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## **An Evaluation of Poverty Prevalence in China**

**New Evidence from Four Recent Surveys**

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## **INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE**

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## ABSTRACT

Knowledge of actual poverty prevalence is important for any society concerned with improving public welfare and reducing poverty. In this paper, we calculate and compare the poverty incidence rate in China using four nationally representative surveys: the China Family Panel Studies (CFPS) of 2010, the Chinese General Social Survey (CGSS) of 2010, the Chinese Household Finance Survey (CHFS) of 2011, and the Chinese Household Income Project (CHIP) of 2007. Using both international and official domestic poverty standards, we show that poverty prevalence at the national, rural, and urban levels based on the CFPS, CGSS, and the CHFS are much higher than the official estimation and those based on the CHIP. The study highlights the importance of using independent datasets to validate official statistics of public and policy concern in contemporary China.

**Keywords:** poverty prevalence, the China Family Panel Studies, the Chinese Household Finance Survey, the Chinese Household Income Project, the Chinese General Social Survey

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# 1. INTRODUCTION

Since the economic reform began in 1978, China's economic growth not only has greatly improved the average standard of living in China but also has been credited with lifting hundreds of millions of Chinese out of poverty. According to one report (Ravallion and Chen 2007), the poverty rate dropped from 53 percent in 1981 to 8 percent in 2001. Because of the vast size of the Chinese population, even a seemingly low poverty rate of 8 percent implies that there were still more than 100 million Chinese people living in poverty, a sizable subpopulation exceeding the national population of the Philippines and falling slightly short of the total population of Mexico. Hence, China still faces an enormous task in eradicating poverty.

Poverty reduction and common prosperity are public policy goals openly pursued by the Chinese government today. However, both the formulation and the evaluation of antipoverty policies require a precise estimate of the actual degree of poverty. Given China's large population base, an estimated error of merely a few percentage points would have far-reaching consequences: millions of people would be wrongly classified as poor or nonpoor, blunting the government's targeting ability. In the absence of independent national representative surveys, most poverty estimates in current use hinge exclusively on official statistics released by the Chinese government.

Poverty estimates based on official statistics, however, are subject to critiques. First, government statistics, although useful for tracking trends, may suffer from biases due to either political interference or procedural limitations (Wu 2007). Second, the sampling frame is not transparent. Third, until recently the official poverty lines were far below the international standard, casting doubt on China's record in poverty reduction (Park and Wang 2001). Finally, strict restrictions on data access have prevented third parties from deriving or replicating official poverty estimates from raw unit-record data.

In this paper, we attempt to determine the current level of poverty prevalence in China. To obtain reliable estimates, we compare the results from four recently completed, nationally representative surveys and estimate the poverty level under a range of poverty lines derived from both international and official domestic standards. Finally, we derive our own best estimates of China's poverty prevalence.

In the following sections, we begin by reviewing the debate regarding the degree of poverty in China. We then describe the four surveys, the definition of poverty lines, and the poverty measure we use. Next, we report our estimates of poverty prevalence at the national, rural, and urban levels. Finally, we conclude the study and explain our findings.

## 2. LITERATURE REVIEW

Prior to the economic reform that began in 1977, the Chinese government ran a planned economy. Along with the economy, other social structures were strictly regulated by the state. Central to pre-reform-era China was the *hukou* (household registration) system that constrained people's mobility (Wu and Treiman 2004). As a result, most Chinese lived in their birthplaces. By 1980, less than 20 percent of the population was urban. Urban Chinese enjoyed more privileges than their rural counterparts, such as medical insurance, free housing, guaranteed jobs, and retirement pensions (Wu and Treiman 2004). Such institutional policies in favor of urban residents generated a large income gap between urban and rural Chinese (Kanbur and Zhang 2005). Within cities and rural areas, however, income inequality was relatively low (Khan and Riskin 2001; Xie and Hannum 1996). In cities, although few residents were rich, most were not poor either.<sup>1</sup> However, about two-thirds of the rural population lived in poverty (Ravallion and Chen 2007). Broadly speaking, at the onset of China's reform in the late 1970s, poverty in China was primarily a rural problem.

