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Shi Li

Chuliang Luo

Terry Sicular

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by

LI Shi, LUO Chuliang and Terry Sicular

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Department of Economics
Social Science Centre
The University of Western Ontario
London, Ontario, N6A 5C2
Canada

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Overview: Income Inequality and Poverty in China, 2002-2007

LI Shi, LUO Chuliang, and Terry Sicular

I. Introduction

It has been more than three decades since China started to transform its economy institutionally and structurally. The economic transformation has stimulated rapid economic growth in both GDP and personal incomes. From 1978 to 2007 the annual growth of GDP averaged close to 10 percent and that of household per capita income more than 7 percent. The rate of economic growth was even more impressive in later years, including the period under study in this chapter. From 2002 to 2007 annual growth of GDP was 11.6 percent, and of rural and urban household income per capita 6.8 and 9.6 percent, respectively.[1]

Although the reforms were successful in promoting GDP growth, by the early 2000s concerns about rising disparities and sustainability prompted the government to announce a new development strategy emphasizing sustainable, harmonious growth. A new policy program, referred to as the "vision of scientific development" (*kexue fazhanguan*), or "the Hu-Wen new policies" (*Hu-Wen xin zheng*), aimed to promote development in urban and rural areas, reduce regional disparities, narrow income inequalities, and establish a social protection network with full coverage for all people. As discussed in Chapters 1 and 5, the new policy program contained a series of pro-rural measures. These included the elimination of the agricultural taxes, which had been in place for almost sixty years, and the adoption of new farm subsidies, e.g., for grain production, purchase of agricultural inputs, and farm insurance (Lin and Wong 2012).[2] By the end of 2007 Chinese rural households were no longer paying agricultural taxes, and total agricultural production subsidies from the central government exceeded 50 billion yuan (Ministry of Agriculture 2007; Lin and Wong 2012).

The pro-rural policies also addressed social welfare concerns. In the early 2000s the government initiated programs that reduced the costs of education in poor areas, and in 2006-7 the central government announced a policy of free education in rural areas through junior middle school, eliminating all fees for the first nine years of education (see Chapter 4). During the same time frame, subsidized rural cooperative health care and a rural medical care relief fund were put in place. Although these measures did not have an immediate impact on household earnings, they reduced household outlays on education and health and encouraged schooling, which in the long term can enhance incomes.

The rural minimum living guarantee (*zuidi shenghuo baozheng*, or *dibao*) program was another important component of the rural policy program. The number of rural people supported by *dibao* increased enormously, from 4 million in 2002 to 36 million in 2007. On average, in 2007 each individual received about 480 yuan, equivalent to 60 percent of the official poverty line in rural areas (Ministry of Civil Affairs 2007; see Chapters 1 and 5).

During this period the Chinese government also maintained or expanded policies benefiting lower-income urban households, such as the urban *dibao* program and the provision of low-cost housing. Some steps were also taken to improve the situation of poor rural-to-urban migrants, e.g., regulations issued in 2003 regarding the treatment of vagrants and beggars, which provided social services to poor individuals regardless of their place of origin (Li 2004; State Council 2003). The impact of such programs on urban inequality, however, has been mixed. Analyses of the urban *dibao* program, for example, reveal that it played an important role in alleviating urban poverty, but did not substantially reduce urban income inequality (Li and Yang 2009; Ravallion et al. 2006). Moreover, the number of urban households benefiting

from the program did not increase significantly during the period under study here.

China's economic growth is closely related to urbanization. The share of the urban population in China's total population has increased almost one percentage point each year since 1990. By the end of 2007, the share of the urban population in the total population was 45 percent. Rural-to-urban migration has been an important part of the urbanization process. According to the Second National Agricultural Census, in 2006 the number of rural-urban migrant workers who were employed in urban areas for more than six months per year was about 132 million. Although rural migration can contribute to the growth of household income in rural areas, it can also create competition in urban labor markets that potentially affects urban incomes and inequality as well.

In China rural-urban and regional divisions in terms of economic and social development are substantial. These spatial divisions were significant during the planning period (Démurger et al. 2002) and have persisted into the reform era. Concerns about the urban-rural income gap prompted many of the rural support policies outlined above. Similarly, differential economic growth between coastal and inland regions led the Chinese government to adopt regional balancing policies. In 1999 the central government implemented the western development strategy (*xibu dakaifa zhanlüe*) and increased investment in infrastructure and fiscal transfers to western provinces (Fang, Zhang, and Li 2007). This was followed by further programs supporting other lagging regions, such as the revival the Northeast strategy (*zhenxing dongbei*) in 2003 and the rise of the central region (*zhongbu jueqi*) scheme aimed at the central provinces in 2006 (Yao 2009; Chung, Lai, and Joo 2009). Such policies could have an impact on regional income disparities.

Using data from the 2002 and 2007 waves of the China Household Income

Project (CHIP) survey, in this chapter we measure and analyze income inequality and poverty during the 2002-2007 period. Here we report overall nationwide patterns and trends. The findings reported in this chapter establish the groundwork for the later chapters in this volume, which provide in-depth analyses of particular sectors, programs and policies.

We begin in the next section with a brief review of the main findings in the recent literature on changes in China's income inequality and summarize the results from the previous volume based on the 2002 CHIP survey (Gustafsson, Li, and Sicular 2008). In Section III we explain key features of our data. In Section IV we present our central findings regarding levels and trends in China's national income inequality, and we also examine the sources of income. Despite substantial growth in mean incomes between 2002 and 2007, and despite the various policies adopted to promote harmonious growth, during this period nationwide inequality continued an upward trend. This conclusion is robust to choice of income definition, weights, and inequality index, and to the treatment of migrants.

A growing number of rural people have moved to the cities, but they are not fully captured in the official National Bureau of Statistics (NBS) household surveys. This leads to a potential bias in estimations of income growth and inequality among Chinese households. Other chapters in this volume examine the income and inequality of the rural and formal urban populations, but not that of rural-urban migrants. Therefore, in this chapter we include a separate section on income and inequality among rural-urban migrants. Following the method used by the NBS to identify the location of residence, we define migrants as those individuals who have a rural household registration but who reside in a city on a long-term, stable basis. Short-term, temporary migrants are treated as members of their rural households of

origin and are included in the rural survey dataset (see further discussion in Chapter 1 and Appendix II).

Our analysis shows that between 2002 and 2007 the incomes of long-term, stable rural-urban migrants grew rapidly, and inequality among migrants declined. Including migrants in our calculations of inequality reduces inequality within the urban areas, but due to the relatively low share of this group in the national population, it does not substantially alter the national levels of inequality. Temporary and short-term migration, however, contributed to income growth of rural households and thus likely moderated the income gap between the urban and rural areas (see also Chapter 6 in this volume).

The increase in China's national inequality between 2002 and 2007 reflects changes in the spatial structure of China's income distribution, as discussed in Sections VI and VII. The continued widening of the urban-rural income gap is of particular concern because the urban-rural divide remains a major source of inequality. Analysis of inequality among geographic regions reveals that regional income differentials in fact contribute a relatively small share of national inequality. The overwhelming majority of national inequality is associated with inequality within regions, including urban-rural gaps within regions.

Finally, in Section VIII we examine nationwide trends in poverty (later chapters in this volume will examine rural and urban poverty separately). Between 2002 and 2007 national poverty, as measured using an absolute poverty line, continued an ongoing decline and reached historically low levels. Relative poverty, however, remained unchanged. We comment on these and other findings in a concluding section.

II. Main Findings of Previous Studies

The rise in income inequality in China during the reform era has been widely documented. Past studies have found that nationwide inequality rose rapidly between the late 1980s and the mid-1990s but then tapered off from the mid-1990s through the early 2000s. Estimates by Ravallion and Chen (2007) and the World Bank (2009a) show income inequality rising from the late 1980s through 1994, dipping a bit in the late 1990s, and then edging upward thereafter, so that by the early 2000s inequality was only slightly higher than it was in the mid-1990s. Analyses based on the 1995 and 2002 CHIP surveys similarly report that inequality remained more or less unchanged between 1995 and 2002 (Gustafsson, Li, and Sicular 2008a; Khan and Riskin 2008).

Gustafsson, Li, and Sicular (2008a) identify several equalizing processes that emerged in the late 1990s that might explain these trends. They include the spread of wage employment in the rural areas, the catching up of lower-income provinces with higher-income provinces in some regions, shared macroeconomic growth, and, within urban areas, broader implementation of the urban housing reforms.

The emergence of equalizing processes from the late 1990s to the early 2000s raises the possibility that inequality in China may have turned the corner. Findings based on the 2007 CHIP data reported below, however, show that after 2002 inequality in China resumed its upward trajectory. The analysis in this and later chapters finds evidence that some equalizing processes continued to operate during this period, but they were insufficient to offset the stronger dis-equalizing forces.

Spatial income differentials figure large in the literature on inequality in China. The widening gap between urban and rural incomes is consistently cited as an important factor underlying national inequality (e.g., Sicular et al. 2010; Ravallion

and Chen 2007; World Bank 2009a; Kanbur and Zhang 2009). This finding is robust across numerous studies using different measures of income and inequality. Regional income differences between the eastern, central, and western regions have also received attention, although several recent studies conclude that regional differences are not as important as within-region and rural-urban inequality (Yao 2009; Fan, Kanbur, and Zhang 2010; Wan 2007). Below we explore rural-urban and regional income differentials using the 2007 CHIP data; our findings are generally consistent with these other studies.

China has an enviable record of poverty reduction (World Bank 2009a; Ravallion and Chen 2007; Chen and Ravallion 2008). Although various studies differ in their choices of poverty measures and poverty lines, they agree on broad trends over time. During the early and mid-1990s poverty in China declined substantially, but then in the late 1990s to the early 2000s the downward trend stalled (World Bank 2009a; Ravallion and Chen 2007; Minoiu and Reddy 2008). Some recent studies suggest that after 2001 poverty reduction once again accelerated (World Bank 2009a). Our estimates of absolute poverty show progress in terms of poverty reduction from 2002 through 2007.

