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A New Episode of Increased Urban Income
Inequality in China

by

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A New Episode of Increased Urban Income Inequality in China

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I. Introduction

The development of income inequality in urban China is a hot topic. There is agreement that income inequality has tended to increase over the years, but evidence indicates that the development has not been smooth. For example, previous studies based on the China Household Income Project (CHIP) have found that earnings inequality at the individual level as well as income inequality at the household level in urban China increased profoundly from 1988 to 1995. However, although from 1995 to 2002 earnings inequality continued to increase, income inequality at the household level decreased modestly (Gustafsson, Li, and Sicular 2008). Rapid growth in incomes caused urban poverty, assessed by a poverty line representing constant purchasing power ("absolute poverty"), to diminish rather substantially (Appleton, Song, and Xia 2010). What has happened more recently, during the initial phase of the Hu Jintao-Wen Jiabao leadership (2002-7)? In this chapter we aim to shed new light on developments during the 2002-7 period using data from the CHIP urban household survey.

Our first research question is: How did income, income inequality, and poverty develop? To answer this question, we show income growth curves and report estimates of income inequality. Furthermore, we show cumulative density functions and report summary measures on absolute and relative poverty for 1988, 1995, 2002, and 2007. The second research question is: What were the forces for change during the period from 2002 to 2007? To understand this we decompose the Gini coefficient of disposable household per capita income by income components for 2002 and 2007. The third research question is: How have various categories of the population fared during the period from 2002 to 2007? To answer this question we look at differences among groups based on ownership, sector, age, and education.

One major finding is that the period between 2002 and 2007 was characterized by a new episode of increased income inequality in urban China. However, if measured by summary indices such as the Gini coefficient, the increase was not as rapid as the increase between 1988 and 1995. Poverty among urban residents assessed by various poverty lines expressing constant purchasing power decreased. It is also true, however, that a slightly larger proportion of urban residents were relatively poor, that is, they had per capita incomes falling below a relative poverty line defined as a fixed percentage of the median income.

We find two sources to be the most important contributors to the increase in inequality between 2002 and 2007 -- the rather rapid growth of business income (income from self-employment and from owning a private business) and the rapid growth of imputed rent from owner-occupied housing. These sources originated from policy changes introduced during the pre-Hu-Wen leadership period. We find substantial differences in a household's economic situation across cities. China's urban poverty problem is disproportionally concentrated in low-income cities and affluent households are more prevalent in high-income cities. China's children grow up in households with rather different economic situations. There is also a wide variation in economic well-being among the elderly in urban China.

There are many aspects of urban inequality in China, and we do not study all of them in this chapter. Following many other studies, our analysis concentrates on formal urban residents. In other words, we leave aside the important issue of how rural migrants are faring and how their increased number has contributed to the development of inequality among all persons and households living in urban China. We also note that our focus is on how individuals living in households and sharing income with other household members are faring, whereas other studies in this volume analyze inequality in workers' earnings and wages (see, for example, Chapter 9 in this volume). Although these two aspects of urban inequality are strongly related, they are not the same. This becomes apparent in Chapter 8 in

this volume which shows that redistribution within Chinese urban households to a large extent has counteracted impulses toward increased inequality due to increased unemployment and other forms of non-work. Furthermore, we implicitly assume that resources within households are equally shared, an assumption that might not be correct in all cases. Yet it is rather difficult to replace this with another assumption due to the lack of information on intra-household allocation in the CHIP survey data. Finally, although our focus is on the distribution of income, income obviously is not the only indicator of well-being; our analysis is complementary to parallel studies that focus on other welfare indicators, such as education and health (see Chapter 4 on educational inequality).

In the next section we provide some background information on how changes in urban China during the 2002-7 period are relevant to our research questions. Section III presents the data and definitions of some of the key variables. Section IV examines overall development, and Section V analyzes the decomposition of the Gini coefficient by income components. Section VI describes how various categories of persons have fared, and the chapter concludes with a summary of our findings.

II. Background

During the period from 2002 to 2007, the Chinese economy continued to grow at an astonishing rate -- GDP rose by 82 percent. Many processes contributed to this development, affecting changes in the composition of the affected groups in the population. For example, the proportion of young children decreased, whereas the proportion of elderly increased. We will discuss those changes considered to have had the most effect on the development of income inequality.

Change in the types of work-units in which Chinese households earn their incomes has been considerable. In the past, almost all economic activities in urban China took place in

state-owned units (including state-owned enterprises [SOEs]) or collective units. During the second half of the 1990s, central policies promoted diversified ownership, allowed ineffective work-units to go bankrupt, and abolished permanent job tenure. This led to many job losses as the aggregate number of those employed in state-owned and collective units declined from 140 million in 1995 to 80 million in 2002, an enormous loss of 60 million jobs, or 8.6 million jobs per year (NBS various years). As a consequence, an employment problem of unprecedented magnitude became a strong stimulus for the increased income inequality (see also Cai, Chen, and Zhou 2010). Although jobs in state-owned and collective units continued to decrease from 2002 to 2007, the reduction slowed to 1.8 million per year; in 2007, 64 million workers were employed in SOEs and 7 million in collective units.

The downsizing and restructuring of the state and collective sector was counteracted by the growth of the private sector (see, for example, Chen, Li, and Matlay 2006; Haggard and Huang 2008; Dickson 2008; and H. Li et al. 2008). From the second half of the 1950s and until 1978, the social and political environment allowed little room for the development of either private enterprises or self-employment. Private enterprises were not officially recognized until April 1988 when China issued provisional regulations on private enterprises. The regulations gave legal status to privately-owned firms that employed eight or more workers (called *siying qiye*). However, adoption of the regulations did not immediately change the environment for private business. For example, private entrepreneurs faced, and still face, problems of accessing credit via formal channels. Furthermore, complex rules govern private enterprise activities and owners must spend considerable time and resources interacting with bureaucrats. Most observers agree, however, that opportunities for operating private enterprises have improved. An indication of their increased acceptance is that at the 2002 the Sixteenth National Congress of the Communist Party of China the constitution was amended to allow private owners to become members of the Communist Party.

In order to legally run a business as a private owner one must register with the State Administration for Industry and Commerce at different levels. Official statistics show a growing number of registered private enterprises after the 1988 change in legal status. The number of private businesses was 139,000 in 1991, over 2 million in 2002, and as many as 5.5 million in 2007 (*Zhongguo siying jingji nianjian* 2009). Measured by the scale of their operations, private enterprises are rather heterogeneous. There are many small firms (for example, in the retail and service sectors) and a few large units in, for example, manufacturing and mining. Thus, one would expect the earnings of private owners to be rather unequally distributed. Among private firms, in 2002 there were 20 million employees and 4.2 million employers; by 2007 the numbers had grown to 46 million employees and 9.8 million employers

Another part of the private sector is made up of the self-employed (see, for example, Yueh 2009). During the period of the planned economy, SOEs provided stable employment, heavily subsidized housing and health care, as well as old-age security. Self-employment was illegal and politically dangerous. However, as the urban reforms proceeded and jobs disappeared and the various benefits and subsidies were phased out, the incentives to become self-employed increased. Particularly during the early stages of the reform process, switching to self-employment was an attractive alternative for low-skilled workers who risked being laid off. More recently, a substantial number of skilled workers and professionals have also moved into self-employment. The number of self-employed increased from 23 million in 2002 to 33 million in 2007 (NBS various years). This means that in 2007 the number of persons engaged in the private sector (employees and owners as well as the self-employed) reached 79 million, a number higher than the 71 million who were employed in state or collective enterprises. Still, the latter number is larger than the 46 million employed in private firms.

The expansion of the private sector means that business income, defined here as income from self-employment or from being an owner of a private business, expanded rapidly from its low base during the first phase of the Hu-Wen leadership. In Section V we report that during these years, business income increased more rapidly than total income. We also report that during the period under study property income increased more rapidly than total income. However, property income still constitutes a rather small proportion of the total income of Chinese households.

Although enterprise and property income increased rapidly during the initial years of the Hu-Wen leadership, wages from working in an SOE or in a privately owned unit are still the primary sources of income. But wage earnings have increased less rapidly than many other sources of income. We report that the share of wage earnings in total income has actually fallen. How much a specific household earns in wages depends on various household circumstances. These include changes in the household's labor supply, with a long-run trend of fewer adult persons earning income from work, changes in wage rates due to changed methods for setting wages, changing demand, and changing supply. Regarding the latter, the increased number of rural-to-urban migrants, who most often are low-skilled, presumably negatively affected the wages of low-skilled workers. Moreover, the expansion of higher education presumably exerted downward pressure on the wages of highly-skilled workers. Chapter 9 in this book examines in more detail changes in wage inequality in urban China in the 2000s.

In pre-reform China an overwhelming majority of households were allocated low-rent housing, i.e., received large housing subsidies. Due to the various types of housing reform that proceeded at different speeds in different locations, by 2002 most housing in urban China had been privatized (see Chapter 3). The privatization followed a pattern by which the tenants were given an opportunity to buy the apartment where they were living at a price lower than

the market price. The resulting wealth transfers were typically larger for better-off workers because these workers generally had been allocated larger apartments in better locations (Logan, Fang, and Zhang 2010). For this reason, and due to the transactions on the emerging housing market, one can assume that imputed rents from owner-occupied housing are positively related to household income.

