemployment do not affect the numerical value of the unemployment rate. Applying this definition to our data, we find that in 1988 the Chinese urban unemployment rate was 0.4, in 1995 it increased to 3.3 percent, and in 2002 it jumped to 11.5 percent.<sup>12</sup> Thereafter, the unemployment rate declined to 7.9 percent in 2007, still a level more than twice as high as that in 1995. This number is also twice as high as the registered unemployment rate of 4.0 percent (NBS *China Statistical Yearbook* various years) in the same year, indicating that a considerable proportion of workers searching for a job were not registered at employment offices. Our measurement of unemployment in urban China has not been harmonized with the definitions used for OECD countries. However, we find it interesting to note that taken at face value an unemployment rate in urban China of 7.9 percent is within the range, or slightly above, the mean of the unemployment rates observed in the same year for the OECD countries.<sup>13</sup>

/ Figures 8.6 and 8.7 about here/

Figure 8.6 shows the unemployment rates for men by age and Figure 8.7 shows the unemployment rates for women by age. We report that among middle-aged and older

workers, the unemployment rates for women are higher than those for men. On changes over time, we report that the unemployment rates increased for all age groups up to 2002. The highest unemployment rates were reported among young adults in 2002, as high as 22 percent for men and 34 percent for women. In contrast, the unemployment rates among people ages 46 and older were not higher than 7 percent for men and 11 percent for women in 2002.

#### **IV. Processes Leading to Non-work**

In order to better understand the factors leading to various states of non-work we conducted statistical analyses focusing on 1995, 2002, and 2007, when the largest numbers of non-workers are observed.<sup>14</sup> We split each of the samples into two; one sample with persons under the age of 30 and the other with persons aged 30 and above. This division is partly motivated due to the fact that students were only observed among the young adults and there were no early retirees in this group. Furthermore, the processes leading to non-work can be assumed to be different in certain respects between young adults and the other groups.

What kinds of patterns do we expect to find? Starting with the young adults, we hypothesize the existence of intergenerational links in education, so that the probability of being a student is positively related to the education of the parents. Furthermore, we hypothesize that the activity of being a student is more probable in cases where the city employment rate is low. The probabilities of being a student or being unemployed, respectively, are hypothesized to decrease by age. We do not expect to find clear gender differences in these probabilities.

Among middle-aged and older workers we expect to find a gender difference, meaning that being a female elevates the probability of being in all states of non-work, and this

probability was the greatest in 2002. The presence of children or of an elderly member in the household is expected to increase the probability of being a homemaker. Education is hypothesized to negatively affect the probability of belonging to various states of non-work, particularly in 2002, whereas the city employment rate is hypothesized to negatively affect the probability of belonging to various categories of non-workers.

The statistical analysis consists of estimating multinomial logit models with employed persons as the omitted category. For young adults we define three states of non-workers: students, unemployed, and other; for the latter group there are relatively few observations and a very small number of persons indicating they are homemakers. Among people aged 30 and older, we define the four states of non-workers: unemployed, early-retired, homemakers, and other. Some of the explanatory variables are the same for both samples: age, gender, and the employment rate in the city where the person resides (with the latter computed from the data). In our analyses of the young adults we also include the average years of education of the parents as explanatory variables. The specifications for persons aged 30 and older include a variable indicating the number of years of education of the person as well as a variable indicating the number of years of education of the spouse.<sup>15</sup> Furthermore, there is one dummy indicating the presence of a child in the household and another dummy indicating the presence of a person aged 65 or older in the household. Table 8A.1 in the Appendix presents descriptive statistics for the variables in the analysis of young adults and Table 8A.2 presents descriptive statistics for the variables in the analysis of middle-aged and older adults.

/ Table 8.3 about here/

Table 8.3 reports the estimates for young adults. We find that, as hypothesized, for all years in this study the probability of being a student, as well as the probability of being

unemployed, decreases with age. Similar results are found in 2002 and 2007 with respect to the probability of belonging to the “other” category. There are no indications that being a female affected the probability in any year of belonging to any of the non-work categories. In all the years of the study we find, not surprisingly, that the employment rate in the city where the respondent resides negatively affects not only the probability of being unemployed, but also, and more interestingly, the probability of being a student and the probability of belonging to the residual category. As hypothesized, we find the level of the parents’ education increases the probability that a young adult is a student. There are also indications that in 1995 and 2002 the parents’ level of education reduced the probability of being unemployed.

/ Figure 8.8 about here/

Figure 8.8 illustrates some key findings about the probability that young adults with certain characteristics would belong to the various states of non-work in each of the three years of the study. The first panel shows the probability of studying. In 1995 this probability is 41 percent for a 20-year-old male having typical characteristics (person A), whereas it is 18 percent for a 23-year-old male (person B). However, in 2007 these two predicted probabilities are as high as 75 percent and 44 percent, respectively. The figure also illustrates that the predicted probabilities vary according to the city employment rate for a typical 20-year-old man (panels C and D) as well as according to the parents’ level of education (persons E and F). Measured in this way, the variation due to the parents’ level education has a greater influence on the probability of studying than the variation in the city employment rate.

The second panel in Figure 8.8 shows how age, the parents’ level of education, and the city employment rate affect the probability of being unemployed for a typical man. It is worth



noting that comparisons between 2002 and 2007 in Figure 8.8 show a rapid decrease in the *probability* of unemployment, as opposed to Figures 8.6 and Figure 8.7 that show an increase in the unemployment *rate* between the same two years. This difference can be reconciled by the fact that the rapid expansion of education during the period led not only to a decrease in the number of employed young adults, but also, and less rapidly, to a decrease in the number of unemployed young adults. The figure also illustrates substantial differences in the probability of being unemployed based on the city employment rate. It should be noted that the predictions indicate that in 1995 and 2002 unemployment problems among 20 year-olds was concentrated among the offspring of parents with low levels of education.

/ Table 8.4 about here /

We now turn to the estimates for persons between the ages of 30 and 55 to 60, as reported in Table 8.4. We find that some coefficients are estimated with high z-values for all states for almost all the years under study. This is the case for the positive coefficients for being female and for the negative coefficients for the city employment rate. This is also the case for the negative coefficients for one's own education. The coefficients for the variables for being female and for one's own education are typically lower based on the 2007 data than they are based on the earlier data. In contrast, evidence that the level of the spouse's education will affect the state of non-work is most clear in the 2007 data. Another clear result is that the presence of a child in the household increases the probability of being a homemaker, whereas this is not the case with the presence of an elderly person in the household. Furthermore, in all years, positive coefficients for the age variable are estimated with high z-values for both the early-retired and the residual categories.<sup>16</sup>

/ Figure 8.9 about here/

Figure 8.9 illustrates some key results for the probabilities for a 50-year-old man or woman with low or high levels of education, for 1995, 2002, and 2007. It also illustrates the variation due to the city employment rate. The first panel shows a more rapid drop in the probability of employment for women with a low level of education than for men with a high level of education between 1995 and 2002. Although between those years there was a widening employment gap between men and women with low levels of education, between 2002 and 2007 the gap narrowed. In 2007 a woman with a low level of education is predicted to have a clearly higher probability of employment than she did in 2002, and in 2007 the probability of employment for a man with a high level of education is actually lower than in 2002. Finally, Figure 8.9 shows that the spatial gap in employment probabilities, consistent with the descriptive results reported in Figure 8.1, continuously widened.

The second panel in Figure 8.9 shows that the probability for being unemployed among persons aged 50 was very low in 1995 but thereafter increased substantially for both men and women with lower levels of education and continued to be low for those with higher levels of education. The figure also shows that the expansion of unemployment had a very clear spatial character that had narrowed in 2007. Compared to differences due to education and space, gender differences in the probability of being unemployed are small. The main impression from the third panel in Figure 8.9 is that over time spatial differences in the probability of retiring early were more important than gender and educational differences.

*/Table 8.5 about here/*

What do the changed employment patterns imply for gender roles? We address this question by looking at the extent to which husbands and wives contributed to the couple's earnings during the period under study. Over time, the contributions change not only due to changed employment patterns, but also due to changed patterns of remuneration and marriage.

The trend in Table 8.5 is consistent with the results of the studies we refer to in Section II, studies that capture much, but not all, of the period studied here. Whereas at the beginning of the period three-fifths of the couples' earnings were earned equally by the husbands and wives, the proportion declined to two-fifths in 2007. This development was primarily driven by the fact that a large proportion of the wives earned less than their husbands, a development most conspicuous between 1995 and 2002. By comparison, the accelerated increase in the proportion of wives who did not have any earnings is of lesser importance, but it is still visible.

#### **V. The Economic Well-being of Non-workers**

In this section we analyze the economic well-being of non-workers. For this purpose, and following usual practice when analyzing the distribution of household income, we construct the variable disposable equivalent income for each household in our dataset by adding the personal income of all the household members. We also add the income received at the household level, including income from owner-occupied housing and the minimum living guarantee (*dibao*) program.<sup>17</sup> Taxes and transfers are entered by a negative sign. During a second step, we divided the household income by the number of persons in the household to arrive at the variable for the disposable household per capita income, which we assign to all household members. In this manner, we obtained a variable defined for individuals of all ages, a variable that considers the economic situation of the household. During the next step, we examined how non-workers were represented in the various deciles of this variable in 1988, 1995, 2002, and 2007.