The rural household responsibility system adopted in the early 1980s granted farmers land cultivation rights and empowered them to make their own production decisions. With better-aligned incentives, agricultural production and rural incomes witnessed a dramatic increase in the ensuing years. Consequently, the rural poverty rate dropped sharply from 76 percent in 1980 to 24 percent in 1986. In other words, more than 400 million people moved out of poverty in a short, six-year spell. Afterward, however, the pace of poverty reduction slowed. By 2001, the rural poverty rate stood at 13 percent, still much higher than the urban poverty rate (at 0.5 percent).

For a long time, China's official poverty line for rural areas was only 300 yuan per person per year at the 1990 prices, or about US\$150<sup>2</sup> according to the purchasing power parity exchange rates, much lower than the widely used \$1.00-a-day poverty line.<sup>3</sup> As shown in Ravallion and Chen (2007), if one were to use the low official rural poverty line, China would have eradicated urban poverty by 2000, a time when massive numbers of urban workers were laid off and struggling for survival amid the state-owned enterprise reform. Apparently, the low official line was not based on realistic assessments of actual poverty in China. To address this concern, some scholars have estimated Chinese poverty rates using alternative poverty lines. For example, based on a sample of 3,600 households from the National Urban Household Income and Expenditure Survey, Fang, Zhang, and Fan (2002) showed that if a higher poverty line of \$1.50 a day is used, which better reflects the cost of living in cities, the urban poverty rate would be much higher than the official figures. Moreover, the poverty rate based on the new poverty line exhibited an increase from 8.4 percent to 8.9 percent in 1996–1998, a period of active urban reform.

Using a larger sample of more than 12,000 households during the longer period from 1986 to 2000, Meng, Gregory, and Wang (2005) reported poverty estimates according to province-specific lower and upper poverty lines based on different compositions of the cost of basic needs. They found that urban poverty increased in the 1990s with the urban reforms. In 2000, their expenditure-measured poverty incidence was 10.2 percent and 3.9 percent, corresponding to the upper and lower poverty lines. By comparison, their income-based measures were much lower, at 4.0 percent (upper line) and 1.7 percent (lower line).

Using the Chinese Household Income Project (CHIP) surveys in 1988, 1995, 1999, and 2002, Appleton, Song, and Xia (2010) documented the trend and patterns of urban poverty. Although the CHIP survey questionnaires were designed by the Chinese Academy of Social Sciences, the sample was drawn from the China household income and expenditure surveys—government surveys—and fielded by the National Bureau of Statistics of China. In essence, the CHIP surveys are merely subsamples of the government's national surveys. Appleton, Song, and Xia also found that poverty estimates based on different poverty lines yielded very different results. For instance, according to the international \$1.00-a-day line (or 1,200 yuan, roughly the same as the poverty line used by Ravallion and Chen 2007), only 0.1 percent of the urban population lived under poverty in 2002. Even using a

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<sup>1</sup> In 1981, the urban poverty rate was as low as 0.82 percent according to the official poverty line. Even using the higher poverty line based on the cost of basic needs, the poverty incidence was only 6 percent (Ravallion and Chen 2007).

<sup>2</sup> In this paper, all dollars are US dollars.

<sup>3</sup> There was no comparable urban poverty line.



higher line of \$2.00-a-day per capita income (or 2,400 yuan), the urban poverty rate was still as low as 1.9 percent. When the poverty line was further increased to \$3.00 a day (3,600 yuan), the poverty rate rose by three times to 7.9 percent. Using the most recent wave of the CHIP survey in 2007, Li, Luo and Sicular (2013) estimate that only 0.44 percent of the urban population lived under the \$1.25-a-day line. The inclusion of a rural migrant sample does not change the estimate much. They argue that the urban poverty rate is much higher (12.3 percent in 2007) if the relative poverty line, 50 percent of the urban median income, is applied.

In rural areas, the estimate of poverty incidence is also sensitive to the choice of poverty lines. For instance, based on a survey conducted annually by China's Research Center for Rural Economy in three provinces (Zhejiang, Hubei, and Yunnan), Glauben et al. (2012) showed that rural poverty incidence was only 3.9 percent in 2000 and 1.5 percent in 2004 based on the national poverty line. If the international \$1.00-a-day poverty line is used, the average poverty rate in the three provinces is much higher, at 18.6 percent and 10.0 percent in these two years. The results are mainly driven by the high concentration of poverty in Yunnan province. In 2004, the poverty rates based on the international line in Zhejiang, Hubei, and Yunnan Provinces were 0.3 percent, 4.3 percent, and 27.5 percent, respectively. This suggests rural poverty was more concentrated in the western region.