No recent visitor to urban China can fail to note the intense construction activity taking place. During the first phase of the Hu-Wen leadership, the housing stock increased rapidly. Furthermore, housing demand increased rapidly as well. Many people had accumulated savings enabling them to afford housing and, at the same time, access to loans increased. One essential part of the picture is that urban residents typically expect future income increases. Furthermore, the rapidly increasing housing prices led to expectations of further price increases, making urban residents more inclined to invest in the housing market, thus feeding price increases even at the risk of creating price bubbles. We observe that housing prices in urban China increased rather rapidly during the initial phase of the Hu-Wen leadership (see Chapter 3). We report that the rental value of owner-occupied housing, on average, increased almost twice as rapidly as total household income.

In urban China a very large proportion of women over the age of 55 and men over the age of 60 receive pensions as former SOE, government, or collective employees. Few of the elderly work for wages; however, many live with their grown and economically active child and his or her spouse, and others live alone with their spouse and receive pensions as their dominant source of income (for the situation of the elderly during the Mao period see Davis-Friedmann 1991; and for a analysis of income among the aged using CHIP data from 1988, 1995, and 2002 see Palmer and Deng 2008). Pension payments are linked to work histories; from the perspective of Western observers, income replacement rates are considered to be high. An overwhelming proportion of all retirees have long work histories and thus have

substantial pension incomes. Many retirees with limited means have enjoyed increased real income as the minimum enterprise-employee pension increased from 714 yuan per month in 2005 to 963 yuan per month in 2007 (908 yuan per month in 2005 yuan). With their long work careers leading to relatively large apartments, many of the elderly enjoy imputed rents from owner-occupied housing. On the whole, China's older urban population has a living standard not significantly different from that enjoyed by the working population.

Many of the situations that are described above have increased income inequality at the household level. However, most likely other forces are also at work. For example, rapidly increased incomes have moved income-earners into higher tax brackets. Although tax schedules have been reformed, the progressive tax system presumably counteracted those forces leading to higher income inequality. For an analysis of the distributional impact of personal income taxes in urban China, see Chapter 10.

III. Data and Definitions

For our analysis we use data from the 2002 and 2007 CHIP urban surveys. The 2002 urban data cover twelve provinces: Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong, Chongqing (in 1988 still a part of Sichuan), Sichuan, Yunnan, and Gansu. We 2007 data include these provinces as well as Shanghai, Zhejiang, Fujian, and Hunan. For comparisons with earlier periods, if possible, we use data for the same provinces from the 1988 and 1995 urban surveys (Sichuan was not surveyed in 1988). The 1988 survey is described by Eichen and Zhang (1993), and information on the 1995 and 2002 surveys is found in S. Li et al. (2008). Chapter 2 in this volume as well as Appendix II in this volume provides details on the 2007 survey.

We define household income per capita to include earnings, pensions, business income, housing subsidies, imputed rents from owner-occupied housing, and income in-kind. Business

income includes self-employed income as well as income accruing to private entrepreneurs. Our definition of household income also includes imputed rents from owner-occupied housing. Following the approach in several other chapters in this volume, we have used the market rent approach to estimate the imputed rental income from owner-occupied housing for 1995, 2002, and 2007 (see Chapter 3). As this alternative is not available for 1988, for 1988 we follow the approach of Khan et al. (1993) and define imputed rent of owner-occupied housing as 8 percent of the net worth of owner-occupied housing (current replacement value minus the outstanding debt). Taxes and fees are treated as negative income. We introduce province weights based on the published NBS population data as discussed in Appendix II.

The total household income is divided by the number of household members and is then ascribed to each household member, making individuals the unit of analysis. Income is measured in 2002 constant prices using the NBS urban consumer price index. This study differs from Chapter 8 in this volume in that our population includes children and the elderly. Following Brandt and Holz (2006), we also take into account spatial price differences.

IV. Overall Development

Figure 7.1 about here

In this section we study the overall trends in household income and poverty from 1988 to 2007. Although developments up to 2002 have been reported in earlier writings, information on the 2002-7 period is new. We start by comparing the income growth curves (Ravallion and Chen 2003) computed for percentiles, as shown in Figure 7.1 for the three periods 1988-95, 1995-2002, and 2002-7. Several interesting observations are revealed. Positive growth is reported for almost all percentiles and for all three periods. The exception is the lowest nine percentiles for the 1988-95 period. Income growth was generally fastest during the 2002-7 period: the growth curve for this period is located entirely above the other two. Thus income

growth of Chinese households accelerated during this first phase of the Hu-Wen leadership. For example, income growth at the median was 2.7 percent per annum during the first period, 4.8 percent during the second period, and an impressive 10.6 percent during the third period.

Figure 7.1 also shows that during the most recent period income growth generally was fastest at the top of the income distribution and lowest at the bottom; the upward slope means that income inequality increased. However, the growth curve for the 2002-7 period is less steep than the slope for the 1988-95 period. In contrast, the growth curve for 1995-2002 is relatively flat: upward-sloping at the lower percentiles and sloping slightly downward at the higher percentiles. From an examination of the slope of the three curves we can conclude that income inequality developed differently during the three periods. The period between 1988 and 1995 was characterized by rapidly increasing income inequality, that between 1995 and 2002 witnessed few changes, and that between 2002 and 2007 represented a new period of increased income inequality.

Table 7.1 provides estimates of three often used income inequality indices, computed for 1988, 1995, 2002, and 2007. The indices reveal the same direction change in inequality as the growth curves, although the magnitude differs across the three indices. A period of rapid increases was followed by a small reduction and then by a new episode of increased income inequality. According to our estimates, in 2007 the Gini coefficient was 0.323, which by the standards of rich countries is not very high, but nor is it extremely low. Looking at the top of the distribution, we see that the proportion of individuals having a per capita income of at least 200 percent of the contemporary median (i.e., affluent persons) increased rapidly from 4 percent in 1988 to 9 percent in 1995, fell to 6 percent in 2002, and increased marginally to 7 percent in 2007.

Table 7.1 about here

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The rather rapid income growth at the lower part of the income distribution between 2002 and 2007 means that poverty, assessed by an absolute poverty line representing fixed purchasing power, decreased rapidly during the period. This is shown in Figure 7.2 where we report the Cumulative Density Functions for 1988, 1995, 2002, and 2007. These curves show the cumulative proportion of individuals at each level of income. There is one curve for each year studied. In the figure we have drawn three alternative poverty lines, all expressed in constant purchasing power by using the consumer price index (CPI). Although this approach is used in several studies of changes in urban poverty in China (for a survey, see Riskin and Gao 2010), some analyses prefer a different approach (see Meng, Gregory, and Wang [2005], who re-estimate the cost of a basic needs poverty line for each year during the 1986-2000 period).

There is no official poverty line for urban China, so in our analysis of poverty we use poverty lines based on the World Bank's $1.25 PPP per person per day standard. The lower poverty line in Figure 7.2 corresponds to the US$1.25 PPP per day. In 2002 prices, this was 1,761 yuan (Chen and Ravallion 2010). The second and third poverty lines correspond to two and three times this amount, respectively. Within that portion of the graph to the left of the poverty lines, the cumulative density function for 2007 is below that of 2002. Thus, we can conclude that poverty as assessed by these poverty lines has continued to decrease. We also note that although the decrease at the highest poverty line is substantial, at the lowest poverty line the decrease is not easy to detect, because by 2002 a very small proportion of urban residents fell below this low poverty line.

Figure 7.2 about here

Table 7.2 about here

In Table 7.2 we report the numerical values for the Foster, Greer and Thorbecke (FGT) (1984) family of poverty index, computed for two "absolute" poverty lines in urban China for

1988, 1995, 2002, and 2007. For each poor unit this family of indices uses its normalized poverty gap, which is a number indicating how far below the poverty line the income falls on a scale bounded by 0 and (in case of no negative income) 1. Those gaps are raised by a positive parameter before the average is taken and then multiplied with the head-count ratio. Higher numbers of the parameter give increasing weight to large poverty gaps, and thus greater "poverty aversion." Starting with the lowest line, the US$1.25 world poverty line, we see that the proportion of urban residents considered to be poor actually went up from 1 percent in 1988 to 3 percent in 1995, but thereafter fell to 1 percent in 2002 and was only 0.1 percent in 2007. However, when doubling the poverty line, not less than one-third of the urban residents were considered poor in 1988. The proportion thereafter decreased particularly rapidly between 1995 and 2002, reaching only 2 percent in 2007. The other two indices tell much the same story about the development of urban poverty.