Figure 8.10 shows that in addition to the levels increasing across the surveys, the main difference is that the profile for 2002 deviates from those for all other years by having a very

clearly downward slope. In 2002 non-workers were concentrated in the lower deciles. However, in 2007 the profile is again more horizontal. The increase in non-work thus changed from a force toward greater inequality to a force toward greater equality. In order to better understand this finding we disaggregated the non-workers into our five categories and reported the results in separate figures for each year.

/Figure 8.10 about here /

/Figures 8.11, 8.12, 8.13, and 8.14 about here/

The main finding from Figures 8.11, 8.12, 8.13, and 8.14 is that although some categories of non-workers are rather evenly spread out over the distribution of household income, others are concentrated at the lower household incomes. Remarkably, the growing category of students is evenly represented in all deciles. This is also the case for the residual category as well as for the early-retired, though for the latter category there are rather few in the lowest decile. The other pattern is represented by the unemployed and the homemakers, two categories both disproportionately located in the lowest deciles. It thus appears that to a large extent the label “homemaker” functioned as an alternative to the category “unemployed.”

However, there are also differences across years. In 2002 as many as 57 percent of the unemployed and 59 percent of the homemakers were located in the four lowest deciles, whereas only 2 percent were located in the top decile. During that year, the average household disposable household income for homemakers was only 66 percent of the average for the entire population, and among the unemployed it was 68 percent (numbers calculated from

Table 8.6). The concentration of the unemployed at the bottom of the income distribution is similar to the situation in 2007.

*/ Table 8.6 about here/*

The next step of the analysis focuses on personal income earned by the employed and the various categories of non-workers in 1995, 2002, and 2007. For this purpose, we define personal income as that earned by males between the ages of 18 and 60 and by females between the ages of 18 to 55. The means and measures of inequality for this variable, together with the variable for the household per capita disposable income, are reported in Table 8.6. The main finding is that on average the unemployed, homemakers, and students have low personal incomes, but this is not the case for the early-retired and the residual category. The personal income among the unemployed, homemakers, and especially students is rather unequally distributed. The mean values for personal income among the unemployed and students are much lower than the mean values for the disposable income for each of the categories. In contrast, employed persons on average have lower disposable income per capita than personal income. There is thus a considerable redistribution of income taking place within urban Chinese households and, as we will see, this redistribution increased over time. Note also that the negative difference between personal income and household per capita income among employed persons is, absolutely and relatively, smaller than the corresponding positive difference among the unemployed and students. This is because the number of workers is higher than the number of non-workers.

The rapidly increasing redistribution within households also appears in the Gini for personal income among people of work-active ages and in the Gini for household disposable per capita income among the entire population. The former increased rapidly, from 0.27 in 1988, 0.32 in 1995, 0.37 in 2002, and finally 0.46 in 2007, whereas the latter more or less

remained stable, 0.23 for 1988, 0.33 for 1995, 0.32 for 2002, and 0.33 for 2007. Since 1995, the increased income inequality due to the labor market in urban China to a large extent was counteracted within the household. An important part of this story is that an ever larger proportion of young adults have no or only small personal incomes while they are studying or are unemployed and they live with their parents and are supported by their working parents.

It is important to note that a proportion of the disposable income of parents co-residing with students is used to pay school fees and other educational expenses, and thereby is not available for other expenditures. In addition, this redistribution of income taking place within the household refers to an accounting period of one year. Nevertheless, one can expect that young adults with a higher level of education will have a relatively high personal income in the future. In this way, one can expect that the higher levels of education among urban young adults in China will contribute to increased income inequality in the future.

*/ Table 8.7 about here/*

To further illustrate the importance of the redistribution of income within urban Chinese households, Table 8.7 shows the relation between the personal income of adults and the disposable household income by transition matrixes using deciles for 1988, 1995, 2002, and 2007. A rather low proportion of individuals in the first decile of personal income are also in the lowest decile of disposable household income. In 2007 the proportion was as low as 21 percent, much lower than that in 1995 or 2002, indicating the increased importance of redistribution within the households during this period. About half of the individuals in the top decile of the distribution of personal income are also in the same decile in the distribution of disposable per capita household income for both years of the study. A rather low proportion, a maximum of 1 percent, of the persons located in the top decile of personal income are located in the bottom decile of household disposable per capita income. This

illustrates that the redistribution of income within the household is more powerful in improving the lot of those with no or low personal income than in lowering the relative position of those with high personal incomes.

## **VI. Conclusions**

In this chapter we have analyzed the growth of non-work among residents in urban China in 1988, 1995, 2002, and 2007 using surveys covering large parts of the country. The period between 2002 and 2007 marks the first phase of the Hu–Wen leadership. We have reported employment rates by age and gender for each year. Furthermore, we have divided non-workers into five categories: students, unemployed, early-retired, homemakers, and a residual category. We have estimated probability models relating the state of the labor market to household variables and the city employment rate. In addition, we have examined the personal income and disposable income of non-workers and workers.

During the two decades under investigation we have seen large changes in terms of the age that a birth cohort begins to work. In 1988 at least 50 percent of the age cohort of young men was working at age 17 and of young women at age 18. However, the age for entering the labor force rose continuously, reaching as high as age 24 in 2007. This means an increase of seven or six years during the two decades under study. We also reported that among those approaching age 30, as many as about one in five were not working in 2002 and 2007, whereas nothing similar was observed in 1988. These changes have been driven by prolonged educations as well as by the unemployment that school-leavers face before finding a job. Our results have confirmed that children with parents with high levels of education study longer. Furthermore, they show that in cities with low employment, young adults are not only more likely to be unemployed, but they are also more likely to pursue their studies.

Non-work has also increased in urban China among people aged 30 and older. Compared to 1988, a larger proportion of persons in this age group were not working for pay in 2007. The restructuring of the Chinese economy that took place beginning in the mid-1990s shows up in 2002 in the lower real retirement ages, the age one leaves the labor force for good. However, as the process of reducing employment in state-owned and urban collective units slowed down and the creation of jobs in other ownership sectors accelerated in 2007 the real retirement age bounced back to about the same as that in 1988.

The changed employment prospects among middle-aged and older workers have affected women and persons with lower levels of educations more than others. In 2002 non-work had the clearest gender and education profile, a profile that was considerably weaker in 2007. Parallel to this, the dispersion in employment rates at the city level increased from 1995 to 2002, and also continued to increase thereafter. Our results show that a low city employment rate leads not only to a higher probability of open unemployment, but also to a higher probability that middle-aged and upper-middle-aged persons will retire early, will be homemakers, or will belong to the residual category of non-workers.

Our results are mixed regarding the issue of changed gender roles. On the one hand, among young adults we did not find any indication that young women were less likely than young men to study. On the other hand, there were visible, but far from massive indications of a re-appearance of traditional housewives. This is one part of the story of Chinese perceptions of females contributing less and males contributing more to a couple's earnings. Another part of this story is the increased wage gap among employed workers (for more on this see Chapter 11).

A major finding in this study is that much of the income loss due to non-work in urban China is absorbed within the household. This is consistent with findings reported in Chapter 7 that reports that impulses from the labor market were not the main contributors to the increase



in income inequality at the household level during the first years of the Hu–Wen era. We have shown that in 1995, 2002, and 2007, the relationship between personal income and household disposable per capita income was weak in urban China, and it became even weaker over time. Incomes forgone by an increasingly large number of students and unemployed youth are to a large extent provided by parents who typically have above-average personal incomes. We have also reported that those who have left the labor force as early-retired are relatively evenly spaced over the distribution of household per capita income, with the exception of an underrepresentation in the lowest decile. However, it should be noted that in 2002 and 2007 unemployed people, who were practically nonexistent in 1988 and were rather few in 1995, fared less well than other urban residents.

For policymakers who regard increased inequality in household income in urban China as a problem, the bad news is that the greater number of unemployed persons in 2002 clearly contributed to a more unequal distribution. The good news is that thereafter the size of the employment problem was reduced in size, thereby counteracting those forces leading toward increasing inequality. However, in other respects the trend toward more inequality persists. The dispersion in employment rates across cities has continued to increase. The wife's share of a couple's income has continued to decrease whereas the contribution by the husband has increased.

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Figure 8.1 City Employment Rates by Deciles, 1988, 1995, 2002, and 2007