Most of the literature on poverty in China measures poverty using an absolute poverty line based on the cost of basic food and non-food consumption needs. As countries develop, deprivation is associated more with relative than with absolute living standards. In view of China's transformation from a low- to a middle-income country, we extend the analysis of poverty and measure relative poverty. By such a measure, China's poverty record in recent years is less encouraging.

Poverty, like inequality, has spatial dimensions: it is primarily rural, and its incidence is higher in western China than elsewhere (World Bank 2009a; Ravallion

and Chen 2007). As the overall level of poverty has declined, however, the remaining poor have become increasingly dispersed. The spatial pattern of poverty is important in terms of the design of poverty alleviation programs, which in China have relied heavily on geographic targeting (World Bank 2009a). Therefore, in the analysis below we also investigate the regional aspects of poverty.

III. Data and Sample Weights

The data used in this chapter come from the last two waves of the CHIP household surveys, in 2002 and 2007. The surveys cover three types of households: urban households, rural households, and rural-urban migrant households. The samples of urban households and rural households are subsamples of the large NBS urban and rural household survey samples. In 2002, the NBS samples included 680,000 households in rural areas and 40,000 households in urban areas.[3] In 2007, the urban sample increased to 59,000 households, but the size of the rural sample remained more or less unchanged.[4]

The 2002 wave of the CHIP rural survey selected 9,200 households from the NBS rural household survey. These households contain 37,969 individuals from 120 counties of twenty-two provinces. Provinces covered by the CHIP sample were selected so as to obtain representation of China's major regions. For the rural sample, the provinces include Beijing (representing the large metropolitan cities with provincial administrative status); Hebei, Liaoning, Jiangsu, Zhejiang, Shandong, and Guangdong (representing the eastern region); Shanxi, Jilin, Anhui, Jiangxi, Henan, Hubei, and Hunan (representing the central region); and Chongqing, Sichuan, Guizhou, Yunnan, Guangxi, Shaanxi, Xinjiang, and Gansu (representing the western region).[5] The provincial statistical bureaus were given autonomy to decide the

number of counties in the CHIP subsample, but they were required to select counties and villages representative of different income levels. The 2002 urban survey selected 6,835 households. These households contain 20,632 individuals surveyed in seventy cities in eleven of the twenty-two provinces of the rural survey, including Beijing (large municipality); Liaoning, Jiangsu, Guangdong (eastern); Shanxi, Anhui, Henan, Hubei (central); and Chongqing, Sichuan, Yunnan, and Gansu (western). These households are largely formal urban residents with local household registration (*hukou*). A detailed description of the 2002 survey can be found in Li et al. (2008).

The 2002 rural and urban household questionnaires were designed for the purpose of deriving household income that could be comparable internationally. The households were asked questions regarding wage and other income components for each of their working members, and regarding income from family businesses. In order to estimate the imputed rent of owner-occupied private housing, several housing-related questions were included, such as the self-estimated market value and the market rent of owner-occupied housing.

The 2002 CHIP survey also included a separate, add-on sample of 2,000 rural-urban migrant households, which were selected from the capital city plus one middle-sized city in each province that is represented in the CHIP urban survey. Two hundred households were selected from each of the provinces in the eastern and central regions and 150 households from each of the provinces in the western region. Within each province, 100 households were allocated to the capital city and the remainder to other cities. Within the cities, rural-urban migrant households were selected from residential communities, hence the migrant workers living in construction sites and factories were excluded from the sample. Since in our analyses we only use the subsample of migrants who are long-term, stable residents of cities,

this aspect of the 2002 sample selection is not overly problematic. The migrant questionnaires include questions regarding wage, business income, consumption, and job characteristics of individual members and households.

The 2007 CHIP surveys of rural and urban households were conducted in sixteen provinces, including Beijing, and Shanghai (representing the large metropolitan cities with provincial administrative status); Fujian, Guangdong, Liaoning, Jiangsu, and Zhejiang (eastern); Anhui, Hebei, Henan, Hubei, and Shanxi (central); and Chongqing, Sichuan, Yunnan, and Gansu (western). The survey of rural-urban migrant households covered nine of the above sixteen provinces. The CHIP surveys cover 13,000 rural households, 10,000 urban local households, and 5,000 rural-urban migrant households. As in the 2002 surveys, the 2007 surveys of rural households and urban local households took subsamples from the large NBS sample, whereas the rural-urban migrant survey was conducted separately. For the 2007 migrant survey, sampling was carried out using a geographical grid. Cells from the grid were chosen randomly; within each selected cell, the survey team identified all employers and workplaces and drew up a list of all their migrant employees. Migrants were then selected randomly from this list of employees. The CHIP migrant survey sample is composed of the selected migrants and their household members. This approach is different from that used to construct the 2002 migrant sample. The change in the sampling method for migrants may affect comparisons across the two years; however, to some extent the consequences are mitigated by the fact that in our analysis we only include those migrants who are long-term, stable residents, and also by the use of population weights when incorporating the migrant subsamples into our urban and national calculations. More details about the 2007 survey are provided in Chapter 1 and Appendix I of this volume.

The questionnaires for the 2007 surveys include many but not all of the same questions as the 2002 surveys. However, new questions regarding migration status and behavior were added for the purpose of migration analysis.

The CHIP survey samples have several characteristics that may lead to an estimation bias if the samples are used without population-based sample weights. A detailed discussion of weights can be found in Appendix II of this volume and in Li et al. (2008). The key issues are (a) the CHIP sample was designed to be representative of four distinct regions (large municipalities with provincial status, eastern China, central China, and western China),[6] (b) not all provinces are included in the samples, and provincial coverage changed between 2002 and 2007, (c) provincial sample sizes are not proportional to their populations, and (d) the urban, rural, and migrant sample sizes are not proportional to their populations. In view of these features, when subsamples are combined among groups and regions, and for comparison over time, population weights are needed to make the samples representative and comparable across years.

As discussed in Appendix II of this volume, two alternative approaches are recommended for sample weights. The first is to use two-level weights based on the population shares of each group (urban, rural, and where relevant migrant) within each region. The second is to use three-level weights based on the population shares of each group (urban, rural, and where relevant migrant) within each province and region. In general, we use three-level weights, but to show the sensitivity of the estimation results to the weighting methods, in Table 2A.1 we present estimates of national incomes and inequality calculated using alternative weights.

With respect to income, our preferred measure is net disposable household per capita income. The NBS calculates an estimate of net disposable household income

that is published in the official sources and is provided in the CHIP datasets. As discussed elsewhere (Gustafsson, Li, and Sicular 2008a; Khan and Riskin 1998), the NBS calculation of net disposable income omits certain components of income. For this reason, we prefer an alternative calculation of income based on that outlined in Khan et al. (1992) and Khan and Riskin (1998), but adapted in light of recent shifts in the structure of income and data availability. Specifically, we calculate income as NBS income, plus imputed subsidies on subsidized rental housing, plus the imputed value of rental income on owner-occupied housing. The CHIP surveys contain information on estimated market rents and market housing values that are used to calculate these additional income components. For imputed rental income of owner-occupied housing, we use the estimates explained in Chapter 3 of this volume.[7] Below we refer to this alternative, broader measure of income as "CHIP income."

For purposes of comparison over time, we deflate the 2007 incomes using the consumer price indexes published by the NBS to obtain values in constant 2002 prices. For national calculations, we use the average national consumer price index. For separate analyses of the urban and rural areas, we use the separate urban and rural consumer price indexes (the urban consumer price index is used for rural-urban migrants). Between 2002 and 2007 the consumer price indexes show that on average nationwide consumer prices rose by 13.9 percent; in the urban areas consumer prices rose by 12.3 percent and in the rural areas by 16.4 percent.[8]

Several studies note that differences in costs of living among regions and provinces can lead to an overstatement of real inequality (Brandt and Holz 2006; Sicular et al. 2010). To obtain income that is comparable among regions in terms of purchasing power parity (PPP), we use the PPP-adjusted deflator from Brandt and Holz (2006) to correct for differences in living costs between urban and rural areas

and among provinces. Brandt and Holz (2006) provide the PPP deflators for 2002 that we apply to the 2002 CHIP data. For 2007 we update the Brandt and Holz PPP deflators using the official consumer price indexes for urban and rural areas by province, as published by the NBS.

IV. National Household Income Inequality: Main Findings

Table 2.1 shows mean national household per capita income and income inequality calculated using three commonly used inequality indices, the Gini coefficient and two Theil indices. Although less common than the Gini, the Theil indices have desirable properties and, unlike the Gini, can be decomposed to analyze inequality between and within groups, which is useful for us to examine the role of urban-rural inequality.[9] We also show the Lorenz curve, which gives a graphical depiction of inequality and is closely related to the Gini.[10]

Our preferred estimates are calculated using the CHIP definition of income, including migrants, and with three-level population weights (urban/rural/migrant group x region x province). As our preferences may not be universally shared, and for ease of comparison with other studies, we also present estimates calculated using the NBS definition of income, and excluding migrants. Appendix Table 2A.1 gives estimates calculated using alternative weighting methods, and Appendix Table 2A.2 gives estimates calculated using alternative estimates of imputed rents on owner-occupied housing.

Table 2.1 about here

On average, incomes increased markedly between 2002 and 2007. Regardless of the income definition, treatment of migrants, or choice of weights, mean income increased more than 70 percent during the five years (calculated using constant 2002

prices), implying an average annual growth in income of 12 to 13 percent. Income growth was more rapid for the CHIP definition of income than for the NBS definition, reflecting growth in imputed rents on owner-occupied housing and the expansion of urban homeownership, as discussed in Chapter 3 of this volume. The inclusion of migrants modestly increases the mean income levels in 2007, and yields more rapid growth in income.

On balance, growth in mean income should reduce inequality: if mean income increases while the distribution of income around the mean stays unchanged, then measured inequality will decline. Despite the substantial growth in national mean income, however, inequality in China increased.

From 2002 to 2007 China's Gini coefficient rose by 5.0 to 5.5 percent. For our preferred calculation (CHIP income, including migrants), the Gini rose by 5.0 percent, from 0.46 in 2002 to 0.48 in 2007. This level of inequality is moderately high by international standards.