In a rapidly growing economy, does it make sense to assess the extent of poverty solely or predominantly against an "absolute" standard? There has been much debate on this issue during periods of growth in rich countries. For example, when Eurostat reports how many persons and households in the European Union are at risk of becoming poor, the assessment is made against a relative poverty line that is defined as a fixed percentage of the median income for the country where the person and household resides. For some years, a poverty line set at 60 percent of the median poverty line was used. A recent study on inequality and poverty in thirty rich countries uses the same approach (OECD 2008). In academic work on urban China, the approach of setting the poverty line at 50 percent of an urban location has been used. An early example is Wong (1995, 1997) where the poverty line is defined as 50 percent of the median of the city under investigation (Guangzhou and Shanghai). Another example is Wang (2008) who, in a study of the 1986-2000 period, put the poverty line at 50 percent of the median for urban areas in those provinces under investigation (Liaoning, Sichuan, and

Guangdong) or, alternatively, at 50 percent of the median in the city where the person resided (in one of the three provinces covered in the study). Saunders (2007), in a international comparison of poverty among older people in urban China, uses a poverty line set to 50 percent of the median income for urban China. We follow this approach, putting the poverty line at 40, 50, 60, and 70 percent of the contemporary median income in urban China. The results are reported in Table 7.3.

Table 7.3 about here

Table 7.3 shows that, for all alternatives applied, relative poverty in urban China has increased in all years under study. Whereas 8 percent of urban residents fell under a poverty line put at 60 percent of the median income in 1988, the proportion increased to 15 percent in 1995, to 18 percent in 2002, and to 19 percent in 2007. The latter number is within the range or above the average of similarly defined poverty rates for thirty OECD countries in the mid-2000s (OECD 2008). Note that when we compute the poverty rates, resources received by the households within the means-tested minimum living guarantee (*dibao*) program are considered. We can conclude that the expansion of the *dibao* program for urban residents from the mid-1990s and into the new millennium did not fully counteract the underlying increase in relative poverty.

From the above two exercises conceptualizing and measuring poverty, we can conclude that China's urban poverty record differs dramatically depending on the lens by which it is viewed. From a third-world perspective, China is a success story -- in 2007 almost no one fell under the US$1.25 poverty line. However, seen through the lens of rich countries, the situation appears to be worrisome. Relative poverty rates in China are not low and urban poverty by this measure is not trivial. A similar conclusion follows from application of the Subjective Poverty Line approach to defining a poverty line for urban China. Gustafsson, Li,

and Sato (2004) report poverty rates of 6 to 7 percent for a sample of twelve cities in 1999. Another concern is the secular upward trend in relative poverty; relative poverty rates in urban China have been rising steadily for as long as two decades.

V. How Changed Income Sources Have Affected Income Inequality

In this section, by decomposing the Gini coefficient for total household income, as defined in Section III, we shed light on how income inequality has changed. The Gini coefficient can be written as the weighted sum of the concentration coefficients of the various income sources. The weights are the shares of the income source in the total per capita income. Thus we have:

$$G = \sum_k \frac{\mu_k}{\mu} C_k \tag{1}$$

where μ_k and μ are the means of income source k and the total per capita income, respectively, and C_k is the concentration coefficient of income source k. The concentration coefficient measures the association between income source k and the total per capita income, with values ranging from -1 to +1. If the concentration coefficient is negative, it means that low-income earners are receiving larger amounts (in an absolute sense) than high-income earners. Not only is the sign of the concentration coefficient of interest; its magnitude in comparison to the Gini coefficient is an indicator of the distributional profile of the income source. If the income source has a concentration coefficient that is equal to the value of the Gini coefficient of the total per capita income, the distribution of the income source is as equal as total per capita income. However, if the concentration coefficient of an income source is greater (or smaller) than the Gini coefficient of total per capita income, this income source is considered to be dis-equalizing (equalizing).

We define eight components of income and decompose the Gini for 2002 and 2007. Table 7.4 lists the components and reports the mean values for the two years under study as well as the changes in both absolute and relative terms. The largest component in both years is earnings, followed by pensions. Third are imputed rents from owner-occupied housing, a very rapidly increasing component. The fourth largest component is business income, which more than tripled between 2002 and 2007. Although property income increased rapidly in 2007, it is still a minor component of income. Evidence that the planned economy generally had disappeared from urban China by 2007 shows up in the rapidly decreasing housing subsidies and the small in-kind income. Net transfer income is made up of income taxes and social security contributions, income from social relief, fees for participating surveys, private transfers, and so forth. The negative signs of income taxes and social security contributions, two main components of transfer income in terms of their absolute values, lead to the negative signs of net transfer income.

<center>Table 7.4 about here</center>

In Table 7.5 let us first inspect the numerical values of the concentration coefficients for the income sources with a relative share of larger than 1 percent in 2007. We find that the distributional profile of earnings, pensions, and imputed rents from owner-occupied housing are all relatively close to the Gini coefficient in both years. In contrast, business income moved from being rather equalizing to being marginally dis-equalizing. Property income has the highest concentration coefficient of all income sources in 2007, and higher than that in 2002. The sign of the concentration coefficient for net transfer income changed across the years to become proportional to disposable income in 2007.

We now use the decomposition to throw light on which channels have led to an increase in income inequality as measured by the Gini coefficient. Let us analyze the results in the

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following way**:** The difference between the two Gini coefficients for the different years can be written as:

$$G_1 - G_0 = \sum (u_{1k}C_{1k} - u_{0k}C_{0k}) \tag{2}$$

where u_{ik} is the share of income source k in the total per capita income in year i (2002 and 2007), C_{ik} is the concentration coefficient of the income source k in year i, and G_i is the Gini coefficient of per capita disposable income in year i (2002 and 2007). The contribution to the changed Gini coefficient from each income source, reported in Table 7.6, column 3, in turn can be decomposed into changed relative shares (keeping the concentration coefficient constant) and changed concentration coefficients (keeping the relative share constant). As the latter exercise can be performed using different reference years, we report both alternatives in Table 7.6. Thus the numbers in columns 4 and 7 show one alternative decomposition whereas the numbers in columns 5 and 6 report the other.

Table 7.6 about here

Table 7.6, column 3, shows that the two largest contributors to the increase in the Gini coefficient are the two rapidly expanding income sources – business income and imputed rents of owner-occupied housing. Business income not only increased its relative share, but also became more concentrated among persons in the upper part of the distribution (the relative importance of these changes differ in the alternative decompositions). The increased contribution from imputed rent of owner-occupied housing is mainly due to its increased relative share. Compared to the trend toward increased income inequality from enterprise income and imputed rents, the impact of property income was relatively small. Notably, changes in earnings as well as in pensions, the two largest income sources, play only a small role in the increase in income inequality. Table 7.6 also reveals that the forces working

against increased income inequality came mainly from net transfer income (as this component has with a negative sign to total income). Other sources of income contributing to reducing income inequality include housing subsides and income in-kind.

VI. How Various Groups Have Fared

How did various groups in urban China fare during the initial phase of the Hu-Wen leadership? We will divide the urban population into groups on the basis of three categories: ownership sector, age of the individual, and education of the household head. We will then describe changes for each category and estimate multivariate models. For each categorization we show growth-curves and report means, measures of income inequality, relative poverty, and proportions of affluence.

With respect to ownership sector, we find it useful to define three categories: a) persons living in a household primarily earning wages from employment in SOEs or government institutions (the state sector) b) persons living in households primarily connected to the private sector, i.e., workers in privately-owned firms, owners of a private firm, or those earning income from self-employment (the private sector), and c) persons living in households with no working adult, i.e., mainly elderly persons living on pensions (non-workers). Our divisions are based on the presumption that the trend toward higher income in the 2002-7 period is strongest at the top of the income distribution within the dynamic and rapidly expanding private sector, and that this income growth came not only from higher wages among skilled workers in private firms, but also from higher incomes earned by private owners as well as from rapidly increasing imputed rents from owner-occupied housing. We also hypothesize that incomes at the top of the income distribution in the slowly shrinking state sector have increased, but not as rapidly as those in the private sector. In contrast, income increases at the lowest end of the distribution in the two sectors are believed to be due

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to decreased labor supply and comparatively slow earnings development, for example among less-skilled workers. Furthermore, we are interested in how spatial characteristics measured by the mean income in the city where the household resides affect the income level. In our reading of the literature, the differences in distribution of income in urban China across cities have not attracted much research interest. One exception is Wang (2008) who studied urban income inequality among employed individuals in the three provinces of Liaoning, Sichuan, and Guangdong from 1986 to 2000. Based on his results, during the period under study, city differences played a large and increasing role in urban income inequality.

Applying our categories, we find that the proportion of people primarily connected to the private sector increased from 25 percent in 2002 to 35 percent in 2007; mirroring this, during the same period the proportion primarily connected to the state sector decreased from 64 percent to 54 percent. In both years, 11 percent of people in urban China lived in households with no adult worker (see Table 7.7). Figure 7.3 shows that, as expected, income growth was fastest at the top of the private sector, but also among non-workers in the lower part of the distribution. There is a pattern of people in the state sector experiencing slower income growth than people in the private sector. At the median, income growth was fastest in the private sector, followed by non-workers, and finally in the state sector. The upward sloping growth curves for the private and public sectors indicate that income inequality within those sectors increased, as also shown by the Gini coefficients reported in Table 7.7. In contrast, the growth curve for non-workers is sloping downward rather than upward for most of the distribution, and the Gini for this category did not change between the two years. Similarly, although the relative poverty rates for people in the private and state sectors increased from 2002 to 2007, among non-worker households the development was the opposite.