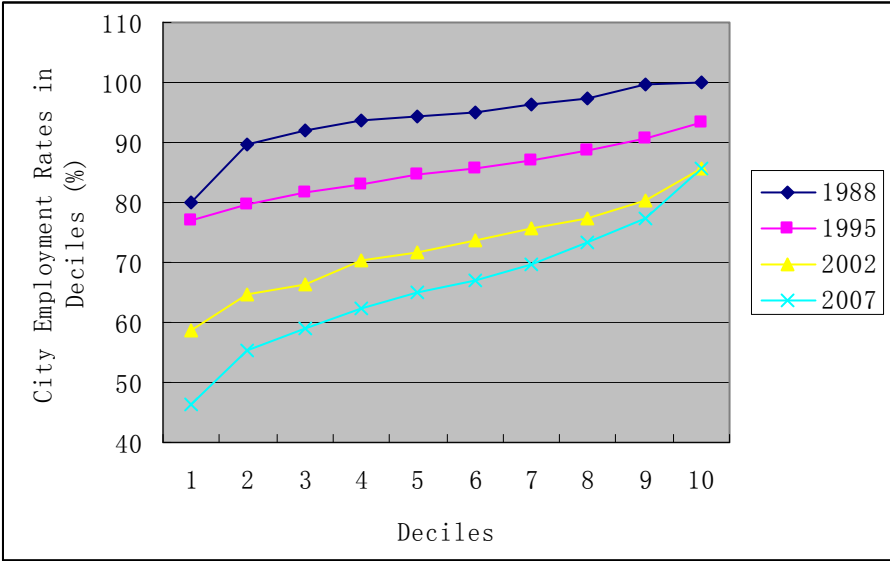
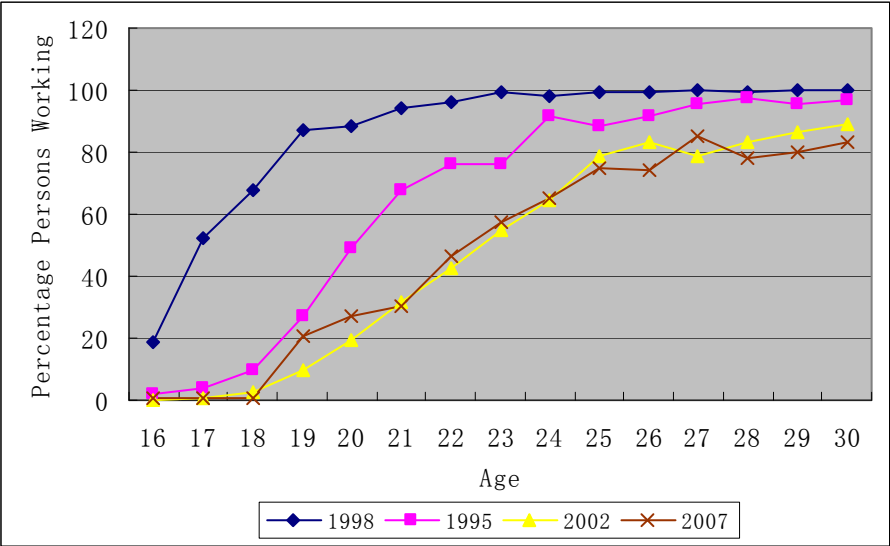
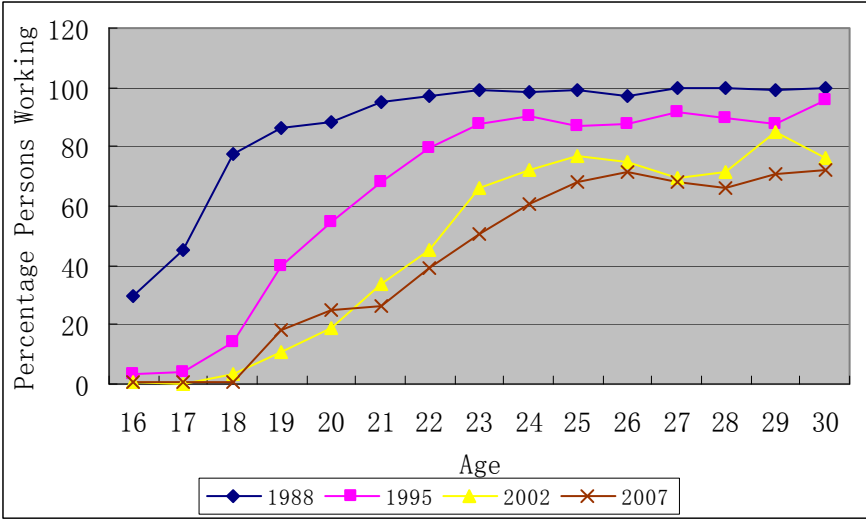


Figure 8.2 Percentage of Workers Among Males Between the Ages of 16 and 30, 1988, 1995, 2002, and 2007



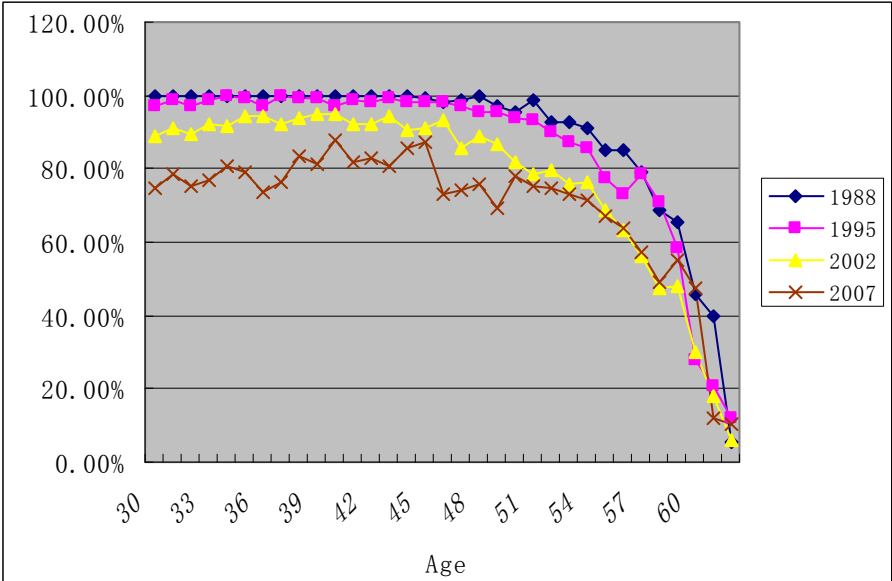
Source: Authors' calculations from the CHIP.

Figure 8.3 Percentage of Workers Among Females Between the Ages of 16 and 30, 1988, 1995, 2002, and 2007



Source: Authors' calculations from the CHIP.

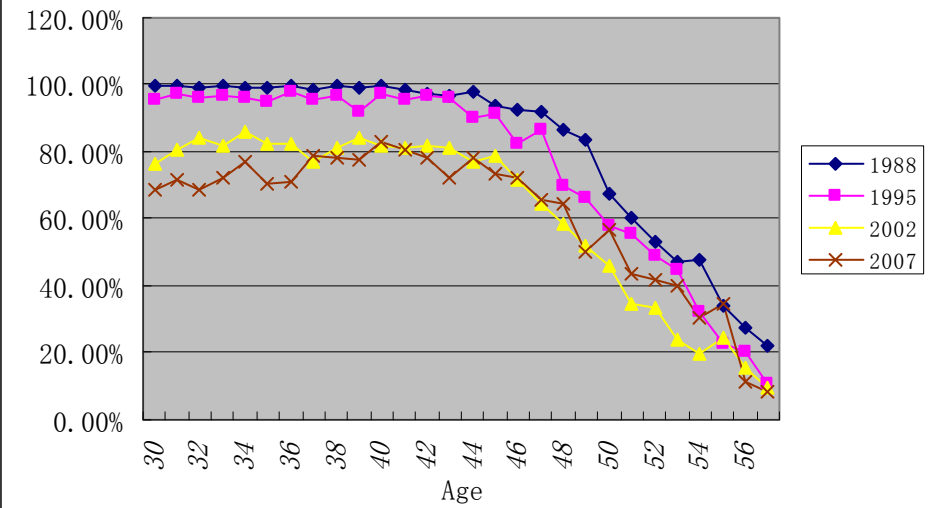
Figure 8.4 Percentage of Workers Among Males Between the Ages of 30 and 62, 1988, 1995, 2002, and 2007



Source: Authors' calculations from the CHIP.

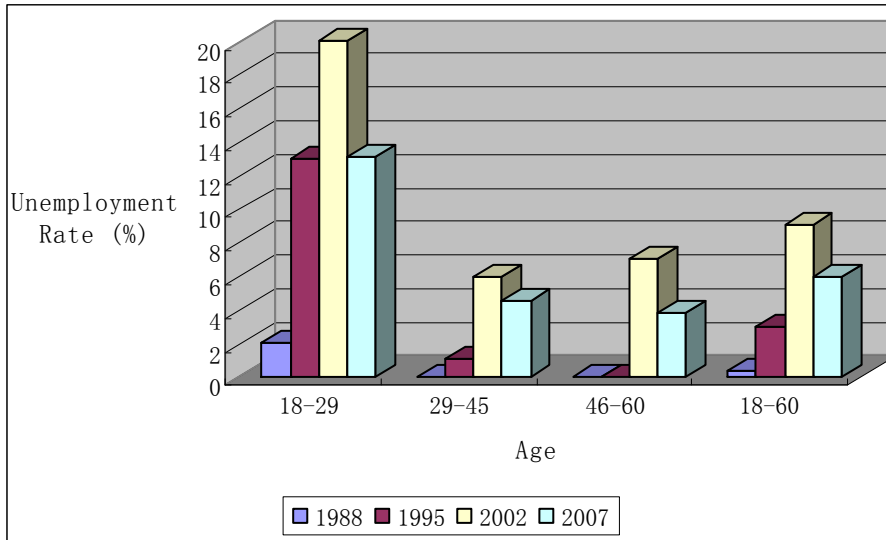


Figure 8.5 Percentage of Workers Among Females Between the Ages of 41 and 57, 1988, 1995, 2002, and 2007



Source: Authors' calculations from the CHIP.

Figure 8.6 Unemployment Rates Among Men, by Age, 1988, 1995, 2002, and 2007 (percentage of the labor force)



Source: Authors calculations from the CHIP.