Increases in the Theil measures of inequality were larger, ranging from 9.5 percent for G(1) to nearly 14.6 percent for G(0). Differences in inequality trends among the three measures reflect that each measure emphasizes different sections of the income distribution. The Gini emphasizes income differences in the middle of the distribution, the GE(0) places more weight on income differences in the lower tail of the distribution, and the GE(1) places even weight on income differences across the income distribution.

A graph of the Lorenz curves reveals the pattern of change in income distribution that underlies the increases in these inequality indices (Figure 2.1). The Lorenz curve for 2007 is everywhere lower than that for 2002, which is consistent with an increase in inequality as measured by the inequality indices in Table 2.1.

Figure 2.1 about here

Figure 2.2 shows the distribution of income across income decile groups, ordered from the poorest 10 percent to the richest 10 percent. The height of the light grey bars gives mean income by decile in 2002, and the height of the dark grey bars gives mean income by decile in 2007 (in constant 2002 prices). The black line shows the percentage increase in income between 2002 and 2007 (in constant prices) for each decile.

Figure 2.2 about there

It is clear from Figure 2.2 that income increased for all decile groups, but the increase was smaller for the poorer deciles than for the richer deciles. The income of the bottom decile increased by 401 yuan, or 45 percent (in constant 2002 prices). This is a substantial increase, but in both absolute and relative terms it lags far behind that of the higher income groups. The income of the top decile, for example, increased by more than 14,000 yuan, or 86 percent.

Do these patterns of inequality reflect changes in the composition of income? Clues about the role of different income sources can be found in Table 2.2, which shows the income shares, Gini concentration ratios, and contributions to overall inequality of each component of per capita income. The contributions to inequality are calculated using the standard inequality decomposition by factor components (Shorrocks 1982).

Table 2.2 about here

Looking first at urban incomes, one can see that the concentration ratio of urban household incomes is much higher than the Gini of the total income distribution, implying that on balance urban income was concentrated among higher-income groups. This was especially true for urban income from assets and imputed rent on

owner-occupied housing. More generally, the numbers in Table 2.2 reveal the emergence of private property as a new and increasingly important source of inequality. Nationally, including both rural and migrant households, the contribution of assets and imputed rent to total inequality rose from 8 percent in 2002 to 13 percent in 2007. If calculated using alternative estimates of imputed rent, the contribution of assets and imputed rent to total inequality rose from 10 to 19 percent.[11]

The negative contribution of urban net transfers (including both government and private transfers) is also noteworthy, especially in 2007 when they reduced total inequality by 5 percent. The increasingly equalizing role of urban net transfers likely reflects the expansion of government urban welfare programs, such as the urban minimum living guarantee program (see Chapter 7) and income taxes (see Chapters 7 and 10).

The concentration coefficient of migrant income was similar to that of urban income, but owing to the small population and income share of migrants, the overall impact on national inequality remained small, although it increased over time. In Section V we discuss the income and inequality of migrants in more detail.

In contrast, the concentration ratio of rural household income was close to zero in 2002 and became negative in 2007, implying that rural household income had an increasingly equalizing effect on total inequality. Income from farming was the most equalizing source of rural income. Income from short-term migrant work by rural household members was also equalizing, and became more equalizing from 2002 to 2007. In-depth analysis of rural incomes and inequality can be found in Chapter 6 in this volume.

Most analyses of inequality in China do not adjust for differences in the cost of living among regions. The cost of living is typically higher in wealthier areas,

therefore measured inequality will be overstated as it reflects price differentials as well as real differences in purchasing power. Table 2.3 presents a comparison of inequality estimates calculated with and without adjustments for PPP. In all cases, PPP adjustments reduce the measured level of inequality. For example, adjusting for PPP reduces the 2007 Gini coefficient by 12 percent, from 0.483 to 0.423.

Table 2.3 about here

Although the measured level of inequality is lower with the PPP adjustment, it remains moderately high compared to inequality estimates for other countries (which typically are not adjusted for domestic price differentials). The 2007 Gini coefficient, for example, remains well above 0.40 regardless of whether it is calculated using NBS or CHIP income. Moreover, PPP adjustments do not alter the conclusion that inequality rose substantially between 2002 and 2007. In fact, the increase in PPP inequality is 8 percent, which is greater than the 5 percent increase for our non-PPP estimates.

V. Household Income Growth and Inequality of Rural-Urban Migrants

Because other chapters in this volume do not fully explore incomes and inequality among rural-urban migrants, here we include a separate analysis of incomes and inequality for this group. Our analysis draws on data from the CHIP migrant surveys carried out in 2002 and 2007. As mentioned earlier, in our analysis we include only long-term, stable rural-urban migrants. Following the criteria used to classify individuals in the NBS household surveys (on which the CHIP surveys are based), we define long-term, stable rural-urban migrants as individuals whose origins are in rural areas, who have lived in cities for more than six months, and who are either single or living with a spouse. A detailed explanation of the classification criteria can be

found in Appendix II to this volume.

We note that limiting our analysis to long-term, stable migrants reduces the potential bias due to differences in the sampling methods used for the 2002 and 2007 migrant surveys. As noted above, the 2002 survey does not capture migrants who live in temporary or employer-provided housing. This group is largely composed of short-term, temporary migrants, whom we exclude from our long-term, stable migrant sample (but who are represented in the rural sample).

Table 2.4 shows the level and composition of per capita household income of migrants. The mean income of the migrants falls between that of rural and urban households. On average, in 2002 migrant income was 2.6 times rural per capita income and 80 percent of urban per capita income. In 2007 migrant per capita income was 3.6 times rural per capita income and 95 percent of urban per capita income. Migrants enjoyed rapid income growth between 2002 and 2007. On average, migrant per capita income in real terms grew at an annual rate of 16 percent, exceeding the growth rates of both rural and urban incomes. Thus, between 2002 and 2007 migrant income moved closer to that of urban households. To some extent, the higher migrant income growth rate may be due to a self-selection process. It is more likely that low-income migrants choose to return to their original homes, whereas high-income migrants choose to remain in the cities on a more long-term and stable basis.

Table 2.4 about here

Looking at the growth by income component, we find that the wage income of migrants grew at a very rapid annual rate of 29 percent, so that its share of total migrant income rose from 39 percent in 2002 to 68 percent in 2007. As shown in Table 2.4, almost 90 percent of the total income growth can be attributed to the

growth of wage income. Growth of income from household businesses was slow, less than 2 percent annually. The rapid growth of wage income and slow growth of family business income shown here to some extent may be due to the change in the migrant survey sampling procedure in the two years. In 2002 the survey was conducted in neighborhood communities (*shequ*) and did not include any migrant workers living in construction sites or factory dormitories; in 2007 migrants were selected based on employer records of migrant employees. This could lead to an underrepresentation of wage employees and an overrepresentation of self-employed migrants in 2002 as compared to 2007. Nevertheless, as discussed in Chapter 6 in this volume, rapid growth in migrant wage income at this time likely also reflected real economic factors, in particular, growth in labor demand and increased reservation wages associated with higher farm earnings.

Due to the increase in the wage share, which is relatively equally distributed, as well as growth in incomes overall, income inequality for migrants declined from 2002 to 2007, as shown by the Lorenz curves in Figure 2.3 and the inequality indices and inequality decomposition reported in Tables 2.5 and 2.6. Again, changes between 2002 and 2007 may in part reflect differences in the sampling procedures.[12]

Figure 2.3 about here

Table 2.5 about here

Table 2.6 about here

How does the inclusion of long-term, stable rural-urban migrants affect national inequality? As shown in Table 2.1, the inclusion of these migrants reduces national inequality only slightly, by less than 1 percent in both years. Including migrants reduces national inequality because they tend to fall at the center of the income distribution, but the reduction is minimal because the population share of long-term,

stable migrants is relatively small, although increasing. According to data from the 2000 census, this group constituted 2.5 percent of the national population and 7.4 percent of the urban population. According to data from the 2005 mini census, this group constituted 3.2 percent of the national population and 7.6 percent of the urban population (see Appendix II in this volume).

If we limit our attention to the urban sector, within which the migrants constitute a larger share of the population, the inclusion of long-term, stable migrants when estimating inequality has a greater impact (Table 2.7). In 2002 the inclusion of migrants reduced urban inequality by 8 percent, and in 2007 by 7 percent.

Table 2.7 about here

We note that the difference between inequality calculated with and without migrants is not the same as measuring the full impact of migration on inequality. Migration can influence income levels of urban and rural households, and likely has different impacts in richer and poorer areas. Fully analyzing the impact of migration would require estimating the counterfactual income levels that would have prevailed had migration not taken place. Our calculations use only the actual income levels.

VI. The Structure of Inequality: The Urban-Rural Income Gap

Analyses of inequality in China typically highlight the widening gap between urban and rural household incomes. Most studies, including those based on earlier rounds of the CHIP survey, find that the urban-rural income gap has widened over time and that it has contributed to the increase in overall inequality.

Here we examine changes in the urban-rural income gap between 2002 and 2007. In our analysis we use the NBS and CHIP definitions of income. We note that these measures of income do not fully capture implicit subsidies that are disproportionately

enjoyed by urban residents, and which if included would widen the urban-rural differential (Li and Luo 2010). We do, however, show estimates adjusted for cost of living differences between the urban and rural areas, the correction of which should reduce the urban-rural gap (Sicular et al. 2010). We measure the urban-rural income gap as the ratio of average disposable income per capita of households in the urban survey, or in the combined urban and migrant surveys, to average net income per capita of households in the rural survey.

We find that the urban-rural income gap continued to widen between 2002 and 2007 (Table 2.8). The widening gap is not due to slow growth in rural incomes—rural incomes in fact grew rapidly during this period (see Chapter 5)—but reflects even faster growth in urban incomes. Calculated using CHIP income and including migrants, the gap increases by about 20 percent from 3.2 to 3.8.

Table 2.8 about here

This urban-rural gap is high by international standards. Available estimates for other countries indicate that urban-rural income ratios above 3.0 are rare. For India, Bangladesh, Indonesia, and Malaysia the ratio is less than 2.0; for Thailand and the Philippines the ratio is 2.2-2.3. Only for a few countries, such as South Africa and Zimbabwe, does the ratio exceed 3.0 (Knight and Song 1999, p. 138; see also World Bank 2009b).