<center>Figure 7.3 about here</center>

<center>Table 7.7 about here</center>

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Developments in the three sectors to a certain extent mirror those in two other alternative disaggregations of the population. In Figure 7.4 and Table 7.8 we divide the population into children (a category with a decreasing share of the population), and adults and elderly (a category with an increasing share of the population). In contrast to the case in many rich countries, the mean income of the elderly is higher than that of adults. Although the overall impression from Figure 7.4 is that income growth has not been different for the three age groups, there are certain noteworthy differences. The elderly stand out in terms of a rapid increase at both tails of the distribution, but not in the middle. Income inequality measured by the Gini coefficient within this category increased whereas relative poverty decreased slightly. Income inequality also increased among children and adults. Relative poverty rates increased somewhat for both children and adults. It should be noted that the highest growth rates are observed at the top of the distributions for children and the elderly, but not for the adults.

<center>
Figure 7.4 about here

Table 7.8 about here

Figure 7.5 about here

Table 7.9 about here
</center>

As opposed to rural China, few persons in urban China live in households headed by a person with only a primary education. In Figure 7.5, showing growth curves for persons living in households with the head having different levels of education, we find a difference between the less-educated, many of whom are elderly, and all others. Incomes grew fastest among the less-educated at the lowest part of the distribution. For those with education at the high school level and higher, the growth curve indicates increased income inequality and increased rather than decreased relative poverty rates.

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The overall impression from the bivariate analysis is that at the middle of the income distribution, the changes were similar for the various subgroups. This is confirmed when we run regression models for 2002 and 2007 and compare the coefficients across years. The explanatory variables measure the schooling of the household head, the age of the household head, and the age of household head squared. Continuous variables measure the number of children in the household, the number of adults working in the state sector, the number of adults working in the private sector, the number of non-working adults, the number of elderly with pensions, and the number of elderly without pensions. A dummy for Han ethnicity as a control variable is included in the specification, as is the log of city per capita income and dummies for the province. Descriptive statistics for the explanatory variables are presented in the Appendix to this chapter.

Table 7.10 about here

The regression estimates are reported in Table 7.10. They show that household per capita income is closely and positively linked to the mean income of the city where the household resides. The estimates for the coefficients for the years of schooling are 0.047 in 2002 and 0.050 in 2007, that is, they are quite similar. Household per capita income decreases with the number of adult household members, and most rapidly if the household member is not employed. Although the number of elderly with pensions positively affects per capita income, the opposite is the case for elderly without pensions. Among the coefficients for the province dummies, the positive coefficient for Guangdong stands out as having a high t-value in both years.

In a second step, we focus on individuals at the two tails of the income distribution. We specify one probit model where the dependent variable is relative poverty, defined as household per capita income below 70 percent of the median per capita income. In another model we investigate the determinants of affluence, defined as living in a household with a

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per capita income of at least 200 percent of the median per capita income. The explanatory variables are the same for both models and for the linear regression model. The estimates are documented in the Appendix to this chapter. In Table 7.11 we present the main results as predicted probabilities for some typical individuals.

Table 7.11 about here

The overall impression from Table 7.11 is that differences in the mean city income can make a rather large difference in terms of the probability of being relatively poor or being well-to-do. Consider the typical individual *A* who lives in a household consisting of two employed adults and a child, and where the household head has nine years of education. The probability of being poor in 2002 ranges from less than 1 percent if the household resides in a high-income city and up to 5 percent if the household resides in a low-income city. In 2007 the corresponding variation increases from 7 percent to as much as 55 percent. This example illustrates that although the relative poverty rate in the 2007 sample is only slightly higher than the relative poverty rate in the 2002 sample, there may be hidden substantial increased poverty risks for households with certain characteristics.

The predictions in Table 7.11 also show that children and the elderly fare rather differently depending on their household. Among the elderly, there is substantial variation based on city income, the type of household, and whether or not the elderly receives a pension. It is striking that an elderly person without a pension living in a multi-generational household (individual *B*) in a low-income city in 2007 is predicted to have a 67 percent probability of being poor and a less than 1 percent probability of being rich. In contrast, a person living with one's spouse (individual *G*) in a high-income city has less than a 1 percent probability of being poor and a 93 percent probability of being affluent. The simulations also illustrate how the probabilities are affected if one adult loses his or her job (compare individual *A* and individual *C*), the importance of the level of education of the household head (compare

individual *C* and individual *D*), whether or not there is a child (compare individual *D* and individual *E*), and whether or not there is an elderly person receiving a pension (compare individual *F* and individual *E*).

The findings in this section reveal differences in how various categories of Chinese urbanites fared between 2002 and 2007. For example, households closely connected to the expanding private sector and at the top of the income distribution experienced more rapid income increases than most other households. Furthermore, although relative poverty increased from 2002 to 2007 for children as well as for adults, this was not the case for the elderly. Overall, however, the data do not indicate any dramatic change in income determination from 2002 to 2007.

In contrast, we find substantial differences in the economic situation of households across cities. China's urban poverty problem is disproportionally concentrated in low-income cities and affluent households are disproportionately concentrated in high-income cities. We have reported a wide variation in household income among urban households with children or with elderly. Elderly couples living alone, particularly if they live in high-income cities, fare much better than elderly living in multi-generational households, particularly in households in low-income cities.

VII. Conclusions

In this chapter we study income changes among Chinese formal urban residents between 2002 and 2007, with comparisons to earlier periods. Using the CHIP urban household survey data, we investigate trends in real income, income inequality, and poverty. The reasons for the changes in income inequality are investigated by decomposing the Gini coefficient for per capita household income by income components. Furthermore, we describe how various categories of people have fared by breaking down the population along three dimensions:

ownership of the workplace (or, alternatively, not working); age of the individual; and education of the household head. We show the bivariate analyses and estimate income functions for these different population groups.

We report that overall income increased more rapidly in urban China between 2002 and 2007 than it did during the two preceding periods of 1988-95 and 1995-2002. For example, although median per capita income grew by 2.7 percent per annum from 1988 to 1995, it grew by 4.8 percent from 1995 to 2002 and it grew by as much as 10.6 percent from 2002 to 2007. In contrast to the 1995-2002 period, income inequality increased between 2002 and 2007, although the increase was not as rapid as that between 1988 and 1995.

The increases in real income at the bottom of the income distribution from 2002 to 2007 mean that, assessed against absolute poverty lines representing constant purchasing power, the proportion of people considered to be poor decreased. However, as such income gains were slower than those at the median, the trend of increased relative poverty in urban China continued. Therefore, views about China's poverty problem very much depend on the perspective by which it is viewed. If households are observed through a lens that is used to view low-income countries, poverty is not a problem in urban China today. However, if viewed through a lens used to view high-income countries, the poverty problem among Chinese urban residents is similar to that in many rich countries.

Income inequality among urban residents increased through two major channels. The most important channel was the rapid increase in income from private businesses and self-employment at the top of the income distribution. In 2007 China had more private entrepreneurs and persons who were self-employed than it had in 2002, and their incomes were increasingly concentrated in the higher segments of the income distribution. The second most important factor contributing to increased urban income inequality was the rather rapid increase of imputed rents from owner-occupied housing. This may be due to increases in the

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stock of owner-occupied housing as well as to the rapid increases in housing prices. Interestingly, neither wage earnings outside of the private sector nor pensions were a major factor contributing to the increase in inequality.

Between 2002 and 2007 Chinese urbanites did not enjoy a uniform rate of income growth. For example, households closely connected to the expanding private sector and at the higher end of their income distribution experienced more rapid income increases than most other households. However, the overall impression has been that no dramatic changes in income determination occurred between 2002 and 2007. In contrast, we have reported substantial differences in the economic situation of households across cities. China's urban poverty problem is disproportionally concentrated in low-income cities and affluent households are most prevalent in high-income cities. We have also illustrated that urban children and urban elderly reside in households with rather diverse economic circumstances. Elderly couples living alone, particularly if they live in high-income cities, fare much better than those living in multi-generational households, particularly if they are living in low-income cities.

Thus, in this chapter we show that China's road toward increased income inequality did not come to a halt during the first phase of the Hu-Wen leadership. On the contrary, both income inequality and relative poverty increased. It should be stressed, however, that our analysis indicates that the major factors driving increased income inequality were the rapid increases in income from the private sector, particularly at the top of the distribution, as well as increased imputed rents from owner-occupied housing. Both these factors can be attributed to policy changes initiated before the Hu-Wen leadership period.

References

Appleton, S., L. Song, and Q. Xia (2010), "Growing Out of Poverty: Trends and Patterns of Urban Poverty in China 1988-2002," *World Development*, 38(5), 665-678.

Brandt, L. and C.A. Holz (2006), "Spatial Price Differences in China: Estimates and Implications," *Economic Development and Cultural Change*, 55(1), 43-86.

Cai, H., Y. Chen, and L-A. Zhou (2010), "Income and Consumption Inequality in Urban China: 1992-2003," *Economic Development and Cultural Ch*ange, 58(3), 385-413.

Chen, G., J. Li, and H. Matlay (2006), "Who are the Chinese Private Entrepreneurs? A Study of Entrepreneurial Attributes and Business Governance," *Journal of Small Business and Enterprise Development*, 13(2), 148-160.