Figure 8.7 Unemployment Rates Among Females, by Age, 1988, 1995, 2002, and 2007 (percentage of the labor force)

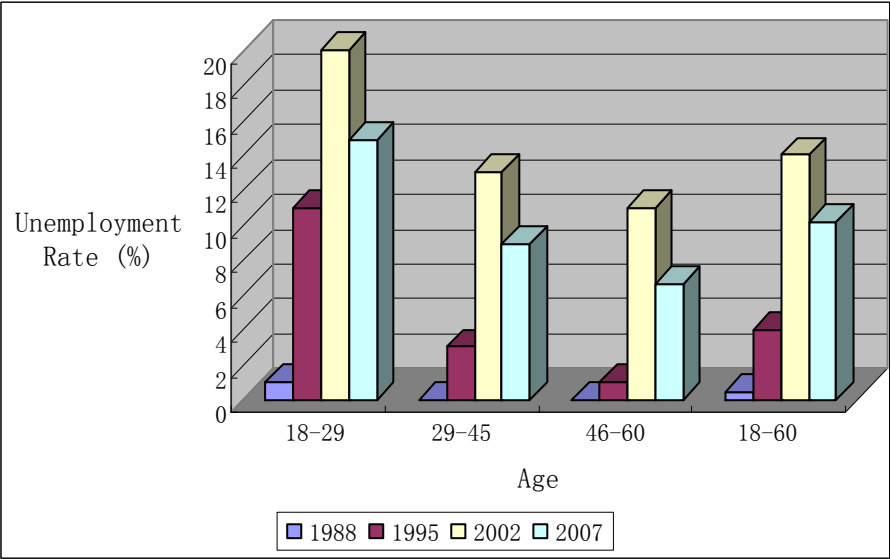
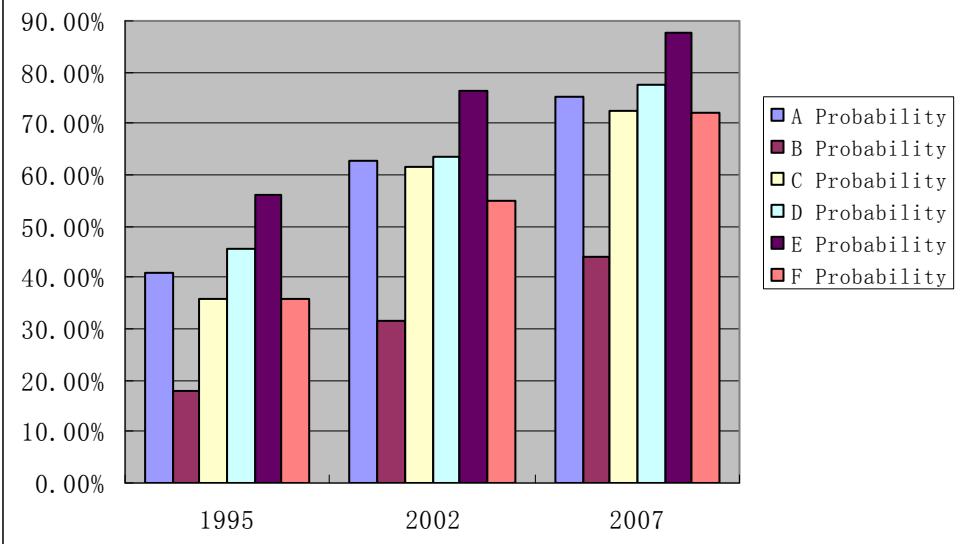


Figure 8.8 Predicted Probabilities of Various Rates of Non-work Among Persons Between the Ages of 18 and 29, 1995, 2002, and 2007

a) Probability of Studying



Source: Table 8.4.

Notes: A is a male aged 20, living in a city with an employment rate at the sample mean and whose parents' level of education is at the sample mean.

B. Differs from person A by being aged 23.

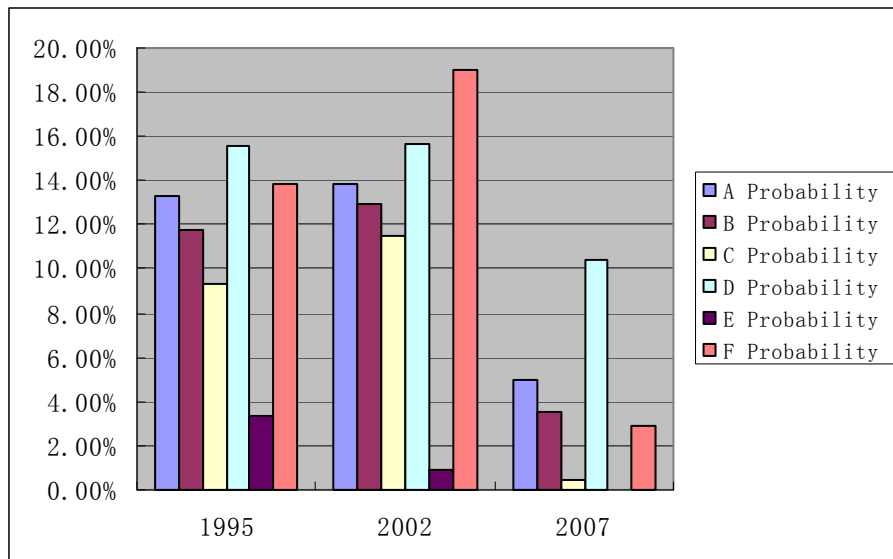
C. Differs from person A by living in a city with an employment rate equal to that observed in the top decile during the same year.

D. Differs from person A by living in a city with an employment rate equal to that observed in the bottom decile during the same year.

E. Equal to person C but the level of education of the parents is that observed in the top decile during the same year.

F. Equal to person C but the level of education of the parents is that observed in the bottom decile during the same year.

b) Probability of Being Unemployed



*Notes:* A is a male aged 20, living in a city with an employment rate at the sample mean and parents whose level of education is at the sample mean.

B. Differs from person A by being aged 23.

C. Differs from person A by living in a city with an employment rate equal to that observed in the top decile during the same year.

D. Differs from person A by living in a city with an employment rate equal to that observed in the bottom decile during the same year.

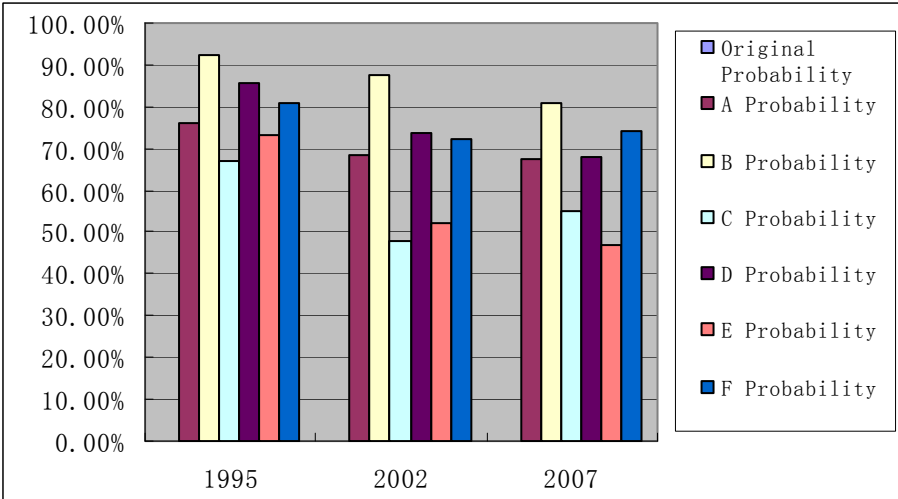
E. Equal to person C but the level of education of the parents belongs to that observed in the top decile during the same year.

F. Equal to person C but the level of education of the parents belongs to that observed in the bottom decile during the same year.

Figure 8.9 Predicted Probabilities of Employment and Various States of Non-work Among Persons Aged 50, 1995, 2002, and 2007

A female aged 50, with no children under the age of 14 or no elderly person (aged 65 or above) in the household, living in a city with an average employment rate, with her years of education and those of her husband at the mean value.

a. Probability of Being Employed

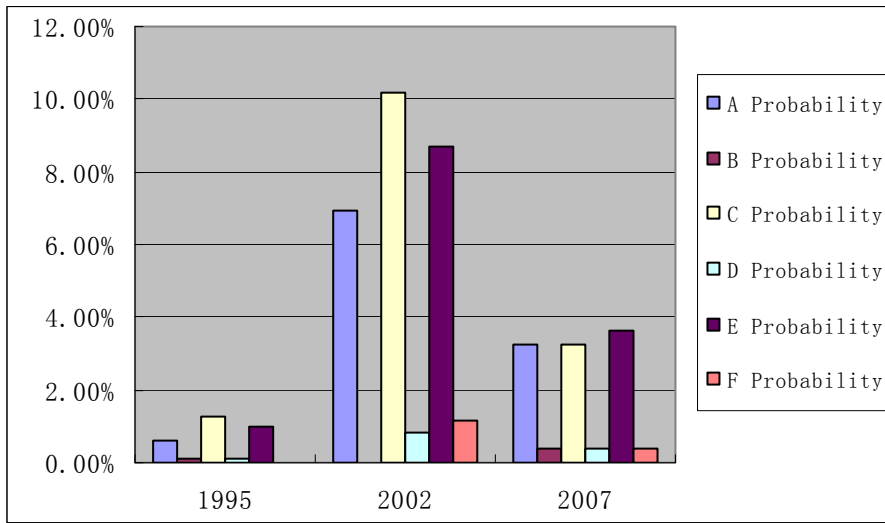


Source: Table 8.4.