Alternative calculations change the size of the gap, but in all cases the gap widens from 2002 to 2007. Excluding migrants increases the size of the income gap somewhat but does not substantially change the trend. The income gap is smaller for NBS income than for CHIP income, but in both cases the gap widens over time.

Adjusting for cost of living differences substantially reduces the magnitude of the urban-rural income gap. Measured using the CHIP PPP-adjusted incomes and

including migrants, in 2002 the urban-rural income ratio is 2.2 and in 2007 2.7. Again, the urban-rural income ratio widened, increasing by 24 percent between the two years.

The widening urban-rural gap was a factor underlying rising national inequality. Table 2.9 presents summary results of a standard inequality decomposition by population subgroup using the Theil inequality measures (Shorrocks 1980).[13] This method disaggregates overall inequality into the contributions of inequality between groups and within groups. In our application, the groups are urban and rural. Between-group inequality is the component associated with the urban-rural income gap.

Table 2.9 about here

We report the results for the two Theil measures of inequality, for both the NBS and CHIP income definitions, and without and with migrants.[14] In all cases, the share of national inequality contributed by between-group inequality increased from 2002 to 2007. In 2002 between-group inequality contributed 43 to 46 percent of overall inequality. In 2007 between-group inequality contributed 48 to 52 percent of overall inequality, an increase of about 5 percentage points over 2002. Thus, by 2007 the urban-rural income gap was associated with roughly half of the national inequality in China.

PPP adjustments reduce the contribution of the urban-rural gap to inequality, but exacerbate the increase in the contribution of the urban-rural gap to inequality over time (Table 2.10). For the CHIP measure of income and including migrants, in 2002 the urban-rural gap contributed 27 to 28 percent of PPP inequality, and by 2007 it had risen to about more than 37 percent.

Table 2.10 about here

VII. The Structure of Inequality: Regional Income Differences

Previous studies note large regional disparities in household incomes in China. Analysis of the 2002 CHIP data identified large regional gaps, but with some evidence of a regional catch-up (Gustafsson, Li, and Sicular 2008). To investigate regional income inequalities between 2002 and 2007, we conduct several computations. Following the CHIP sampling approach as well as the official classification of regions, in these computations we divide China into four regions: large, provincial-level metropolitan cities; the eastern region; the central region; and the western region.

Table 2.11 shows the relative incomes of the four regions, calculated as a ratio using the mean income of the western region as the denominator. All calculations use the CHIP income definition (see Appendix Table 2A.3 for mean incomes per capita by region).

Table 2.11 about here

We present alternative estimates using unadjusted prices (current year prices, no adjustments for regional cost of living differences) and PPP prices (current year prices, adjusted for regional cost of living differences). Costs of living are generally higher in more developed regions, so using the PPP prices reduces the income differences between the richer and poorer regions. As shown in Table 2.11, PPP adjustments markedly reduce regional income ratios between the large municipalities and the western regions and between the eastern and western regions, but they do not substantially change the income ratio between the central and western regions.

Looking at the PPP estimates, we find the largest income ratio to be between the large municipalities and the western region. In 2002 per capita incomes in the large municipalities were on average 2.5 times those in the western region; in 2007 the ratio

narrowed slightly to 2.4. The ratio between the eastern and western regions was smaller but also substantial; that between the central and western regions was fairly small. The regional structure of PPP incomes differs somewhat for the urban, migrant, and rural subpopulations. Regional income differences are largest for rural residents. With the exception of large municipalities, rural regional income differences narrowed between 2002 and 2007. The narrowing of rural regional income differences might reflect the equalizing effects of migration, or the effects of increased returns to farming (see Chapter 5), which could narrow the gap between areas with more and less nonagricultural development.

In urban areas, the regional income gaps all widened. Our estimates indicate that income growth of urban households in the western provinces lagged behind that of urban households in other regions during the period under study. Regional income differences among urban-based migrant households are small. Even between the large metropolitan cities and the western region, in 2007 the income gap is less than 5 percent. There is almost no regional income gap between the eastern and western regions, and migrant incomes in central China are 6 percent lower than those in western China. The lack of substantial regional income differences for migrant households may reflect the equalizing effect of migration among regions as migrants move in response to real differentials in their wages.

Overall, then, it appears that the widening of the overall regional income gaps in China between 2002 and 2007 was largely driven by regional trends among urban areas, and between the large municipalities and the rest of China. Income gaps among other regions and groups were relatively stable or narrowed.

How important is interregional inequality to overall inequality in China? We address this question using standard inequality decomposition analysis of the Theil

inequality indices by population subgroup. Here the relevant groups are the four regions. The contribution of between-group inequality captures the importance of regional income differences to overall inequality in China.

Table 2.12 about here

Table 2.12 shows estimates of the contribution of between-group (inter-region) inequality to inequality for China as a whole ("all") and for the urban, rural, and migrant populations. The table reports estimates calculated with and without PPP adjustments, but our discussion focuses on the PPP estimates, for which incomes are more comparable among regions and between urban and rural areas.

For China as a whole, the share of between-region inequality is relatively low, contributing 11 to 12 percent of overall inequality, and with a very slight decrease between 2002 and 2007. In other words, in both years within-region inequality accounts for the overwhelming majority of national inequality.

As one might expect, regional income differences are most important for rural inequality, although over time their contribution declined. In 2002 between-region inequality contributed 19 percent and in 2007 less than 14 percent of rural inequality. The declining contribution of regional income differentials to rural inequality likely reflects the spread of nonagricultural employment opportunities from the eastern areas to the central and western areas, as well as the increased migration by rural workers in the western region.

For the formal urban population, between-region differences contributed a smaller but growing share of inequality. These results could reflect continuing or perhaps increasing segmentation of the formal urban labor markets, as well as regional immobility caused by rapidly rising housing costs in the large metropolitan cities.

Regional inequality is unimportant among migrant households. As shown in Table 2.12, between-region income inequality as a percentage of total inequality among migrants was only about 1 percent in both years.

The findings in Table 2.12 indicate that national inequality is driven more by inequality within regions than by inequality between regions. Table 2.13, which shows the levels of inequality within regions, reveals that within-region inequality has remained particularly high in western China. Within-region inequality increased in eastern and central China between 2002 and 2007, but the increase was most marked—more than 13 percent—in eastern China.

Table 2.13 about here

Inequality within regions is in part a reflection of the large urban-rural income gap discussed in the previous section. In both 2002 and 2007 the urban-rural income gap was largest in the western region, about 3 with the PPP adjustments (3.7 to 3.9 without the PPP adjustments) (Table 2.14). In the eastern and central regions the urban-rural gap was moderate in 2002 but increased substantially between 2002 and 2007.

Table 2.14 about here

In large metropolitan cities the urban-rural income gap shrank between 2002 and 2007, so that by 2007 the large metropolitan cities had the smallest urban-rural income ratio, although it still remained at 2.0.[15] This decline may reflect the development of rural districts in the large metropolitan cities and their increased urban integration.

Based on the above regional analysis, we conclude that income differences between the eastern, central, and western regions are not a major source of nationwide inequality. Within-region income differences are much more important, although

less so in the large metropolitan cities than in the eastern, central, and western regions. Urban-rural inequality appears to be a contributing factor to the rising inequality in the latter three regions.

VIII. Poverty

During the reform era China has achieved dramatic and ongoing reductions in poverty. By 2002 the poverty rate was already quite low, and further poverty reduction became more challenging due to several factors, for example, the fact that a high proportion of the remaining poverty was geographically dispersed and transient, and also because poverty had become less responsive to macroeconomic growth (World Bank 2009a). Policies adopted after 2002, such as the minimum living guarantee program, the new rural cooperative medical system, and the new rural pension system, have addressed some of these factors.

Here we examine trends in poverty between 2002 and 2007 so as to understand the net effects of policies and growth on poverty. Studies of poverty have used different poverty lines and poverty measures. We present three alternative estimates of poverty, two using absolute poverty lines and one using a relative poverty line. For all estimates we use the NBS definition of income, which does not include imputed rents on owner-occupied housing. We exclude imputed rents because the poverty lines are set without reference to imputed rents.

The first absolute poverty line is the international PPP poverty threshold of $1.25 per day per person, which we convert to yuan using the PPP exchange rate of 3.46 yuan to the US dollar in 2005 (Chen and Ravallion 2008). The second absolute poverty line is the Chinese government's official poverty line for rural areas. In view of past criticisms that the Chinese official poverty line is too low, we use the new,

higher 2008 official poverty line of 1196 yuan. We treat both of these poverty lines as rural poverty lines and convert them to 2002 and 2007 prices using the NBS consumer price index for rural areas. We set the urban absolute poverty lines equal to the rural poverty lines adjusted by the urban-rural cost of living differential (taken from Brandt and Holz [2006], and for 2007 updated using the NBS consumer prices indexes).

Relative poverty lines are used fairly often, especially in higher-income countries where few households experience absolute deprivation but where individuals at the lower end of the income distribution are nevertheless disadvantaged (Osberg 2000; Ravallion 1992). In view of the substantial growth in personal incomes in China in recent decades, the concept of relative poverty has become increasingly relevant. Following common practice in the literature, we use a relative poverty line equal to 50 percent of the median income. The relative poverty lines are set at 50 percent of the median income in each of the rural and urban sectors, with long-term, stable migrants included in the urban sector. Table 2.15 shows our poverty lines expressed in current prices for each year.

Table 2.15 about here

We note that Chapters 5 and 7 in this volume provide more detailed, separate analyses of poverty in the rural and urban sectors. Due to differences in calculation, in some cases the levels of poverty reported in these chapters may differ from those reported here; however, the overall trends between 2002 and 2007 are similar.

Our estimates of poverty incidence appear on the top half of Table 2.16. For China as a whole, absolute poverty declined quite substantially between 2002 and 2007. Using the PPP $1.25 poverty line, for example, the poverty rate fell from 19 percent to 8 percent. Underlying this reduction is a marked decline in rural poverty.