Chen, S. and M. Ravallion (2010), "China is Poorer Than We Thought, but No Less Successful in the Fight against Poverty," in S. Anand, P. Segal, and J. Stiglitz, eds., *Debates on the Measurement of Global Poverty*, 327-340, Oxford: Oxford University Press.

Davis-Friedmann, D. (1991), *Long Lives: Chinese Elderly and the Communist Revolution*, expanded edition, Stanford, CA: Stanford University Press.

Dickson, B. (2008), *Wealth into Power: The Communist Party's Embrace of China's Private Sector*, New York: Cambridge University Press

Eichen, M. and M. Zhang (1993), "Annex: The 1988 Household Sample Survey – Data Description and Availability," in K. Griffin and R. Zhao, eds., *The Distribution of Income in China*, 331-346, Basingstoke: Macmillan.

Foster, J., J. Greer, and E. Thorbecke (1984), "A Class of Decomposable Poverty Indices," *Econometrica*, 52(3), 761-765.

Gustafsson, B., S. Li, and H. Sato (2004), "Can a Subjective Poverty Line be Applied to China? Assessing Poverty Among Urban Residents in 1999," *Journal of International Development*, 16(8), 1089-1107.

Gustafsson, B.A., S. Li, and T. Sicular (2008), *Inequality and Public Policy in Urban China*, New York: Cambridge University Press.

Haggard, S. and Y. Huang (2008), "The Political Economy of Private-Sector Development in China," in L. Brandt, and T. G. Rawski, eds., *China's Great Economic Transformation*, 337-374, New York: Cambridge University Press.

Khan, A.R., Griffin, K., Riskin, C., and Zhao, R. (1993), "Household Income and its Distribution in China" in K. Griffin and R. Zhao, eds., *The Distribution of Income in China*, 25-73, Basingstoke: Macmillan.

Li, H., L. Meng, Q. Wang, and L-A. Zhou (2008), "Political Connections, Financing and Firm Performance: Evidence from Chinese Private Firms," *Journal of Development Economics*, 87(2), 283-299.

Li, S., C. Luo, Z. Wei, and X. Yue (2008), "Appendix: The 1995 and 2002 Household Surveys: Sampling Methods and Data Description," in B.A. Gustafsson, S. Li, and T. Sicular, eds., *Inequality and Public Policy in China*, 337-354, New York: Cambridge University Press.

Logan, J., Y. Fang, and Z. Zhang (2010), "The Winners in China's Urban Housing Reform," *Housing Studies*, 25(1), 101-117.

Meng, X., R. Gregory, and Y. Wang (2005), "Poverty Inequality and Growth in Urban China 1986-2000," *Journal of Comparative Economics*, 33(4), 710-729.

National Bureau of Statistics (NBS) (various years), *Zhongguo tongji nianjian* (China Statistical Yearbook), Beijing: Zhongguo tongji chubanshe.

OECD (2008), *Growing Unequal? Income Distribution and Poverty in OECD Countries*, Paris.

Palmer, E. and Q. Deng (2008), "What Has Economic Transition Meant for the Well-Being of the Elderly in China," in B.A. Gustafsson, S. Li, and T. Sicular, eds., *Inequality and Public Policy in Urban China*, 182-202, New York: Cambridge University Press.

Ravallion, M. and S.H. Chen (2003), "Measuring Pro-Poor Growth," *Economic Letters*, 78(1), 93-99.

Riskin, C. and Q. Gao (2010), "The Changing Nature of Urban Poverty in China," in S. Anand, P. Segal, and J. Stiglitz, eds., *Debates on the Measurement of Global Poverty*, 300-326, Oxford: Oxford University Press.

Saunders, P. (2007), "Comparing Poverty Among Older People in Urban China Internationally," *China Quarterly*, no. 190, 451-465.

Wang, F. (2008), *Boundaries and Categories: Rising Inequality in Post-Socialist Urban China*, Stanford, CA: Stanford University Press.

Wong, C.K. (1995), "Measuring Third World Poverty by the International Poverty Line: The Case of Reform China," *Social Policy and Administration*, 29(3), 189-203.

Wong, C.K. (1997), "How Many Poor People in Shanghai Today? The Question of Poverty and Poverty Measure," *Issues and Studies*, 33(2), 32-49.

Yueh, L. (2009), "China's Entrepreneurs," *World Development*, 37(4), 778-786.

Zhongguo siying jingji nianjian (2006.6-2008.6) (Economic Yearbook of the Private Economy [June 2006-June 2008]) (2009), Beijing: Zhonghua gongshang lianhe chubanshe.

Table 7A.1. *Descriptive statistics*

	2002	2007
Schooling of the household head	10.67	11.99
Age of the household head	47.67	48.99
Age of the household head squared	2394.96	2535.29
No. of children in the household	0.49	0.44
No. of adults working in the state sector	2.10	1.78
No. of adults working in the non-state sector	0.83	1.15
No. of non-working adults	0.30	0.27
No. of elderly with a pension	0.27	0.32
No. of elderly without a pension	0.07	0.06
Han ethnicity	0.96	0.97
Log of city per capita income	8.94	9.46
Beijing	0.07	0.11
Shanxi	0.09	0.08
Liaoning	0.10	0.10
Jiangsu	0.10	0.08
Anhui	0.07	0.07
Henan	0.10	0.09
Hubei	0.10	0.05
Guangdong	0.09	0.11
Chongqing	0.04	0.06

Sichuan	0.08	0.08
Yunnan	0.09	0.08
Gansu	0.06	0.08

Source: Authors' computation from the CHIP.

Table 7A.2. *Poverty function (poverty line set at 70 percent of the median income)*

	2002	2007
Schooling of the household head	-0.189***	-0.201***
	[0.006]	[0.007]
Age of the household head	0.047***	-0.005
	[0.015]	[0.014]
Age of the household head squared	-0.001***	-0.0002*
	[0.0002]	[0.0001]
No. of children in the household	0.323***	0.178***
	[0.043]	[0.041]
No. of adults working in the state sector	0.480***	0.683***
	[0.028]	[0.026]
No. of adults working in the non-state sector	0.729***	0.837***
	[0.029]	[0.026]
No. of non-working adults	0.884***	1.135***
	[0.039]	[0.043]
No. of elderly with a pension	-0.553***	-0.514***
	[0.052]	[0.047]
No. of elderly without a pension	0.709***	0.484***
	[0.068]	[0.070]

Han ethnicity	0.238**	0.013
	[0.103]	[0.105]
Log of city per capita income	-3.334***	-3.403***
	[0.105]	[0.097]
Beijing		
Shanxi	3.018***	-0.092
	[0.515]	[0.122]
Liaoning	2.762***	0.185
	[0.512]	[0.115]
Jiangsu	3.001***	0.285**
	[0.511]	[0.122]
Anhui	3.117***	-0.107
	[0.513]	[0.120]
Henan	3.025***	-0.089
	[0.512]	[0.117]
Hubei	2.753***	0.153
	[0.512]	[0.123]
Guangdong	2.414***	-0.409***
	[0.514]	[0.122]
Chongqing	3.089***	-0.299**
	[0.516]	[0.126]
Sichuan	3.028***	0.416***
	[0.513]	[0.117]
Yunnan	2.794***	-0.067

	[0.512]	[0.120]
Gansu	2.930***	0.236*
	[0.514]	[0.121]
Constant	24.832***	31.496***
	[1.155]	[1.023]
Pseudo R^2	0.25722499	0.27872734
No. of observations	20626	21545

Note: ** indicates statistical significance at the 5% level, *** indicates statistical significance at the 1% level.
We set the poverty line at 70 percent of the median income because at a poverty line of 60 percent of the median income, no one in Beijing is poor, which makes it impossible to estimate the poverty function.
Source: Authors' estimates from the CHIP.

Table 7A.3. *Affluence function, with 200% of the median income as the threshold*

	2002	2007
Schooling of the household head	0.217***	0.277***
	[0.010]	[0.011]
Age of the household head	0.019	0.012
	[0.022]	[0.017]
Age of the household head squared	0.00004	0.00001
	(0.0002)	(0.0002)
No. of children in the household	-0.466***	-0.364***
	[0.076]	[0.069]
No. of adults working in the state sector	-1.250***	-0.915***
	[0.053]	[0.045]
No. of adults working in the non-state sector	-1.460***	-0.963***
	[0.058]	[0.046]
No. of non-working adults	-1.526***	-1.297***
	[0.081]	[0.082]
No. of elderly with a pension	0.233***	0.432***
	[0.073]	[0.062]

No. of elderly without a pension	-0.591***	0.112
	[0.176]	[0.147]
Han ethnicity	-0.344**	0.223
	[0.143]	[0.161]
Log of city per capita income	4.369***	3.890***
	[0.209]	[0.143]
Beijing		
Shanxi	0.555***	0.237
	[0.188]	[0.176]
Liaoning	0.134	-0.049
	[0.144]	[0.119]
Jiangsu	0.316**	0.116
	[0.126]	[0.088]
Anhui	0.065	-0.066
	[0.195]	[0.146]
Henan	0.354**	-0.161
	[0.154]	[0.121]
Hubei	-0.207	0.032
	[0.205]	[0.155]
Guangdong	0.683***	0.636***
	[0.103]	[0.083]
Chongqing	0.592***	0.275*
	[0.162]	[0.154]

Sichuan	0.467***	0.541***
	[0.172]	[0.128]
Yunnan	0.044	0.738***
	[0.167]	[0.161]
Gansu	0.032	-0.336
	[0.210]	[0.214]
Constant	-41.185***	-41.205***
	[2.062]	[1.501]
Pseudo R^2	0.2984	0.3025
No. of observations	20626	21545

Note: A person living in a household with a disposable per capita income of at least 200 percent of the median income as observed during the year under study is classified as affluent. ** indicates statistical significance at the 5% level, *** indicates statistical significance at the 1% level.
Source: Authors' estimates from the CHIP.