Notes:

Person A is a male aged 50 with a short education. Person B is a male aged 50 with a long education. Person C is a female aged 50 with a short education. Person D is a female aged 50 with a long education. Person E is a female aged 50 with an average education living in a city with a low employment rate (the bottom deciles of the city employment rates). Person F is the same as Person E, but living in a city with a high employment rate (the top deciles of the city employment rates).

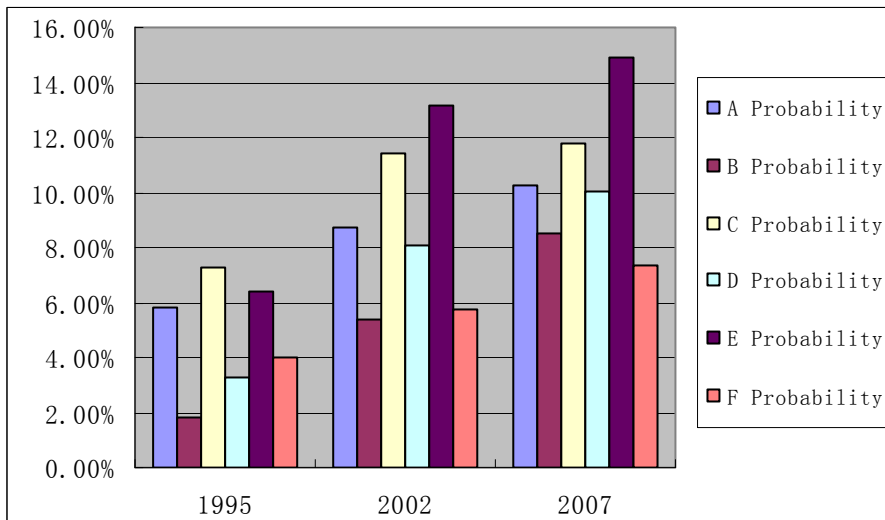
b. Probability of Being Unemployed



Notes:

Person A is a male aged 50 with a short education. Person B is a male aged 50 with a long education. Person C is a female aged 50 with a short education. Person D is a female aged 50 with a long education. Person E is a female aged 50 with an average education, living in a city with a low employment rate (the bottom deciles of the city employment rates). Person F is the same as Person E, but living in a city with a high employment rate (the top deciles of the city employment rates).

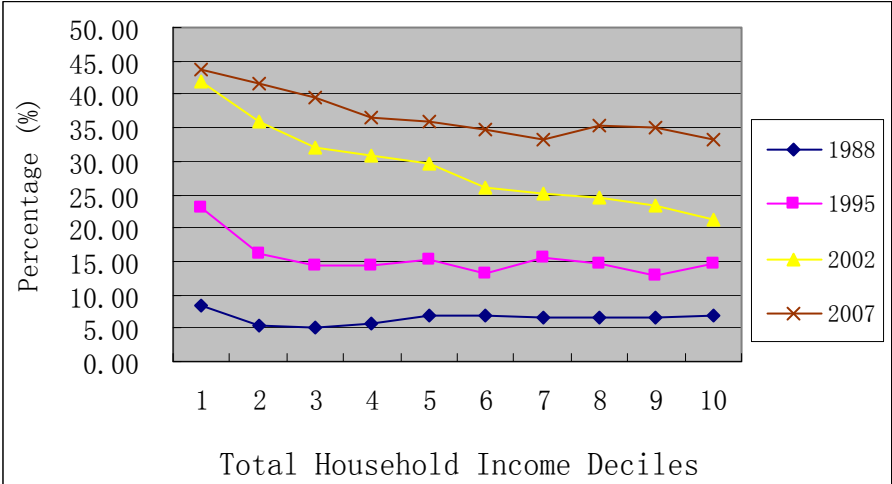
c. Probability of Being Early-Retired



Notes:

Person A is a male aged 50 with a short education. Person B is a male aged 50 with a long education. Person C is a female aged 50 with a short education. Person D is a female aged 50 with a long education. Person E is a female aged 50 with an average education, living in a city with a low employment rate (the bottom deciles of the city employment rates). Person F is the same as Person E, but living in a city with a high employment rate (the top deciles of the city employment rates).

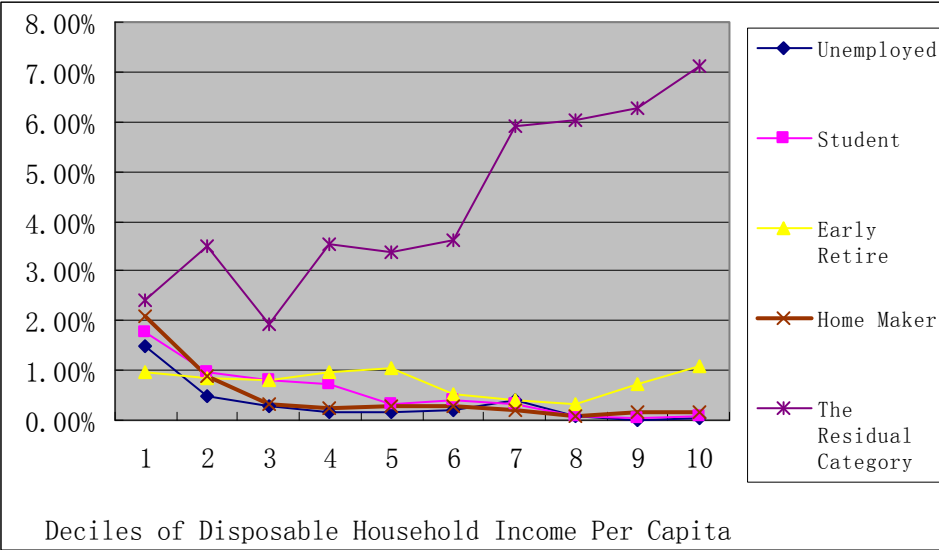
Figure 8.10 Percentages of Non-workers by Decile of Household Income, 1988, 1995, 2002, and 2007



Source: Authors' calculations from the CHIP.

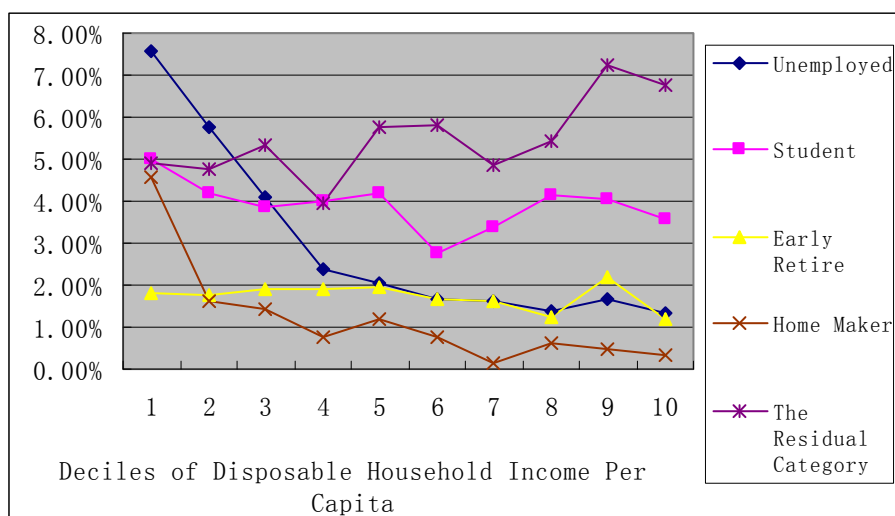


Figure 8.11 Percentage of Various Categories of Non-workers by Decile of Disposable Household Per Capita Income, 1988



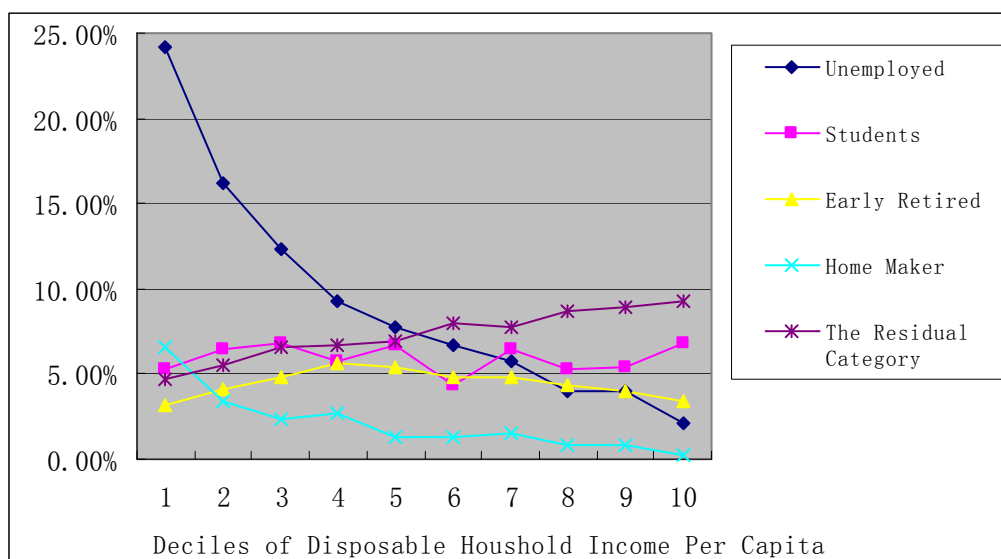
Source: Authors' calculations from the CHIP.