Absolute poverty in the formal urban and migrant populations also declined, but was already low in 2002.

Table 2.16 about here

In contrast, the rate of relative poverty in China as a whole remained more or less unchanged at 13 percent. Stagnant relative poverty rates suggest that households at the lower tail of the income distribution were not catching up to the median. This is consistent with our finding of increased inequality, as discussed above. Relative poverty rates are fairly similar for the rural and urban areas, except for migrants within the urban areas. For this group, relative poverty was higher in 2002, but by 2007 it had declined and was below the relative poverty rates for the rural and formal urban populations.

For all poverty lines, the overwhelming majority of the poor were rural (as shown in the bottom half of Table 2.16). Using absolute poverty measures, more than 95 percent of the poor were rural. Using the relative poverty measure, the share of the rural poor is lower, although still high at 60+ percent. Since the urban relative poverty lines are equal to 50 percent of the median urban income, and thus higher than the rural relative poverty lines, it is not surprising that by this measure a greater proportion of the relative poor than the absolute poor are located in the cities. Moreover, the share of the relative poor located in the cities increased noticeably between 2002 and 2007.

Poverty rates differed greatly among regions. As shown in Table 2.17, the incidence of absolute poverty in the large municipalities was extremely low; in the eastern region it was also relatively low, especially in 2007. The incidence of absolute poverty was higher in the central region and highest in the western region, although in both places it declined substantially between 2002 and 2007. In the

western region the rate of absolute poverty, measured using PPP$1.25 per day, declined from 32 percent to 15 percent.

Table 2.17 about here

Relative poverty was very low in the large municipalities, somewhat low in the eastern region, moderate in the central region, and highest in the western region, where more than 20 percent of the population fell below the relative poverty line. Relative poverty nationwide and in all regions was fairly stable between 2002 and 2007. Note that we use the same relative poverty line (50 percent of national median income) for all regions.

By all measures, China's poor are heavily concentrated in the West. As shown on the bottom half of Table 2.17, half of China's absolute poor and well over 40 percent of the relative poor live in the western region. Moreover, from 2002 to 2007 the western region's share of the poor increased. Less than 1 percent of China's poor live in the large municipalities; 15 to 20 percent live in the eastern region; and about a one-third live in the central region. This regional structure suggests the need for focused attention on poverty alleviation in the western and central regions.

We note further that within all regions poverty was largely rural. For example, in 2007 in all regions, including the western region, rates of absolute poverty measured using $1.25 per day for formal urban residents and for long-term migrants were all below 1 percent. In the large municipalities the rate of rural poverty was also below 1 percent. In contrast, in the eastern, central, and western regions the rates of rural poverty were 7, 12, and 22 percent, respectively. Again, this pattern has implications for the design of poverty alleviation programs.

IX. Conclusions

Despite official policies emphasizing shared growth during the Hu Jintao-Wen Jiabao period, between 2002 and 2007 income inequality in China resumed its upward trajectory. By 2007 the level of inequality in China was moderately high by international standards. With a Gini of approximately 0.5, China was in the same ballpark as countries in South and Central America such as Mexico (0.51), Nicaragua (0.52), and Peru (0.48), although the level of inequality was still below that of the high-inequality countries such as Brazil and Honduras (0.56-0.57).[16]

Our analysis reveals some old and some new factors that have contributed to this increase in inequality. An old factor is China's already large urban-rural income gap. The urban-rural gap widened further between 2002 and 2007. Even after adjusting for differences in costs of living, the difference between urban and rural incomes was very high by international standards and contributed a substantial share of national inequality.

A new factor contributing to the rising inequality was income from property and assets. By 2007, with the completion of urban housing privatization and the development of urban residential real-estate markets, expansion of stock and capital markets, growth of private enterprises, and other property rights reforms, income from property and assets was beginning to be important. We find that in 2007 asset and property income contributed to both the urban-rural income gap and to the overall inequality. In the future, the importance of asset and property income is likely to grow and may continue to drive up inequality in China. Inequality in these sources of income is potentially a hot-button issue, as in China the institutions that shape the distribution of assets are not yet transparent or equitable.

We find evidence that some equalizing factors have also been at work. Although they did not fully offset the dis-equalizing factors, they nevertheless

moderated the upward trend. In 2007 urban net transfers began to have a modestly equalizing impact. This category of income includes public transfers, thereby suggesting that the expansion of urban social welfare programs has played a positive role. Rapid growth in rural incomes, even if not as rapid as urban income growth, also moderated inequality. From the perspective of inequality, growth in rural incomes from farming and short-term migration was especially important. Some dimensions of regional inequality narrowed, for example, between-region rural inequality. These findings suggest that farm support and regional development programs may have moderated income disparities, especially in rural China.

We note that our estimates likely understate the real trends in inequality because high-income urban households are increasingly underrepresented in the NBS urban survey sample and also because the income of high-income households is likely understated. These are common problems in household surveys in general. The problem is relatively recent in China, and future sampling methods and analytical approaches will need to adapt. A preliminary study by Li and Luo (2011) indicates that adjustments to correct for the undercounting of income of high-income urban households would increase the Gini coefficient by 8 percentage points in urban areas and by 5 percentage points nationwide.

Between 2002 and 2007 China achieved major gains in poverty reduction. Despite new challenges in poverty alleviation, during this period absolute poverty continued its downward trend. Relative poverty, however, did not decline, indicating that households at the bottom of the income distribution were not catching up with those at the middle or the top. As China's economy matures and the number of absolute poor shrinks, relative poverty will become an increasingly important social indicator.

In summary, then, we find that although households in all income groups, sectors, and regions continued to enjoy substantial income growth during this period, income growth was faster for richer households than for poorer households. The resulting increase in inequality reflected shifts in the structure of the income distribution and the emergence of some new underlying mechanisms. China thus faces ongoing challenges in its efforts to promote growth with equity. In the future, China's distributional policies will need to evolve accordingly.

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Appendix

Table 2A.1. *Income and inequality with alternative weights, 2002 and 2007*

	2002					2007				
	urban	rural	national (excluding migrants)	migrant	national (including migrants)	urban	rural	national (excluding migrants)	migrant	national (including migrants)
No weights										
Mean income	8504	2773	4791	6180	4858	17527	5106	9587	16048	9982
Gini	0.325	0.364	0.454	0.349	0.450	0.340	0.377	0.480	0.308	0.475
GE(0)/MLD	0.176	0.225	0.360	0.214	0.355	0.193	0.239	0.407	0.163	0.400
GE(1)	0.180	0.238	0.355	0.212	0.348	0.196	0.250	0.397	0.173	0.385
Weight I (urban/rural)										
Mean income	8504	2773	4740	6180	4776	17527	5106	10322	16048	10501
Gini	0.325	0.364	0.455	0.349	0.453	0.340	0.377	0.476	0.308	0.472
GE(0)/MLD	0.176	0.225	0.360	0.214	0.357	0.193	0.239	0.405	0.163	0.400
GE(1)	0.180	0.238	0.356	0.212	0.352	0.196	0.250	0.386	0.173	0.380
Weight II (urban/rural x region)										
Mean income	8800	2815	4862	6691	4907	16805	4659	9746	16785	9966
Gini	0.326	0.365	0.458	0.343	0.456	0.337	0.367	0.479	0.295	0.476
GE(0)/MLD	0.177	0.227	0.366	0.206	0.364	0.190	0.227	0.411	0.149	0.408
GE(1)	0.180	0.239	0.362	0.203	0.358	0.196	0.236	0.394	0.159	0.388
Weight III (urban/rural x province x region)										
Mean income	9002	2771	4958	7167	4902	17639	4617	10072	16673	10277
Gini	0.331	0.354	0.462	0.336	0.460	0.340	0.358	0.487	0.289	0.483
GE(0)/MLD	0.182	0.213	0.370	0.200	0.368	0.193	0.216	0.424	0.144	0.420
GE(1)	0.186	0.226	0.370	0.193	0.366	0.199	0.226	0.409	0.154	0.401

Notes:

1. Includes all provinces covered by the CHIP. Calculated using current year prices and CHIP income.

2. The inequality indexes shown in this table are all scale-invariant. Consequently, the level of inequality is the same for both the current year and constant prices (if deflation is carried out using the same price index for all individuals).
3. Incomes less than or equal to zero have been dropped for calculation of the GE(0)/MLD and GE(1) inequality indexes (fewer than 30 observations [individuals] were dropped in 2002 and fewer than 225 in 2007).

Table 2A.2. Income and inequality with alternative estimates of imputed rental income on owner-occupied housing, 2002 and 2007

	2002		2007	
	A	B	A	B
Mean value of urban imputed rents on owner-occupied housing	558	860	1945	3229
Mean value of urban income per capita	9002	9303	17638	18922
Urban-rural income ratio	3.25	3.36	3.82	4.10
Inequality within urban areas (migrants excluded)				
Gini	0.331	0.327	0.340	0.337
G(0)	0.182	0.178	0.193	0.190
G(1)	0.186	0.182	0.199	0.197
National inequality (migrants included)				
Gini	0.460	0.464	0.483	0.492
G(0)	0.368	0.375	0.420	0.440
G(1)	0.366	0.372	0.401	0.416

Notes:

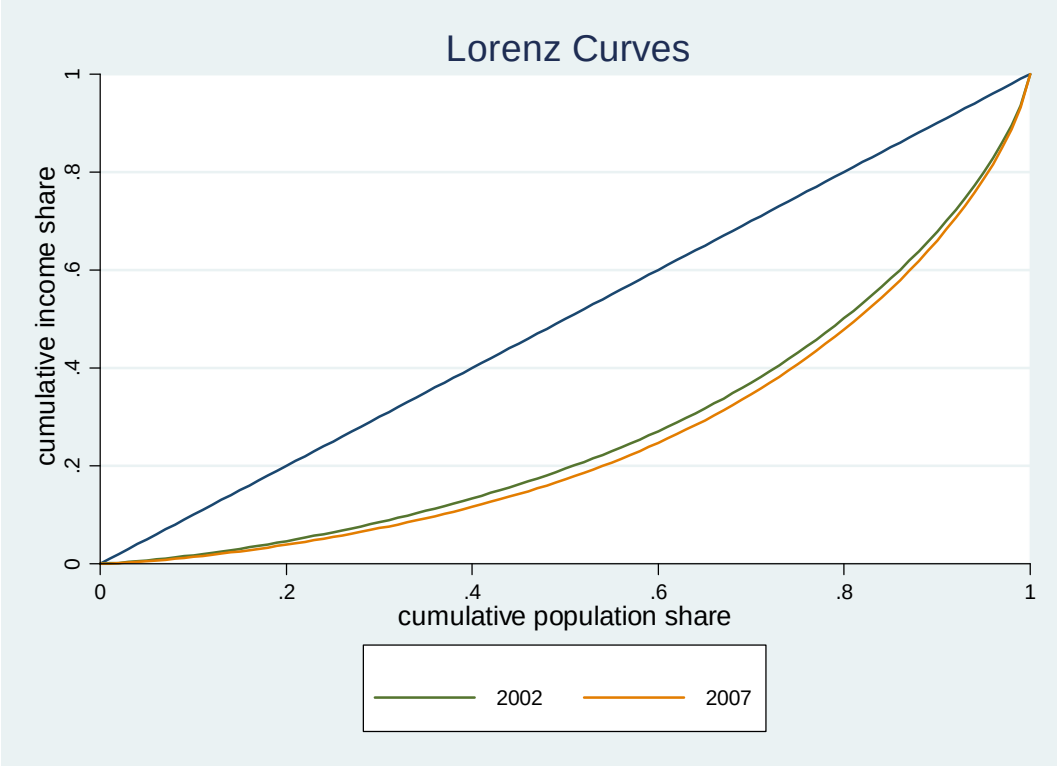
1. Column A contains estimates that use the rate of return approach to calculate rural imputed rents and the market rent approach to calculate urban imputed rents. Estimates reported elsewhere in this chapter follow this approach. Column B contains alternative estimates that use the rate of return approach for both rural and urban areas. See Chapter 3 for a detailed discussion of the two approaches.
2. Three-level weights, CHIP income, and current prices are used in all calculations.

Table 2A.3. *Mean income per capita by region, 2002 and 2007 (yuan)*

PPP unadjusted								
	2002				2007			
Region	urban	rural	migrant	all	urban	rural	migrant	all
Large municipalities	17022	5267	8206	13902	27780	11436	19930	24143
Eastern	10155	3869	8052	6402	21909	6233	17653	13994
Central	6790	2391	5206	3781	13790	4140	12202	7971
Western	7390	1955	5881	3450	13113	3426	14335	6814
PPP adjusted								
	2002				2007			
Region	urban	rural	migrant	all	urban	rural	migrant	all
Large municipalities	9577	3477	4617	7930	16876	8103	12161	14867
Eastern	6836	4076	4986	5153	15278	6418	11701	10742
Central	5535	2640	4230	3552	11063	4380	9824	7031
Western	6129	2039	4853	3162	10707	3630	11648	6106

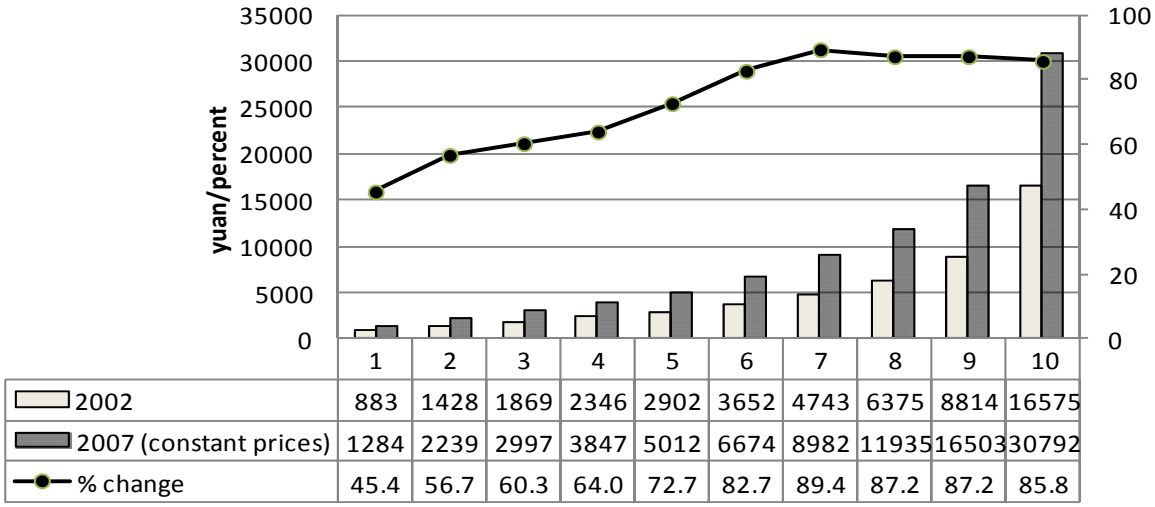
Notes: In this table long-term stable migrants are shown separately, and urban excludes migrants. CHIP income definition; calculated using weights (three-level weights for all, provincial and regional weights for urban, rural, and migrant); current-year prices. See notes to Table 2.3 regarding PPP adjustments.

Figure 2.1 China's National Lorenz Curves for Household Per Capita Income, 2002 and 2007 (three-level weights, including migrants, CHIP income definition)



Note: Includes all provinces in both years, CHIP income definition, weighted by province, region, and urban/rural. Calculated using incomes in current-year prices.

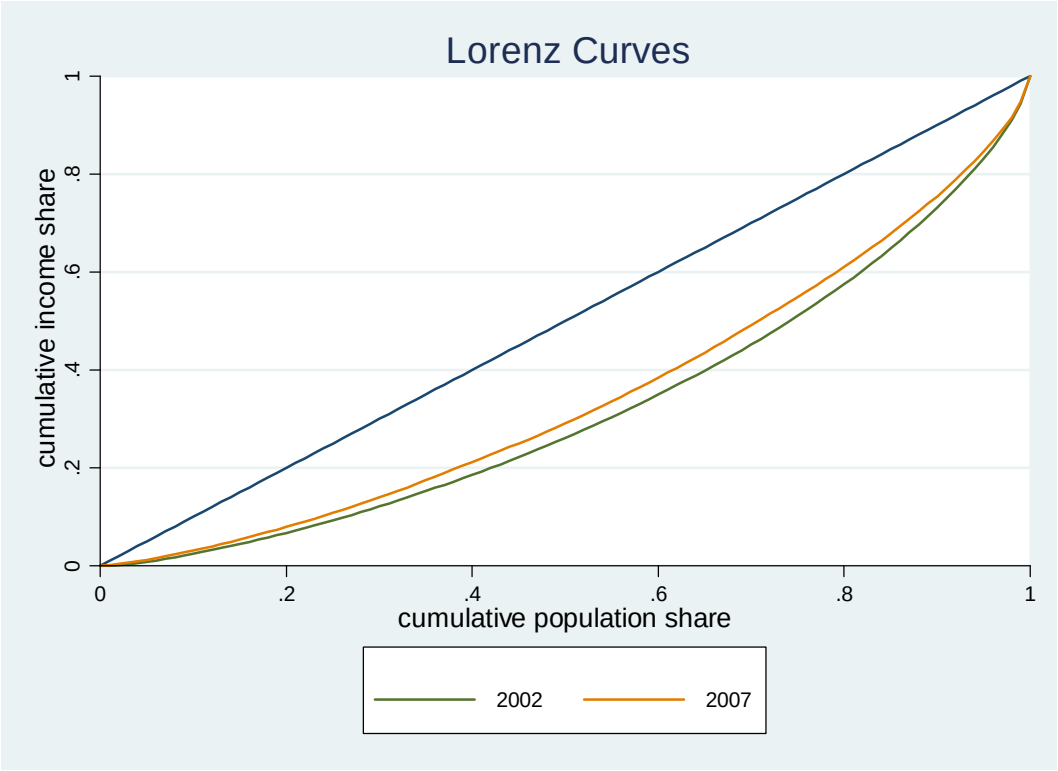
Figure 2.2 Income Levels and Growth by Deciles, 2002 to 2007



	1	2	3	4	5	6	7	8	9	10
2002	883	1428	1869	2346	2902	3652	4743	6375	8814	16575
2007 (constant prices)	1284	2239	2997	3847	5012	6674	8982	11935	16503	30792
% change	45.4	56.7	60.3	64.0	72.7	82.7	89.4	87.2	87.2	85.8

Note: Includes all provinces covered by the CHIP surveys, CHIP income definition, three-level weights (province, region, and urban/rural). Calculated using incomes in constant 2002 prices.

Figure 2.3 Lorenz Curve of Migrant Per Capita Income, 2002 and 2007



Note: Includes all provinces covered by the migrant surveys, CHIP income definition, weighted by province and region using population shares of long-term, stable migrants (see Appendix II in this volume). Calculated using incomes in current-year prices.

Table 2.1. *National mean income and inequality, 2002 and 2007*

	2002		2007		% change, 2002 to 2007, constant 2002 prices	
	Excluding migrants	Including migrants	Excluding migrants	Including migrants	Excluding migrants	Including migrants
NBS income						
Mean income	4467	4530	8932	9165	75.61	77.69
Gini	0.456	0.455	0.481	0.478	5.48	5.05
GE(0)	0.362	0.361	0.414	0.413	14.36	14.40
GE(1)	0.360	0.356	0.398	0.392	10.56	10.11
CHIP income						
Mean income	4958	4902	10072	10277	78.42	84.13
Gini	0.462	0.460	0.487	0.483	5.41	5.00
GE(0)	0.370	0.368	0.424	0.420	14.59	14.13
GE(1)	0.370	0.366	0.409	0.401	10.54	9.56

Notes:

1. All estimates are calculated using three-level weights, i.e., urban/rural x regional x provincial population shares.
2. Estimates are calculated using data from all provinces covered by the CHIP surveys.
3. Mean incomes for each year are calculated using current-year prices, and the change between 2002 and 2007 is calculated using constant 2002 prices (deflated using the national average consumer price index).
4. The inequality indexes shown in this table are all scale-invariant. Consequently, the level of inequality is the same for both the current year and constant prices (if deflation is carried out using the same price index for all individuals).
5. Here and elsewhere, incomes less than or equal to zero have been dropped for calculation of the GE(0) and GE(1) inequality indexes. In all, fewer than 30 observations (individuals) were dropped in 2002 and fewer than 225 in 2007.