Figure 7.1 Income Growth Curves for the 1988-95, 1995-2002, and 2002-7 periods (annual income growth at various percentiles)
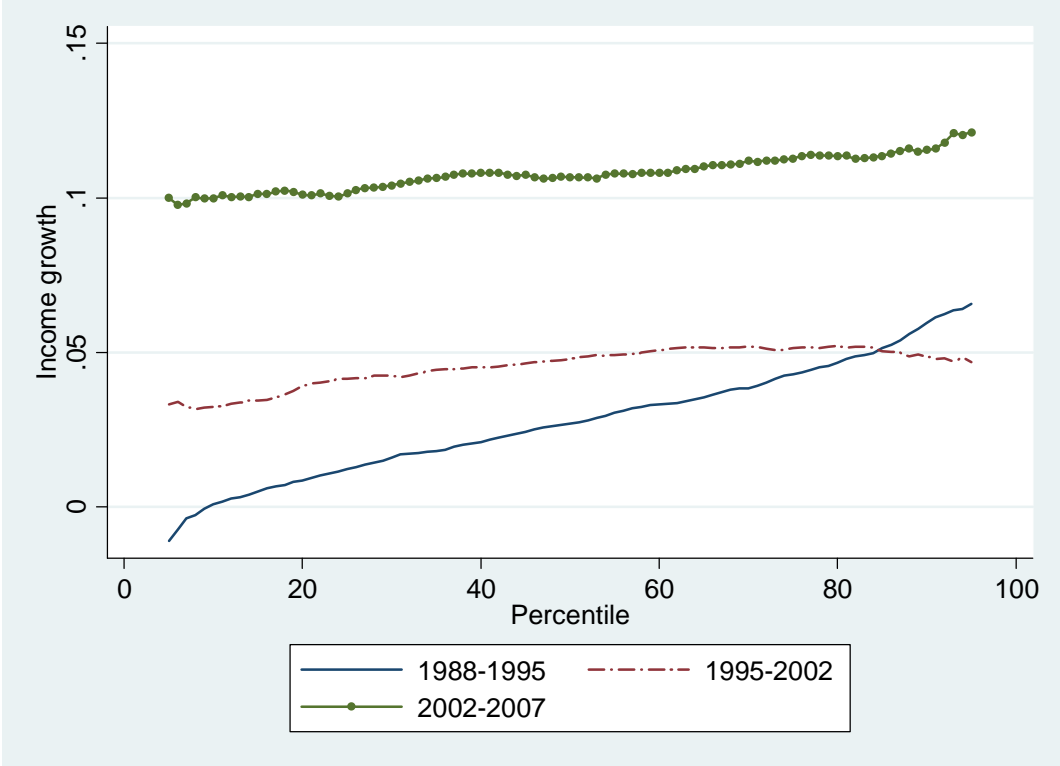
Figure 7.2 Cumulative Distribution of Income, 1988, 1995, 2002, and 2007
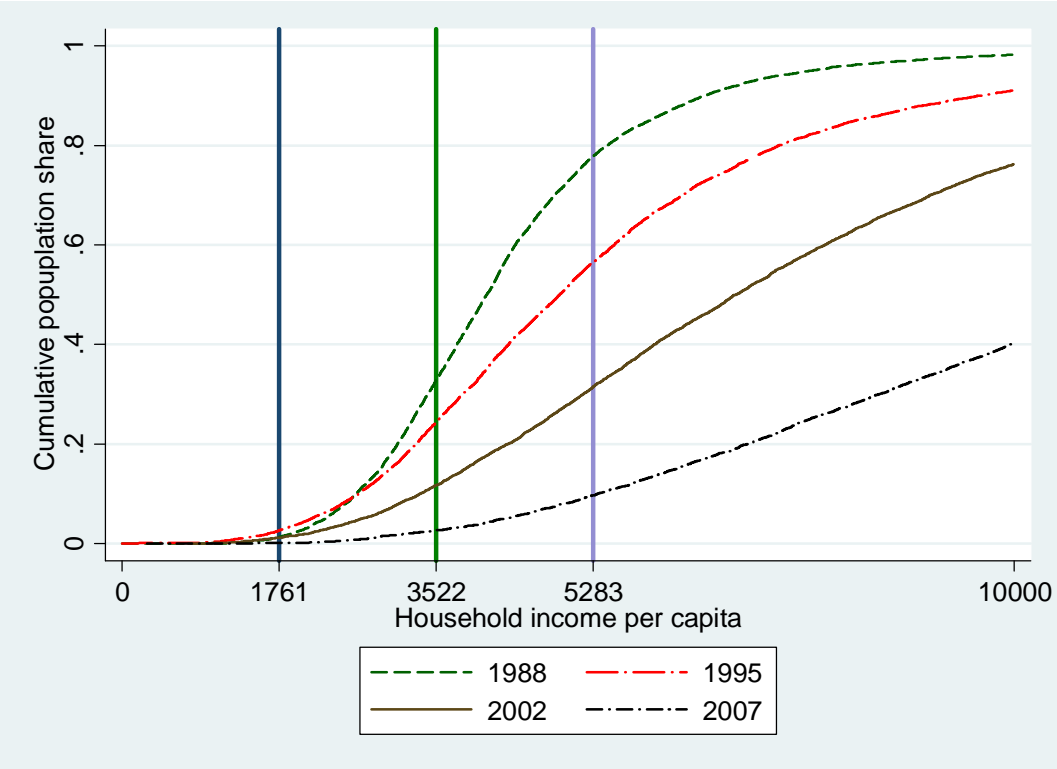
Source: Authors' computations from the CHIP.

Note: Income is expressed in 2000 prices using the spatial price index of Brandt and Holz (2006). For better visualization we have restricted the curves to income lower than 10 000 yuan.

Figure 7.3 Growth Curves for Individuals Living in Households Primarily Connected to the State Sector, the Private Sector, and Those with No Workers, 2002 and 2007
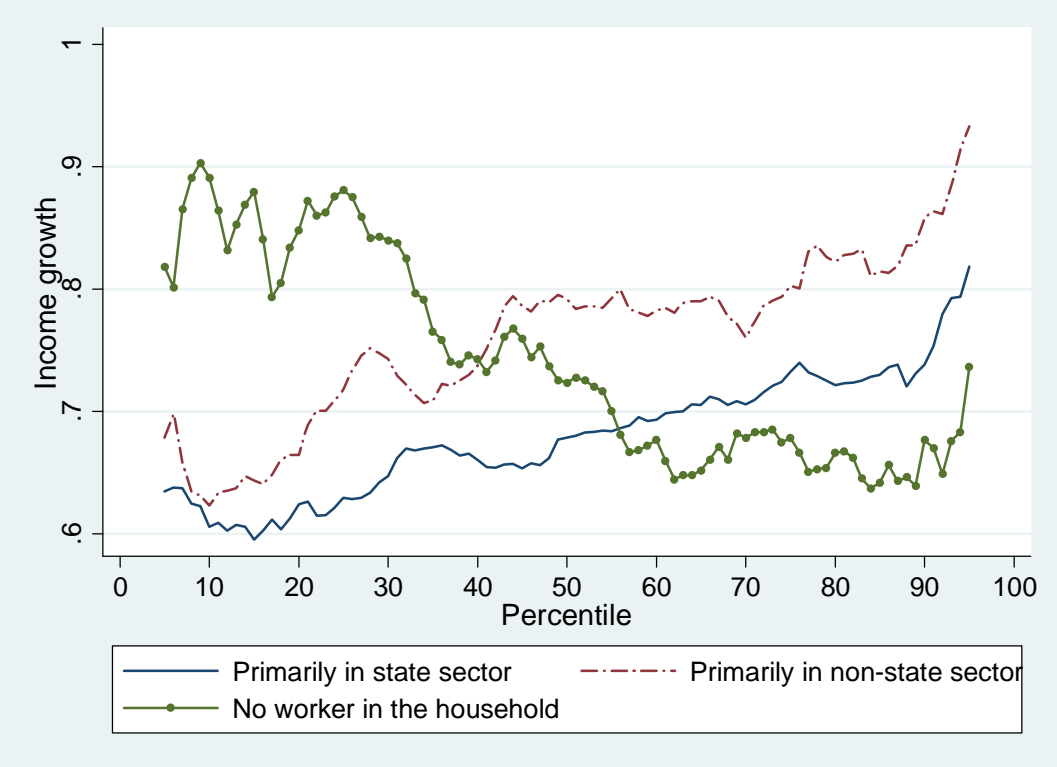
Figure 7.4 Growth Curves for Children, Adults, and the Elderly, 2002 and 2007
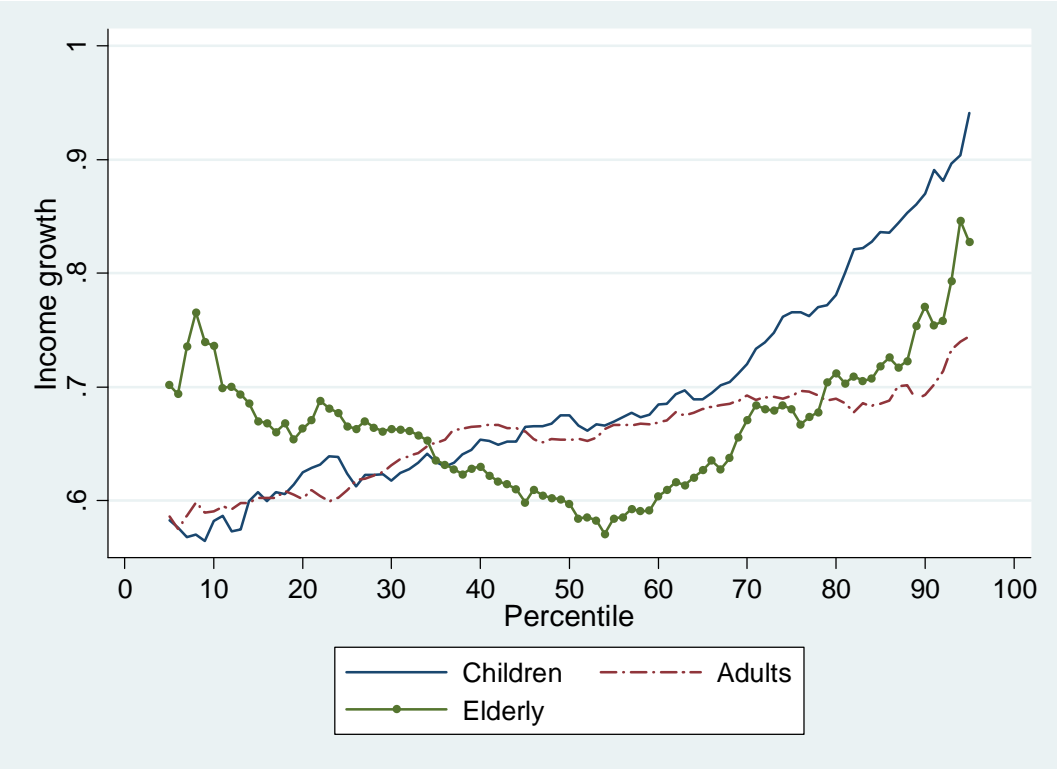
Source: Authors' computations from the CHIP.