Figure 8.12 Percentage of Various Categories of Non-workers by Decile of Disposable Household Per Capita Income, 1995



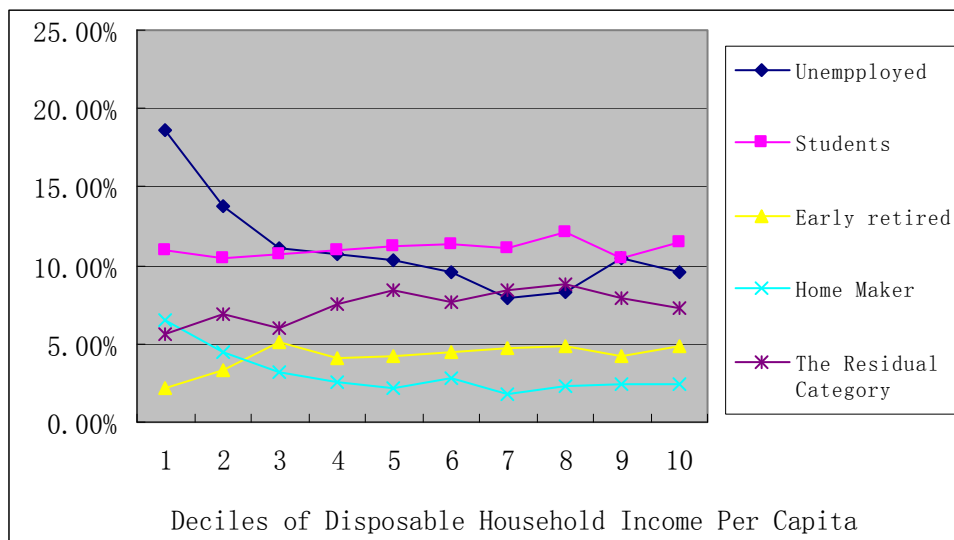
Source: Authors' calculations from the CHIP.

Figure 8.13 Percentage of Various Categories of Non-workers by Decile of Disposable Household Per Capita Income, 2002



Source: Authors' calculations from the CHIP.

Figure 8.14 Percentage of Various Categories of Non-workers by Decile of Disposable Household Per Capita Income, 2007



Source: Authors' calculations from the CHIP.

Table 8.1. *Categories of non-workers 1988, 1995, 2002, and 2007, men ages 18-60 and women ages 18-55*

	1988		1995		2002			2007
	Proportion	Persons in the sample	Proportion	Persons in the sample	Proportion	Persons in the sample	Proportion	Persons in the sample
Early-retired	0.77	157	1.73	246	4.45	637	4.16	575
Unemployed	0.33	67	2.96	421	9.24	1322	5.38	743
Students	0.56	114	3.92	558	6.02	851	11.21	1548
Homemakers	0.48	97	1.19	170	2.11	302	6.67	921
Others	4.36	890	5.48	780	7.31	1045	9.47	1307
Total non-workers	6.50	1325	15.28	2175	29.06	4157	36.89	5094
Unemployment rate defined as unemployed / (worker + unemployed)	0.38	17670	3.37	12484	11.53	11387	7.86	9457

*Source:* Authors' calculations from the CHIP.

*Notes:* In the surveys for 1988, 1995, and 2002 there are ten alternative responses to the question on employment. We classify those who reported being employed as “employed,” students as “students,” and those who stated retirement and were between the ages of 40 and 50 as “early-retired.” Persons who indicated one of the three alternatives, *xiagang*, laid-off, or unemployed, are classified as “unemployed.” The residual category consists of all other non-workers.

In the 2007 survey there are fourteen alternative responses to the question on employment. We define “employed” as those who indicated one of six alternatives: working in a state-owned unit, working in a collective unit, self-employed or owner of a private business, employee in a private business, employed after having been retired, and other-employed. Those who communicated that they were students were classified as “students,” together with persons with an undergraduate degree who were younger than age 22, 23, or 25, but indicated a status other than student. The motivation for this is that the Chinese term, *zai xiao xuesheng*, might be interpreted to refer to students at lower levels. People who referred to themselves as homemakers were classified as “homemakers,” together with those who were younger than age 46, married, and indicated that they were retired. This is motivated by the fact that those employed in state-owned enterprises who started to work at age 16 need a 30-year working career to be eligible for early retirement benefits and that people who were under age 46 in 2007 were unlikely to have been bought out with a lump sum from their work-unit. The early-retired are persons who indicated this alternative, with the exception of those described above. People who indicated one of three alternatives, waiting for a job, unemployed, or waiting for further studies, were classified as unemployed. The residual category consists of all other non-workers above the age of 18 and below the age of 40 who were not married and who referred to themselves as retired.

Table 8.2. *Non-workers by category, age, and gender, 1988, 1995, 2002, and 2007 (percentage of persons in different age categories)*

	1988		1995		2002		2007	
	Males	Females	Males	Females	Males	Females	Males	Females
18 – 29								
Students	2	2	20	18	31	29	36	31
Unemployed	1	1	10	9	17	14	6	8
Unemployment rate	1.27	1.05	11.98	10.87	33.77	22.19	11.16	15.29
Homemakers	0	0	0	0	0	0	3	6
Other non-workers	1	1	2	3	3	6	6	12
Observations	2749	2954	1584	1667	1345	1430	2383	2267
30-45								
Unemployed	1	1	10	9	6	12	4	7
Unemployment rate	0	1.21	10.22	20.16	6.12	15.17	4.54	8.89
Early-retired	0	0	0	1	0	4	0	0
Homemakers	0	1	0	1	0	1	10	15
Other	0	0	0	1	1	2	1	1
Observations	4464	4891	3441	3770	3027	3393	2425	2608
46+								
Unemployed	0	0	0	1	6	6	3	3
Unemployment rate	0	0.06	0.26	0.88	6.78	11.08	3.82	6.65
Early-retired	2	4	4	9	9	13	12	16
Homemakers	0	2	0	7	0	6	0	3
Other	10	24	13	26	9	29	11	33
Observations	2904	1944	2235	1541	2861	2248	2304	1821

*Source:* Authors' calculations from the CHIP.

*Note:* For definitions of the various non-work states, see Table 8.1.

Table 8.3. *Determinants of various states of non-work among persons ages 18-29, in 1995, 2002, and 2007*

	Student		Unemployed		Others	
	Coefficient	z-value	Coefficient	z-value	Coefficient	z-value
1995						
Age of individual	-0.912	-20.96	-0.213	-7.62	-0.008	-0.16
Gender (male=0; female=1)	-.2148	-1.60	-0.132	-0.92	0.387	1.30
Employment rate in the city	-0.054	-3.48	-0.0605	-3.61	-0.088	-2.59
Average years of education of parents	0.197	8.41	-0.067	-2.91	-0.067	-1.51
Constant	20.535	12.84	8.674	5.52	4.586	1.42
Pseudo R <sup>2</sup>	0.2499					
Number of observations	538		243		48	
2002						
Age of individual	-0.816	-24.24	-0.189	-7.33	-0.173	-4.04
Gender (male=0; female=1)	-0.165	-1.29	-0.061	-0.46	0.084	0.38
Employment rate in the city	-0.020	-2.01	-0.039	-3.98	-0.109	-7.11
Average years of education of parents	0.160	6.08	-0.108	-4.49	-0.035	-0.84
Constant	17.408	16.70	7.102	7.24	9.499	6.12
Pseudo R <sup>2</sup>	0.2635					
Number of observations	865		325		95	
2007						
Age of individual	-0.854	-20.95	-0.181	-4.85	-0.417	-4.99
Gender (male=0; female=1)	0.048	0.29	0.187	1.01	0.360	0.81
Employment rate in the city	-0.038	-3.74	-0.053	-5.10	-0.067	2.76
Average years of education of parents	0.232	5.89	-0.055	-1.41	-0.165	-1.76
Constant	19.104	16.06	6.688	5.39	12.159	4.57
Pseudo R <sup>2</sup>	0.3798					
Number of observations	716		150		22	

Source: Authors' estimates from the CHIP.

Notes:

1) The test statistic  $z$  is the ratio of the coefficient to the standard error of the respective predictor. The  $z$  value follows a standard normal distribution which is used to test against a two-sided alternative hypothesis that the coefficient is not equal to zero.

2) The note to Table 8.1 defines the various categories, with the exception that a rather small number of persons who indicated they were homemakers are included in the category "Other."

3) In the 1995 sample, 1,382 are employed, 538 are students, 243 are unemployed, and 48 belong to the residual category. The work sample of 2,211 is due to missing information for some of the variables, less than the 3,251 who were in the sample.

In the 2002 sample, 948 are employed, 901 are students, 289 are unemployed, and 66 belong to the residual category. The work sample of 2,233 is due to missing information for some of the variables, less than the 2,551 who were in the sample.

In the sample for 2007, 688 are employed, 716 are students, 150 are unemployed, and 22 belong to the other category.