Table 2.2. *Decomposition of inequality by income sources, 2002 and 2007*

	2002			2007		
	Concentration ratio or Gini	Share (%)	Contribution to total inequality (%)	Concentration ratio or Gini	Share (%)	Contribution to total inequality (%)
Rural total	0.011	35.87	0.89	-0.101	25.30	-5.30
Wages from migrant jobs	-0.066	4.07	-0.59	-0.185	4.47	-1.71
Other wages	0.156	8.77	2.97	-0.017	5.09	-0.18
Net farm	-0.129	14.23	-3.98	-0.191	9.24	-3.65
Net from non-farm activities	0.206	4.69	2.10	0.126	2.58	0.67
Assets	0.410	0.24	0.22	0.185	0.66	0.25
Net transfers	0.071	1.51	0.23	-0.089	1.08	-0.20
Imputed rent on owner-occupied housing	-0.013	2.35	-0.06	-0.108	2.17	-0.49
Urban total	0.717	60.56	94.32	0.684	69.65	98.49
Wages	0.717	42.19	65.74	0.679	45.78	64.36
Pensions	0.718	9.89	15.42	0.664	12.58	17.28
Net from individual businesses	0.583	2.01	2.55	0.687	5.39	7.66
Assets	0.783	0.72	1.23	0.875	1.09	1.98
Net transfers	0.678	-0.39	-0.57	0.697	-3.75	-5.41
In-kind subsidies on public rental housing	0.742	1.68	2.70	0.645	0.41	0.55
Imputed rent on owner-occupied housing	0.739	3.76	6.03	0.714	7.68	11.34
Other in-kind income	0.808	0.70	1.22	0.778	0.46	0.74
Migrants total	0.618	3.57	4.79	0.652	5.05	6.81
Wages	0.554	1.38	1.66	0.626	3.42	4.43
Net from individual businesses	0.652	2.02	2.86	0.695	1.50	2.16
Assets	0.413	0.01	0.01	0.886	0.03	0.05
Net transfers	0.719	0.09	0.14	0.885	0.02	0.04
Imputed rent on owner-occupied housing	0.763	0.08	0.13	0.796	0.08	0.13
National total	**0.460**	100	100	**0.483**	100	100

Note: CHIP income definition, including migrants, using three-level weights. Includes all provinces covered by the CHIP surveys. Calculated using incomes measured in current-year prices.

Table 2.3. *Inequality estimates with and without PPP adjustments, 2002 and 2007*

	2002		2007		% change, 2002 to 2007	
	Without PPP	With PPP	Without PPP	With PPP	Without PPP	With PPP
NBS income						
Gini	0.455	0.389	0.478	0.421	5.1	8.2
GE(0)/MLD	0.361	0.265	0.413	0.315	14.4	18.9
GE(1)	0.356	0.258	0.392	0.302	10.1	17.1
CHIP income						
Gini	0.460	0.391	0.483	0.423	5.00	8.18
GE(0)/MLD	0.368	0.265	0.420	0.317	14.13	19.62
GE(1)	0.366	0.259	0.401	0.305	9.56	17.76

Notes:

1. Includes all provinces covered by the CHIP surveys.
2. Calculated using three-level weights and including migrants. Incomes are in current-year prices.
3. For PPP estimates, incomes have been adjusted for differences in cost of living between urban and rural areas and among provinces using the Brandt and Holz (2006) geographic price indexes for 2002 and updated to 2007 using the provincial rural and urban price indexes published by the NBS.
4. Incomes less than or equal to zero have been dropped for calculation of the GE(0)/MLD and GE(1) inequality indexes. See notes to Table 2.1.

Table 2.4. *Level and growth of migrant household per capita income*

	2002	2007	Annual income growth (constant 2002 prices)
Wage income	2768	11294	29.4%
Individual business net income	4050	4953	1.7%
Asset income	13	99	47.3%
Net transfer income	177	75	-17.7%
Imputed rent on owner-occupied housing	159	252	7.1%
Total income	7167	16673	15.7%

Note: Includes all provinces covered by the migrant surveys, CHIP income definition, weighted by province and region using population shares of long-term stable migrants (see Appendix II to this volume). In current-year prices except for the real growth rates, which are deflated using the urban consumer price index.

Table 2.5. *Migrant inequality, 2002 and 2007*

	2002	2007	% change, 2002 to 2007
Gini	0.336	0.289	-14.0%
GE(0)/MLD	0.200	0.144	-28.0%
GE(1)	0.193	0.154	-20.2%

Note: Includes all provinces covered by the migrant surveys, CHIP income definition, weighted by province and region using population shares of long-term stable migrants (see Appendix II to this volume). Calculated using current-year prices, but the level of inequality is the same for the current year and constant prices if deflation is carried out using the same consumer price index for all individuals.

Table 2.6. *Decomposition of migrant income inequality by income source, 2002 and 2007*

	2002			2007		
	Concentra-tion ratio or Gini	Share (%)	Contribu-tion to total inequality (%)	Concentra-tion ratio or Gini	Share (%)	Contribu-tion to total inequality (%)
Wage income	0.219	38.63	25.2	0.224	67.74	52.5
Individual business net income	0.398	56.5	66.9	0.404	29.71	41.5
Asset income	0.014	0.18	0.0	0.797	0.59	1.6
Net transfer income	0.537	2.48	4.0	0.805	0.45	1.3
Imputed rent on owner-occupied housing	0.597	2.21	3.9	0.590	1.51	3.1
Total income	0.336	100	100	0.289	100	100

Note: Includes all provinces covered by the migrant surveys, CHIP income definition, weighted by province and region using population shares of long-term stable migrants (see Appendix II to this volume). Calculated using incomes in current-year prices; the level of inequality is the same for the current year and constant prices if deflation is carried out using the same consumer price index for all individuals.

Table 2.7. *Urban inequality with and without migrants, 2002 and 2007*

	2002		2007	
	Without	With	Without	With
Gini	0.331	0.305	0.340	0.317
GE(0)/MLD	0.182	0.156	0.193	0.169
GE(1)	0.186	0.157	0.199	0.174

Note: Includes all provinces covered by the surveys in both years, CHIP income definition, weighted by province and region using the population shares of urban locals and long-term stable migrants (see Appendix II to this volume). Calculated using incomes in current-year prices.

Table 2.8. *The urban-rural income gap, 2002 and 2007*

	Mean income per capita (yuan)		Average annual income growth (constant 2002 prices)	Urban-rural income ratio		Urban-rural income ratio (PPP adjusted)	
	2002	2007		2002	2007	2002	2007
NBS income							
Urban, without migrants	8078	15469	11.26%	3.16	3.66	2.13	2.61
Urban, with migrants	8005	15537	11.56%	3.13	3.68	2.10	2.60
Rural	2590	4221	6.96%				
CHIP income							
Urban, without migrants	9002	17639	11.77%	3.25	3.82	2.21	2.71
Urban, with migrants	8875	17570	12.00%	3.20	3.80	2.17	2.68
Rural	2771	4618	7.44%				

Note: Unadjusted current-year prices unless noted otherwise. Includes all provinces covered in the CHIP surveys; calculated using regional and provincial population weights. PPP estimates are calculated using incomes that have been adjusted for differences in cost of living between urban and rural areas and among provinces using the Brandt and Holz (2006) geographic price indexes for 2002, and updated to 2007 using the provincial rural and urban price indexes published by the NBS.

Table 2.9. *Contribution of urban-rural (between-group) inequality to national inequality (%)*

	NBS income definition		CHIP income definition	
	2002	2007	2002	2007
Without migrants				
GE(0)	43.1	49.3	45.6	52.0
GE(1)	44.0	48.0	46.3	50.7
With migrants				
GE(0)	42.9	49.6	44.5	50.9
GE(1)	43.5	48.1	44.5	48.5

Note: Calculations with migrants include in the urban sector long-term, stable migrants from the rural areas in the urban sector. Three-level weights are used. Calculated using incomes measured in current-year prices. See Shorrocks (1980) for a discussion of the decomposition methodology.

Table 2.10. *Contributions of urban-rural (between-group) inequality to national inequality, with PPP adjustments* (%)

	NBS income definition		CHIP income definition	
	2002	2007	2002	2007
Without migrants				
GE(0)	25.7	35.4	28.3	38.6
GE(1)	27.2	35.9	29.9	39.0
With migrants				
GE(0)	25.2	35.6	27.1	37.5
GE(1)	26.6	35.8	28.4	37.3

Note: The note to Table 2.9 applies. PPP adjustments for 2002 use the Brandt and Holz (2006) price deflators; for 2007 the Brandt and Holz (2006) deflators are updated using the NBS provincial urban and rural consumer price indexes.

Table 2.11. *Regional income gaps, 2002 and 2007*

PPP unadjusted								
	2002				2007			
Region	urban	rural	migrant	all	urban	rural	migrant	all
Large municipalities	2.30	2.69	1.40	4.03	2.12	3.34	1.39	3.54
Eastern	1.37	1.98	1.37	1.86	1.67	1.82	1.23	2.05
Central	0.92	1.22	0.89	1.10	1.05	1.21	0.85	1.17
Western	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PPP adjusted								
	2002				2007			
Region	urban	rural	migrant	all	urban	rural	migrant	all
Large municipalities	1.56	1.70	0.95	2.51	1.58	2.23	1.04	2.43
Eastern	1.12	2.00	1.03	1.63	1.43	1.77	1.00	1.76
Central	0.90	1.29	0.87	1.12	1.03	1.21	0.84	1.15
Western	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Note: Income gaps are equal to the ratio of each region's income per capita to that in the western region. In this table long-term stable migrants are shown separately, and urban excludes migrants. CHIP income definition; calculated using three-level weights for all and regional x provincial weights for the urban, rural, and migrant subgroups; current-year prices. See notes to previous tables regarding PPP adjustments.