Figure 7.5 Growth Curves for Individuals Where the Heads of the Household Have Various Levels of Education, 2002 to 2007
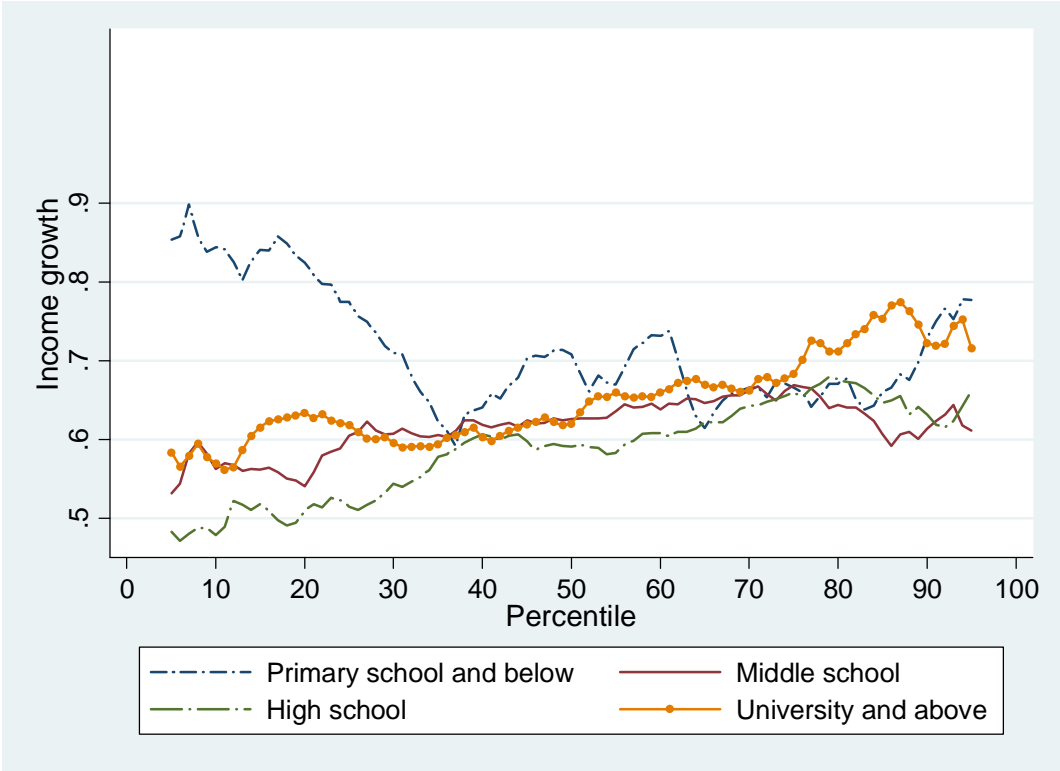
Source: Authors' computations from the CHIP.

Table 7.1. *Income inequality 1988, 1995, 2002, and 2007, according to various inequality indices*

	Mean income	Median income	Gini	MLD	Theil index	Proportion having income above 200 percent of median income Percent
1988	4520	4173	0.2104	0.0726	0.0768	3.60
1995	6037	5034	0.3340	0.1931	0.2422	8.80
2002	8078	6993	0.3039	0.1554	0.1551	6.08
2007	13796	11593	0.3229	0.1790	0.1753	6.82

Source: Authors' computations using the CHIP data, in 2002 prices with adjustments for regional differences in living costs.

Table 7.2. *Absolute poverty in urban China, 1988, 1995, 2002, and 2007*

FGT indices: 1761 as the poverty line

	FGT(0), Poverty rate	FGT(1)	FGT(2)
1988	0.0135	0.0031	0.0089
1995	0.0269	0.0062	0.0027
2002	0.0106	0.0022	0.0008
2007	0.0014	0.0004	0.0002

FGT indices: 3522 as the poverty line

	FGT(0), Poverty rate	FGT(1)	FGT(2)
1988	0.3287	0.0648	0.0223
1995	0.2439	0.0591	0.0228
2002	0.1114	0.0261	0.0096
2007	0.0241	0.0049	0.0016

Source: Authors' computations from the CHIP.

Table 7.3. *Relative poverty in urban China, computed using various relative poverty lines, 1988, 1995, 2002, and 2007*

Percentages of persons under various percentages of the median income	1988 percentage	1995 percentage	2002 percentage	2007 percentage
40%	0.98	4.13	5.15	5.92
50%	3.23	8.49	10.90	11.81
60%	8.00	15.21	18.06	18.87
70%	15.67	24.45	25.67	26.40

Source: Authors' computations from the CHIP.

Table 7.4. *Components and growth of household income per capita, 2002 and 2007*

	Household income per capita		Growth	
	2002	2007	Amount	Annualized growth rate (%)
Earnings	5573.92	9071.66	3497.74	10.23
Pensions	1399.50	2642.54	1243.04	13.56
Imputed rents of owner-occupied housing	483.55	1458.79	975.24	24.71
Business income	266.37	985.65	719.28	29.91
Property income	91.63	209.81	118.18	18.02
Income in-kind	81.87	88.40	6.53	1.55
Housing subsidies	231.22	86.74	-144.48	-17.81
Net transfer income	-49.70	-747.44	-697.74	71.97
Total per capita income	8078.37	13796.14	5717.77	11.30

Source: Authors' computations from the CHIP. Amounts are in 2002 prices.

Table 7.5. *Household income per capita and its decomposition, 2002 and 2007*

	2002			2007		
		Concentration			Concentration	
	Proportion	coefficient	Contribution	Proportion	coefficient	Contribution
Earnings	69.00	0.2930	66.52	65.76	0.3101	63.15
Pensions	17.32	0.3341	19.04	19.15	0.3116	18.48
Imputed rents of owner-occupied housing	5.99	0.3353	6.60	10.57	0.3421	11.20
Business income	3.30	0.0580	0.63	7.14	0.3650	8.08
Property income	1.13	0.4768	1.78	1.52	0.7335	3.45

Income in-kind					
1.01	0.4836	1.61	0.64	0.4840	0.96
Housing subsidies					
2.86	0.3485	3.28	0.63	0.2255	0.44
Net transfer income					
-0.62	-0.2612	0.53	-5.42	0.3439	-5.77
Total per capita income					
100	**0.3039**	100	100	**0.3229**	100

Source: Authors' computations from the CHIP.