Table 8.4. *Determinants of various states of non-work among persons ages 30-55/60, 1995, 2002, and 2007*

	Unemployed		Early retired		Home maker		Others	
1995	Coefficient	z-value	Coefficient	z-value	Coefficient	z-value	Coefficient	z-value
Age	-0.039	-1.74	0.146	9.54	0.238	11.35	0.496	26.78
Female	0.775	3.37	1.2405	7.24	4.190	8.69	2.877	17.07
Individual years of education	-0.184	-4.56	-0.174	-7.03	-0.356	-10.65	-0.175	-8.81
Dummy for children in the household	0.752	2.45	-0.958	-4.24	0.635	2.76	0.505	3.01
Dummy for elderly in the household	0.755	2.48	-0.128	-0.47	-0.699	-1.58	-0.252	-1.13
Education of spouse	-0.013	0.32	0.003	0.11	-0.056	-1.83	-0.009	-0.47
City employment rate	-0.069	3.04	-0.086	-5.34	-0.067	-3.09	-0.052	3.64
Constant	3.737	1.68	-1.797	-1.13	-9.285	-4.21	-22.943	-14.61
Pseudo R <sup>2</sup>	0.3464							
Number of observations	98		225		130		495	
2002								
Age	-0.011	-1.34	0.173	17.80	0.117	8.83	0.580	31.43
Female	0.872	10.31	1.318	12.96	3.568	12.75	4.044	26.46
Years of education of the individual	-0.193	-12.77	-0.151	-8.75	-0.388	-17.07	-0.195	-10.83
Dummy for children in the household	0.098	0.92	-0.387	-2.51	1.194	7.05	0.171	1.07
Dummy for elderly in the household	0.397	2.96	0.120	0.69	-0.101	-0.35	0.261	1.38
Education of spouse	-0.038	-2.62	-0.023	-1.39	-0.014	-0.58	-0.008	-0.48
City employment	-0.056	-10.35	-0.081	-12.31	-0.058	-6.24	-0.060	-8.50

rate								
Constant	3.863	6.95	-5.103	-7.02	-7.398	-6.74	-31.652	-26.04
Pseudo R <sup>2</sup>	0.2775							
Number of observations	764		608		251		831	
2007								
Age	0.0070	0.37	0.107	8.02	-0.1987	-15.38	0.651	17.55
Female	0.2896	1.10	0.677	4.11	0.5758	3.58	3.686	14.99
Years of education of the individual	-0.1914	-4.44	-0.080	-2.88	-0.0878	-2.92	-0.167	-4.85
Dummy for children in the household	0.0009	0.01	-0.295	-1.40	-1.7062	-8.86	0.189	0.67
Dummy for elderly in the household	0.0946	0.18	0.222	0.70	0.4714	1.29	0.456	1.22
Education of spouse	-0.0525	-1.19	-0.138	-5.37	-0.1689	-5.93	-0.044	-1.38
City employment rate	-0.0618	-5.12	-0.059	-7.45	-0.0671	-8.56	-0.056	-5.67
Constant	2.3994	1.94	-1.859	-2.16	12.8326	15.65	-32.248	-15.27
Pseudo R <sup>2</sup>	0.2919							
Number of observations	85		250		252		281	

*Source:* Authors' estimates from the CHIP.

*Notes:* The ages are from 30 to 60 for males and 30 to 55 for females.

The note to Table 8.1 defines the various categories, with the exception that a rather small number of persons who indicated they were homemakers are included in the category "other." In the 1995 sample, 8,945 are employed, 98 are unemployed, 225 are early-retired, 130 are homemakers, and 495 belong to the residual category. The work sample consists of 9,893 due to missing information for some of the variables, less than the 10,987 who were in the sample. In the 2002 sample, 8,171 are employed, 764 are unemployed, 251 are early-retired, 608 are homemakers, and 831 belong to the residual category. The work sample consists of 10,625 due to missing information for some of the variables, less than the 11,753 who were in the sample.

In the 2007 sample, 3,077 are employed, 236 are unemployed, 250 are early-retired, 101 are homemakers, and 281 belong to the residual category.

Table 8.5. *Economic dependency of women in urban China, 1988, 1995, 2002, and 2007 (ages 18-60 for males and ages 18-55 for females)*

	1988	1995	2002	2007
Mean dependency	0.03	0.118	0.158	0.216
Woman has no earnings (%)	0.79	1.03	2.11	5.64
Woman earns less than man (%)	25.92	30.43	41.57	44.50
Equality in earnings (%)	63.09	60.93	46.47	42.60
Woman earns more than man (%)	10.99	8.64	11.96	9.06
Woman as sole earner (%)	0.09	0.14	0.62	0.71

*Source:* Authors' calculations from the CHIP.

*Note:* Equality is defined as each partner contributing between 40 and 60 percent of the combined earnings.

Table 8.6. *Personal income and household disposable per capita income among the employed and various categories of non-workers, 1995, 2002, and 2007 (means and Gini coefficients)*

	Employed	Unemployed	Student	Early-retired	Homemaker	Others	Total
<b>1988</b>							
Personal income	1459	736	799	1171	533	612	1251
Household per capita income	1882	1238	1340	1902	1264	2145	1885
Gini index of personal income	0.246	0.275	0.262	0.271	0.553	0.675	0.277
Gini index of household per capita income	0.224	0.228	0.201	0.257	0.249	0.226	0.227
<b>1995</b>							
Personal income	6661	2933	750	4884	1268	5258	6453
Household per capita income	5841	4102	5653	5336	4555	6243	5780
Gini index of personal income	0.309	0.530	0.799	0.324	0.577	0.308	0.320
Gini index of household per capita income	0.324	0.342	0.343	0.297	0.463	0.345	0.330
<b>2002</b>							
Personal income	12100	3771	1647	8384	1952	8821	11011
Household per capita income	8636	5503	8288	7836	5219	8975	8243
Gini index of personal income	0.347	0.565	0.714	0.311	0.684	0.301	0.375
Gini index of household per capita income	0.319	0.314	0.325	0.282	0.310	0.303	0.324
<b>2007</b>							
Personal income	22283	3074	10895	16364	13878	14199	18400
Household per capita income	16703	14866	16561	17788	14349	17515	16478
Gini index of personal income	0.379	0.757	0.773	0.325	0.480	0.397	0.463
Gini index of household per capita income	0.327	0.355	0.326	0.323	0.386	0.309	0.331

Table 8.7. *Adult persons by deciles of personal income and disposable per capita household income, 1988, 1995, 2002, and 2007*

Characteristic of individual decile of personal income	Decile of per capita income										Total
<b>1988</b>	1	2	3	4	5	6	7	8	9	10	
1	22.1	15.3	11.4	9.5	9.6	8.0	7.8	6.8	6.3	3.2	100
2	19.7	14.4	11.1	10.1	8.6	6.6	8.9	9.5	7.0	4.1	100
3	15.5	15.2	14.1	12.7	9.2	7.7	8.3	7.6	6.7	3.2	100
4	10.8	13.1	13.5	13.3	11.9	10.8	7.7	7.7	6.9	4.4	100
5	10.0	10.5	12.9	12.6	12.6	12.3	9.6	8.1	6.3	5.1	100
6	7.3	10.8	9.7	12.4	11.9	12.8	10.7	9.2	7.5	7.7	100
7	6.3	7.9	10.2	11.3	12.1	13.4	13.0	9.8	9.8	6.1	100
8	4.2	6.2	7.5	9.5	10.3	12.4	13.6	13.0	12.6	10.9	100
9	3.2	4.7	6.6	5.9	8.7	9.3	12.5	15.4	18.6	15.1	100
10	0.9	2.0	3.0	2.8	5.2	6.7	7.8	12.9	18.4	40.3	100
Total	100	100	100	100	100	100	100	100	100	100	
Number of observations	2043	2038	2038	2038	2039	2041	2038	2041	2038	2038	20392
<b>1995</b>											
1	33.7	17.8	11.0	8.7	7.1	4.8	5.4	4.2	3.9	3.6	100
2	25.9	18.9	13.7	10.3	8.2	8.5	5.4	3.6	3.0	2.4	100
3	17.5	20.0	14.8	11.7	10.4	8.6	5.1	5.7	3.9	2.3	.100
4	7.9	17.2	17.4	15.2	11.9	9.6	8.5	6.0	4.4	2.0	.100
5	6.6	11.2	15.1	16.9	14.4	10.4	8.5	7.7	5.3	3.9	.100
6	3.8	6.4	12.2	14.9	16.0	14.7	13.1	8.1	6.9	4.2	100
7	2.0	5.1	8.9	10.4	14.4	17.8	14.2	12.5	10.1	5.2	100
8	2.0	1.8	4.5	7.5	9.5	14.3	19.0	19.9	14.9	6.9	100
9	0.5	1.3	2.7	3.8	5.9	8.9	15.7	19.3	21.9	19.9	100
10	0.2	0.3	0.5	0.7	2.3	2.4	5.3	13.0	25.8	49.7	100
Total	100	100	100	100	100	100	100	100	100	100	
Number of observations	1325	1326	1324	1327	1323	1324	1325	1326	1325	1323	13248.
<b>2002</b>	1	2	3	4	5	6	7	8	9	10	.
1	35.3	18.5	14.0	9.8	7.9	5.4	5.5	3.1	0.3	0.3	100
2	26.9	22.3	16.5	12.1	8.0	6.5	3.1	2.2	2.1	0.2	100
3	14.5	20.7	14.4	13.9	12.4	8.5	7.3	5.2	2.9	0.3	.100
4	8.2	15.5	17.4	15.1	14.0	10.6	7.1	6.7	3.6	1.8	.100
5	6.6	10.0	14.3	15.5	13.0	12.2	11.1	8.8	6.0	2.6	.100