Table 2.12. *Contributions of between-region inequality to overall inequality (%)*

PPP unadjusted								
	2002				2007			
	urban	rural	migrant	all	urban	rural	migrant	all
GE(0)	19.4	20.7	7.8	17.6	18.0	16.9	7.3	15.5
GE(1)	20.5	20.0	7.6	19.9	17.6	17.2	6.5	17.1
PPP adjusted								
	2002				2007			
	urban	rural	migrant	all	urban	rural	migrant	all
GE(0)	6.9	19.1	1.0	11.6	9.1	13.5	1.3	11.3
GE(1)	7.2	18.6	1.0	12.5	8.9	13.6	1.1	12.1

Note: The contributions of the differences in mean incomes among the four regions to national inequality are shown in the column titled "all." The other columns report the contributions of income differences between the four regions to inequality within the urban, rural, and migrant subgroups. CHIP income definition; calculated using three-level weights for all and regional x provincial weights for the urban, rural and migrant subgroups; current-year prices.

Table 2.13. *Gini coefficients by region, 2002 and 2007*

PPP unadjusted		
	2002	2007
Large municipalities	0.321	0.315
Eastern	0.418	0.456
Central	0.398	0.428
Western	0.456	0.471
PPP adjusted		
	2002	2007
Large municipalities	0.311	0.307
Eastern	0.352	0.400
Central	0.346	0.381
Western	0.422	0.421

Note: CHIP income definition; incomes are in current-year prices. Calculated using provincial and rural/urban weights. Long-term, stable migrants are included in these calculations.

Table 2.14. *The urban-rural income gap by region, 2002 and 2007*

PPP unadjusted		
	2002	2007
Large municipalities	3.08	2.34
Eastern	2.58	3.44
Central	2.81	3.32
Western	3.73	3.85
PPP adjusted		
	2002	2007
Large municipalities	2.62	2.00
Eastern	1.64	2.32
Central	2.08	2.52
Western	2.97	2.96

Note: See notes to Table 2.13 and notes to previous tables regarding PPP adjustments. CHIP income definition. Migrants are included as urban residents in the calculations.

Table 2.15. *Poverty lines*

	official		PPP$1.25/day		50% of median income	
	2002	2007	2002	2007	2002	2007
Rural	964	1123	1451	1689	1051	1714
Urban & migrants	1338	1503	2013	2260	3379	6412

Note:

1. The international PPP poverty threshold of $1.25 per day per person is converted to yuan using the PPP exchange rate of 3.46 yuan to the US dollar in 2005 (Chen and Ravallion 2008).
2. We treat both the official poverty line and the PPP $1.25/day poverty line as rural poverty lines and convert them to 2002 and 2007 prices using the NBS rural consumer price index. Urban absolute poverty lines are equal to the rural poverty lines adjusted by the urban-rural cost of living differential of 1.3876 in 2002 and 1.3382 in 2007 (taken from Brandt and Holz [2006], and for 2007 updated using NBS consumer price indexes).
3. The relative poverty lines are calculated separately for urban and rural. Median incomes for rural and urban (including migrants) are calculated using regional x provincial weights and the NBS income definition.
4. All poverty lines are in current-year prices.

Table 2.16. *Poverty incidence and composition, 2002 and 2007 (%)*

	Official poverty line		PPP$1.25/day		50% of median income	
	2002	2007	2002	2007	2002	2007
Poverty incidence						
Rural	11.22	5.59	27.49	13.88	13.69	14.32
Urban	0.55	0.12	2.34	0.44	11.88	12.37
Migrants	2.43	0.08	5.80	0.17	18.57	7.00
urban+migrants	0.68	0.12	2.58	0.42	12.34	11.98
Total	7.44	3.20	18.57	8.00	13.21	13.30
Poverty composition						
Rural	96.72	98.35	95.02	97.70	66.52	60.63
Urban	2.48	1.57	4.21	2.23	30.01	37.73
Migrants	0.80	0.08	0.77	0.07	3.47	1.64
urban+migrants	3.28	1.65	4.98	2.30	33.48	39.37
Total	100	100	100	100	100	100

Note: Calculated using three-level weights for total and regional x provincial weights for subgroups. NBS income definition; current year prices.

Table 2.17. *The structure of poverty by region (%)*

	Official poverty line		PPP$1.25/day		50% of median income	
	2002	2007	2002	2007	2002	2007
Poverty incidences						
Large municipalities	0.07	0.09	0.70	0.35	0.89	1.87
Eastern	3.77	1.59	8.80	3.74	7.73	7.78
Central	6.98	2.74	19.87	7.47	14.21	12.81
Western	13.53	6.07	31.64	14.77	20.49	21.99
Total	7.44	3.20	18.57	8.00	13.21	13.30
Poverty composition						
Large municipalities	0.03	0.09	0.12	0.14	0.21	0.44
Eastern	18.33	17.59	17.16	16.51	21.19	20.65
Central	30.42	28.41	34.71	30.94	34.91	31.94
Western	51.22	53.91	48.00	52.40	43.69	46.96
Total	100	100	100	100	100	100

Note: Calculated using three-level weights for total and regional x provincial weights for subgroups. NBS income definition; current year prices. A single relative poverty line calculated as 50 percent of the national median income is used for all regions.

[1] These statistics are based on data published by the NBS. As discussed below, the NBS statistics yield somewhat different rates of growth in household income than the CHIP data. According to the NBS data, household per capita income in real terms increased 7.34 times for rural households and 7.53 times for urban households during the 1978-2007 period (National Bureau of Statistics 2008b).

[2] The total amount of agricultural subsidy funds, including grain subsidies, reached 52.6 billion yuan in 2007; see "Nongyebu: Guojia jiang baochi zhi nonghui nong zhengce de wendingxing lianxuxing" (Ministry of Agriculture: The State Will Maintain Stable and Continuous Policy Support for Agriculture), September 13, 2007, at http://www.china.com.cn/news/2007-09/13/content_8869413.htm (accessed August 22, 2011).

[3] See the introduction to the sampling procedure for the NBS household survey in 2002 (NBS 2003, pp. 339-340).

[4] See the introduction to the sampling procedure for the NBS household survey in 2007 (NBS 2008a, pp. 313-314).

[5] Note that Chongqing did not become a provincial-level municipality until 1997 and it is markedly less urbanized and less economically developed than China's other provincial-level municipalities (Beijing, Shanghai, Tianjin). Therefore, in this and other chapters, Chongqing is included as part of the western region.

[6] The geographic areas used to construct the CHIP sample frame are (1) large municipalities with provincial status (Beijing, Tianjin, and Shanghai, treated together as a separate geographic area [Chongqing is treated as part of Sichuan in western China for consistency with earlier rounds of the survey]), (2) eastern China (Hebei, Liaoning, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan); central China (Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, and Hunan); and western China (Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang).

[7] Chapter 3 provides two alternative estimates of imputed rents, one in which all imputed rents are calculated using the rate of return approach, and the other in which urban imputed rents are calculated based on the market rent approach and rural imputed rents are based on the rate of return approach. The former approach shows higher urban incomes and more rapid growth in urban incomes as it is more sensitive to housing price appreciation in urban China. In this chapter we use the latter approach, which gives lower estimates of national inequality. Table 2A.2 provides comparisons of the results calculated using the two approaches. See Chapter 3 for additional discussion and comparisons between the two approaches.

[8] See *China Statistical Yearbook 2008*, at http://www.stats.gov.cn/tjsj/ndsj/2008/indexch.htm, accessed August 22, 2011.

[9] The Theil indices, like the Gini, have a minimum value of 0 and increase with inequality. G(0), sometimes referred to as the Mean Log Deviation (MLD), is more

sensitive to income differences at the low end of the income distribution. G(1), sometimes referred to as the Theil index, places equal weight on income differences across the income distribution. More information about the Theil measures of inequality can be found in Cowell (2011) and at http://siteresources.worldbank.org/INTPA/Resources/tn_measuring_inequality.pdf and http://siteresources.worldbank.org/INTPGI/Resources/Inequality/litchfie.pdf, both accessed June 5, 2012.

[10] The Lorenz curve is a plot of the percentage of total income in society accruing to the bottom *x* percentage of the population. In the case of perfect equality (all members of the population have equal income), the Lorenz curve is coincident with the 45 degree line. The farther the Lorenz curve is from the 45 degree line, the greater is the inequality. In the case of perfect inequality (one person has all the income and everyone else has zero income), the Lorenz curve is a right angle and coincides with the axis. The Gini is calculated as the ratio of the area between the Lorenz curve and the 45 degree line to the total area under the 45 degree line. The minimum value of the Gini is zero, which occurs when there is perfect equality, and the maximum value is one, which occurs when there is perfect inequality. In practice the Gini for most countries generally falls between 0.2 and 0.7. See Cowell (2011) for a fuller discussion of inequality measurement.

[11] The alternative estimates are calculated as the rate of return times the estimated market value of housing. This yields values of imputed rents that are higher and that increased more rapidly than the base estimates, which are calculated using estimated market rents. The alternative estimates give higher contributions of urban imputed rents to overall inequality: 8.80 percent in 2002 and 17.45 percent in 2007. See Chapter 3 for further discussion.

[12] If the share of each income component had remained the same in 2002 and 2007, the inequality of total migrant income would have increased by 4 percent. The analysis in Chapter 6 in this volume, however, suggests that some of the change in the structure of migrant income was likely due to real economic factors, not merely a sample bias.

[13] The Gini coefficient is not decomposable by population subgroup.

[14] We also carried out the decomposition using alternative weights. The results are similar, so we do not report them here.

[15] Urban administrative areas in China often include not only urbanized districts but also farmland and rural populations, following the Mao-era practice of incorporating surrounding rural areas into city administration. See Chan (2010).

[16] The Gini coefficients for the other countries reported here are for 2005 and are measured over household income per capita. They are from the UNU-WIDER WIID2c database, at http://www.wider.unu.edu/research/Database/en_GB/wiid/ , accessed August 12, 2011. Note that the Ginis for Brazil and Honduras are the highest among all countries listed in this database for 2005-2006.