Table 7.6. *Decomposing differences in the Gini coefficient for 2002 and 2007 by income sources*

Income source	u_{02}^* C_{02}	u_{07}^* C_{07}	Contribution to changed Gini (Column 2 - column 1)	$C_{02}(u_{07} - u_{02})$	$u_{02}(C_{07} - C_{02})$	$C_{07}(u_{07} - u_{02})$	$u_{07}(C_{07} - C_{02})$
Column number	1	2	3	4	5	6	7
Earnings	0.2022	0.2039	0.0018	-0.0095	0.0118	-0.0100	0.0112
Pensions	0.0579	0.0597	0.0018	0.0061	-0.0039	0.0057	-0.0043
Imputed rents of owner-occupied housing	0.0201	0.0362	0.0161	0.0154	0.0004	0.0157	0.0007
Business income	0.0019	0.0261	0.0241	0.0022	0.0101	0.0140	0.0219
Property income	0.0054	0.0111	0.0058	0.0019	0.0029	0.0029	0.0039
Income in- kind	0.0049	0.0031	-0.0018	-0.0018	0.0000	-0.0018	0.0000
Housing subsidies	0.0100	0.0014	-0.0085	-0.0078	-0.0035	-0.0050	-0.0008
Net transfer income	0.0016	-0.0186	-0.0203	0.0125	-0.0038	-0.0165	-0.0328
Total per capita income	0.3039	0.3229	0.0190	0.0190	0.0141	0.0049	-0.0001

Source: See Table 7.5. Values in column 3 are equal to the sum of the values in columns 5 and 6, as well as the sum of the values in columns 4 and 7 (ignoring rounding errors).

Table 7.7. *Population shares, mean income, income inequality, and relative poverty among individuals living in households primarily connected to the state sector, the private sector, and those with no workers, 2002 and 2007*

	2002			2007		
	Primarily in the state sector	Primarily in the private sector	No workers	Primarily in the state sector	Primarily in the private sector	No workers
Proportion of all individuals (%)	63.99	25.13	10.89	53.99	34.78	11.23
Average income	8537	6718	8519	14646	12112	14924
Gini	0.2868	0.3165	0.3296	0.3063	0.337	0.3292
Percentage of persons under 40% of the median income	4.02	5.18	8.68	4.51	5.95	6.73
Percentage of persons under 50% of the median income	8.94	9.42	15.51	10.38	12.79	12.95
Percentage of persons under 60% of the median income	15.05	16.92	22.78	17.65	19.91	19.41
Percentage of persons under 70% of the median income	23.12	26.25	29.82	25.44	27.47	25.70
Percentage of persons above 200% of the	8.59	11.2	12.72	9.95	11.88	11.13

median income

Table 7.8. *Population shares, mean income, income inequality, and relative poverty among children, adults, and the elderly, 2002 and 2007*

	2002			2007		
	Children	Adults	Elderly	Children	Adults	Elderly
Population shares	14.31	74.95	10.74	12.64	74.74	12.62
Average income	7084	8155	8899	12498	13751	15365
Gini	0.2914	0.3043	0.3008	0.3296	0.3194	0.3275
Percentage of persons under 40% of the median income	4.97	5.02	6.94	6.17	6.00	5.18
Percentage of persons under 50% of the median income	10.26	10.67	12.36	12.32	12.00	10.15
Percentage of persons under 60% of the median income	17.02	17.69	19.56	18.92	18.82	17.74
Percentage of persons under 70% of the median income	24.60	25.48	26.77	26.38	26.52	24.37
Percentage of persons above 200% of the median income	8.59	9.99	9.95	11.60	10.80	12.42

Note: A person is regarded as a child if she is under the age of 16 and as elderly if she is age 61 or older.
Source: Authors' computations from the CHIP. Amounts are in 2002 prices.

Table 7.9. *Population shares, mean income, income inequality, and relative poverty among individuals living in households with the heads of households having different levels of education, 2002 and 2007*

	2002				2007			
	Primary and below	Middle school	High school	University and above	Primary and below	Middle school	High school	University and above
Population shares	7.45	29.51	36.98	26.07	5.75	25.58	35.27	33.39
Average income	5949	6815	7988	10243	10121	11063	13041	17319
Gini	0.2957	0.297	0.2844	0.287	0.2876	0.3025	0.3082	0.3107
Percentage of persons under 40% of the median income	4.65	5.05	4.75	3.36	4.08	6.05	6.45	3.95
Percentage of persons under 50% of the median income	10.47	9.29	9.77	8.22	8.07	10.59	11.67	9.23
Percentage of persons under 60% of the median income	17.96	16.89	16.60	16.11	14.51	19.45	19.08	16.22
Percentage of persons under 70%	26.62	25.77	24.34	24.32	24.29	26.18	26.77	24.75

of the median income							
Percentage of persons above 200% of the median income	7.60	9.43	8.82	9.52	9.31	9.36	9.17	11.16

Source: Authors' computations from the CHIP. Amounts are in 2002 prices.

Table 7.10. *Income function: Dependent variable, log of household per capita income*

	2002	2007
Schooling of household head	0.047***	0.050***
	[0.001]	[0.001]
Age of household head	-0.006**	-0.003*
	[0.002]	[0.002]
Age of household head squared	0.0001***	0.0001***
	[0.00002]	[0.00002]
No. of children in the household	-0.066***	-0.065***
	[0.007]	[0.007]
No. of adults working in the state sector	-0.147***	-0.152***
	[0.004]	[0.004]
No. of adults working in the non-state sector	-0.196***	-0.185***
	[0.004]	[0.004]
No. of non-working adults	-0.232***	-0.247***
	[0.006]	[0.007]
No. of elderly with pensions	0.101***	0.087***
	[0.007]	[0.007]
No. of elderly without pensions	-0.126***	-0.070***

	[0.011]	[0.012]
Han ethnicity	-0.068***	0.016
	[0.016]	[0.017]
Log of city per capita income	0.861***	0.843***
	[0.016]	[0.012]
Beijing		
Shanxi	-0.070***	0.010
	[0.020]	[0.017]
Liaoning	-0.019	-0.003
	[0.016]	[0.015]
Jiangsu	-0.032**	-0.014
	[0.015]	[0.014]
Anhui	-0.049**	-0.007
	[0.019]	[0.017]
Henan	-0.027	-0.012
	[0.017]	[0.016]
Hubei	-0.029	-0.017
	[0.018]	[0.018]
Guangdong	0.047***	0.130***
	[0.015]	[0.014]
Chongqing	-0.056***	0.050***
	[0.020]	[0.019]
Sichuan	-0.049***	-0.031*
	[0.019]	[0.018]

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Yunnan	-0.025	0.043**
	[0.018]	[0.018]
Gansu	-0.054***	-0.035*
	[0.020]	[0.018]
Constant	1.264***	1.238***
	[0.158]	[0.136]
Adj. R^2	0.4466	0.4785
No. of observations	20624	21545

** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level.

Note: Authors' estimates from the CHIP.

Table 7.11. *Predicted probabilities of relative poverty and affluence, 2002 and 2007 (percentages)*

Individual	City income	Description of the individual	Relative poverty (percentage)		Affluence (percentage)	
Year			2002	2007	2002	2007
A	Low	Household head aged 47.9 years, 9 years of education, 2 adults employed in the state sector, 1 non-working adult, 1 child, Han	4.67			
			15.5	55.36	1.09	0.35
	Middle		2.13			
			6.0	25.60	3.11	1.55
	High		0.31			
			1.7	6.56	29.99	9.24
B	Low	The same as A, but the household increases by one elderly person without a pension	9.06			
			26.2	66.81	0.65	0.35
	Middle		4.24			
			11.0	35.83	1.86	1.55
	High		0.62			
			3.2	10.23	20.18	9.23
C	Low	The same as A, but one worker becomes a non-worker	6.84			
			21.1	66.09	0.85	0.24
	Middle		3.16			
			8.5	35.10	2.44	1.09
	High		0.46			
			2.4	9.94	25.01	6.62
D	Low	The same as C, but the household head has 16 years of education	1.91			
			6.5	32.33	3.67	1.70

	Middle		0.86			
	High		2.3	11.70	9.99	7.23
			0.12			
			0.6	2.63	59.66	33.43
E	Low	The same as D, but there is no child in the household	1.39			
	Middle		5.1	28.57	5.84	2.52
	High		0.62			
			1.8	9.99	15.32	10.42
			0.09			
			0.5	2.21	70.68	42.84
F	Low	The same as E, but the household increases by one elderly person with a pension	0.81			
	Middle		3.2	19.31	7.41	3.83
	High		0.36			
			1.1	6.23	18.91	15.17
			0.05			
			0.3	1.34	75.66	53.56
G	Low	An elderly couple living alone. The household head is 65 years old, has nine years of education, there is no child in the household, and one elderly person has a pension	0.24			
	Middle		0.9	3.54	51.98	31.67
	High		0.11			
			0.3	1.01	75.93	67.58
			0.02			
			0.1	0.21	97.68	93.07

Note: Low/median/high city income is defined as the mean for the first decile / the median / the tenth decile for the year under study.

Poverty is defined as living in a household with average disposable income that is less than 70 percent of the median income in urban China during the same year.

Source: Estimates presented in the Appendix to this chapter.