6	3.3	5.8	9.9	13.4	16.5	16.2	13.6	10.8	6.1	4.7	100
7	2.3	3.8	6.1	8.4	10.8	16.0	15.4	14.8	13.0	9.7	100
8	1.3	2.0	5.0	6.4	9.9	12.6	16.8	17.5	16.0	12.5	100
9	0.8	1.0	1.1	4.3	5.8	8.9	14.1	21.3	23.3	19.4	100
10	0.7	0.5	1.2	1.2	1.7	3.2	6.00	9.7	26.9	48.5	100
Total	100	100	100	100	100	100	100	100	100	100	
Number of observations	1132	1181	1228	1267	1261	1317	1290	1313	1316	1323	12628
<b>2007</b>	1	2	3	4	5	6	7	8	9	10	
1	20.6	16.6	13.9	10.6	9.1	7.1	7.7	7.06	5.0	2.4	100
2	33.7	18.3	11.2	8.8	7.9	5.7	3.6	3.79	4.2	2.9	100
3	20.3	19.4	14.9	13.2	10.2	8.6	6.3	3.87	2.4	0.9	100
4	11.8	15.6	17.3	15.2	12.8	9.6	7.6	6.39	2.9	0.9	100
5	7.0	12.7	15.6	13.2	15.0	11.5	9.5	7.58	5.3	2.6	100
6	4.2	8.6	10.8	14.5	12.4	13.9	13.3	11.15	7.4	3.8	100
7	1.9	4.8	8.9	12.5	12.9	15.1	14.8	12.42	11.1	5.6	100
8	0.4	2.8	5.0	7.8	11.7	14.2	16.5	15.76	16.5	9.3	100
9	0.0	1.0	2.1	3.4	6.7	11.2	15.3	19.55	21.3	19.6	100
10	0.2	0.2	0.3	1.0	1.4	3.1	5.4	12.42	24.0	52.1	100
Total	100	100	100	100	100	100	100	100	100	100	
Number of observations	1346	1344	1344	1345	1347	1342	1345	1345	1345	1342	13445

Source: Authors' calculations from the CHIP.

## Appendix

Table 8A.1. *Descriptive statistics for the sample of young adults, 1995, 2002, and 2007*

	Employed	Unemployed	Student	Others
<b>1995</b>				
Age of individual	23.11	21.67	19.18	22.93
Female (%)	46.89	46.09	48.70	51.16
Employment rate in the city	84.16	83.23	84.09	82.25
Average years of parents' education	9.61	8.79	10.69	8.77
Observations	1382	243	538	48
<b>2002</b>				
Age of individual	24.04	22.83	19.80	22.93
Female (%)	48.52	48.92	47.63	49.44
Employment rate in the city	70.67	69.05	70.17	65.20
Average years of parents' education	9.64	8.86	10.5	9.54
Observations	948	325	865	95
<b>2007</b>				
Age of individual	25.42	24.4	20.25	22.82
Female (%)	46.66	50.0	47.91	54.55
Employment rate in the city	62.01	58.04	60.21	57.15
Average years of parents' education	10.71	10.44	11.84	9.91
Observations	688	150	716	22

*Source:* Authors' calculations from the CHIP.

Table 8A.2. *Descriptive statistics for the sample of middle-aged and older workers, 1995, 2002, and 2007*

	Employed	Unemployed	Early Retired	Home maker	Others
<b>1995</b>					
Age	41.54	38.83	48.22	47.95	53.76
Female	46.65	69.39	66.67	96.15	64.24
Years of education of the individual	10.62	9.0	8.65	6.18	8.55
Dummy for children in the household	58.54	78.57	13.33	31.54	17.78
Dummy for elderly in the household	6.83	13.27	7.11	4.62	7.68
Education of spouse	10.47	9.89	9.74	8.72	9.57
City employment rate	85.12	83.76	83.19	83.26	83.56
Observations	8945	98	225	130	495
<b>2002</b>					
Age	42.74	42.23	49.23	44.80	53.50
Female	42.69	61.40	56.41	94.02	71.12
Years of education of the individual	11.23	9.60	9.55	7.31	9.20
Dummy for children in the household	39.90	39.27	9.38	40.24	12.88
Dummy for elderly in the household	6.77	9.82	7.07	5.98	7.46
Education of spouse	10.94	9.98	9.80	9.61	9.89
City employment rate	71.77	69.09	67.96	69.59	69.52
Observations	8171	764	608	251	831
<b>2007</b>					
Age	44.85	45.8	49.82	38.44	55.34
Female (%)	25.74	25.88	26.40	34.13	45.55
Years of education of the individual	12.22	10.38	10.68	11.15	10.21
At least one child in the household (%)	30.55	27.06	13.20	17.46	10.68
At least one elderly person in the household (%)	3.64	4.71	5.20	3.97	4.98
Education of spouse	11.85	10.58	9.94	10.46	10.19
City employment rate	61.29	56.00	56.93	54.91	58.44
Observations	3077	85	250	252	281

*Source:* Authors' calculations from the CHIP.



\* Previous versions of this paper were presented at the Workshop on Income Inequality, Beijing Normal University, Beijing, May 2009 and May 2010; the Chinese Economist Association Annual Meeting, Xiamen, China, June 2010; the 31<sup>st</sup> General Conference of the International Association for Research on Income and Wealth, St. Gallen, Switzerland, August 2010; and the 2<sup>nd</sup> CIER/IZA Workshop on Research in Labor Economics, Bonn, October 2010. We are grateful to the participants on these occasions as well as to Terry Sicular and an anonymous referee for useful comments.

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<sup>1</sup> National Bureau of Statistics, *Zhongguo tongji zhaiyao 2011* (China Statistical Abstract 2011) (Beijing: Zhongguo tongji chubanshe, 2011), 166-167.

<sup>2</sup> The publication of the book *Ant Tribe* built on interviews by Lian Shi in September 2009 led to a discussion of living conditions among a group of university graduates in large cities. They dream of a better life but struggle with low-paying jobs, spending too much time traveling to and from work, and residing in crowded housing. See [http://en.wikipedia.org/wiki/Ant\\_tribe](http://en.wikipedia.org/wiki/Ant_tribe), accessed June 5, 2012.

<sup>3</sup> See “Lai kan gedu daxue xuefei biao zhun” (Standard University Fees in Each Region), April 4, 2007, at <http://bbs.edu5a.com/showtopic-422.html>, accessed July 23, 2011.

<sup>4</sup> See [http://www.pbc.gov.cn/publish/diaochatongjisi/193/1685/16850/16850\\_.html](http://www.pbc.gov.cn/publish/diaochatongjisi/193/1685/16850/16850_.html), accessed September 19, 2011.

<sup>5</sup> Solinger (2001) draws attention to a number of problems in defining and estimating unemployment in China. However, starting in 2009 the NBS has conducted labor-market surveys, but at the time of the editing of this text, March 2012, the results have not yet been published. There was a pilot survey in 2005 conducted by the NBS, the Ministry of Human Resources and Social Security, the Ministry of Agriculture, and the All-China Federation of Trade Unions. The results are published in State Statistical Bureau (SSB) (2006).

<sup>6</sup> In our literature review we came across very few attempts to analyze the target efficiency of the various policy measures aimed at alleviating the consequences of job losses in urban China. Furthermore, there seem to have been no attempts to quantify how the various measures might have affected individuals and a household’s decision to stay out of the labor force because of the lessened negative income consequences. We cannot rule out the possibility that one part of the drop in employment in urban China reported here was due to the introduction of policy measures aimed at alleviating the consequences of job losses.

<sup>7</sup> In 2008, the year after the period under study here, the Law of the People’s Republic of China on Employment Contracts went into effect. It defines some categories of workers who are not to be terminated first if an enterprise lays off workers. One example is that of a sole breadwinner in a family or of a worker with at least 15 years of seniority and who has a maximum of five years left before general retirement age.

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<sup>8</sup> Future research should look at whether the development of increased dispersion in employment rates across cities, as reported here, can be found in other data as well, as the sampling strategy for cities are not identical across surveys.

<sup>9</sup> Following the practice of most users of the CHIP data, we do not use sample weights. Although the sample sizes are more or less constant across provinces, the sizes of the populations are not.

<sup>10</sup> As questions on early retirement in the 2007 survey were not phrased identically to the corresponding questions in the previous surveys, it is difficult to judge whether or not the small reduction in the rate for 2007, as reported in the table, is real.

<sup>11</sup> Although this is true for all subgroups and years under investigation, our estimate of 10 percent of males aged 30 to 45 in 2007 appears high and is possibly due to how we have constructed the classification (see note to Table 8.1).

<sup>12</sup> The number for 2002 is rather close to the 11.1 percent reported by Giles et al. (2005) from samples of five large cities.

<sup>13</sup> “OECD Unemployment Rate Stable at 8.8% in November 2009,” January 11, 2010, at <http://www.oecd.org/dataoecd/30/61/44367840.pdf>, accessed July 23, 2011.

<sup>14</sup> Using the CHIP data for urban China in 1988, 1995, and 2002 Liu (2012) estimates the probability models for belonging to the labor force (employed or unemployed). In addition she estimates the probability models of being employed for persons belonging to the labor force. The analysis presented in this section differs by defining different categories of non-workers and by considering, for example, the employment rate in the city as an explanatory variable. Furthermore, we also include 2007.

<sup>15</sup> The small number of households where there is no spouse is omitted from the statistical analysis.

<sup>16</sup> The coefficients indicate that age positively affects the “homemaker” state in 1995 and 2002, but negatively affects it in 2007. One can speculate whether this may be a reflection that the label “homemaker” changed over time, making it more socially acceptable for middle-aged women to select this alternative in their responses to the questionnaire.

<sup>17</sup> For 2002 and 2007 we use the market rate approach for valuing the imputed rent of owner-occupied housing, as described in Chapter 3. For 1995 we also use the market rate approach, based on our own calculations.