Xing et al. (2009) provided supporting evidence. Using a full-coverage survey of households in three villages in a designated poverty county in Guizhou Province, one of the poorest provinces in western China, they estimated poverty rates of 31.7 percent and 44.6 percent in 2004, respectively, depending on whether the national poverty line or the international \$1.00-a-day line were used. These two studies confirmed the existence of pockets of poverty in rural China. However, the datasets used in the two papers have a key limitation—they are not nationally representative. So it is impossible to infer the figures of national poverty based on those data sources.

A recent report of Luo and Sicular (2013) documented the rural poverty rate using a nationally representative version of the CHIP 2007. Their estimates of the rural poverty rate ranged from 5.59 to 21.07, depending on which poverty line is applied. The official rural poverty rate was the lowest. Rural poverty would be much higher if relative poverty lines are applied. No matter which poverty lines are chosen, they found that the rural poor population decreased by one half from 2002 to 2007. However, they also found that the poverty level among the poorest did not improve as much.

In summary, past studies on poverty in China have been based primarily on official data sources, which it is claimed are nationally representative. However, poverty rates estimated from these official data sources seem low, particularly in the cities. Since sampling frames of official surveys are not transparent, it is difficult to understand what contributes to the low estimates. Although a few papers have attempted to estimate poverty rates using independent surveys, their datasets are not nationally representative, and thus their results are not comparable to those based on official datasets.

In this paper, we contribute to the knowledge gap by computing and comparing poverty rates using four newly available nationally representative surveys. Since three of the four surveys were independently conducted with a transparent sampling framework, the comparison sheds new light on the issue of whether poverty rates based on official data sources are underestimated.

### 3. DATA AND METHOD

In this study, we use data from four recent nationally representative surveys. These surveys are all well-known large data collection projects in China, conducted by top-tier academic institutions. Among them, the Chinese General Social Survey (CGSS) and the CHIP have already conducted several waves. Their rich experience in data collection ensures the high quality of data in the most recent waves. The China Family Panel Studies (CFPS) and the Chinese Household Finance Survey (CHFS) represent the burgeoning interest in panel studies in China. The questionnaires and sampling of these panel surveys were well designed. The baseline surveys are strictly carried out to set the stage for follow-up surveys. These four surveys independently provide valid data on the incomes and expenditures of Chinese households. Jointly, a comparison of poverty estimates across the four datasets constitutes a meaningful evaluation of poverty prevalence in China. The following is a brief introduction of the four surveys.

The CFPS is a large-scale panel survey project conducted by the Institute of Social Science Survey at Peking University.<sup>4</sup> The project was designed to study the long-term dynamics of social transition in China. With the household as the target of sampling, the survey comprehensively investigates the household as a whole and all individual household members. It also collects information about the community in which the household is located. Our study uses the data from the CFPS baseline survey, which was carried out in 2010. The baseline household questionnaire collected information about households' incomes and expenditures in 2009 in detail. We sum up the household incomes from wages and salaries, agricultural production, property, and transfers. We also compute living costs, which are not enumerated in detail under "overall household consumption expenditure." The baseline survey has a nearly nationally representative sample and interviewed 14,960 households in 25 provinces (excluding Inner Mongolia, Xinjiang, Tibet, Hainan, Ningxia, Qinghai, Hong Kong, Macau, and Taiwan), representing about 95 percent of the Chinese population (Xie 2012).

The CGSS is a nationwide, repeated, cross-sectional general survey project in China. The project was launched jointly by Renmin University and the Hong Kong University of Science and Technology in 2003.<sup>5</sup> The latest survey, which we analyze for this study, was conducted in 2010. Since the project aims to systematically study the changing relationship between social structure and quality of life, the 2010 survey includes household financial situation as a key domain. We compute household income from a list of income sources, including wages and salaries, agricultural production, property, and transfers. We compute household expenditure from a list of expenditure items. The sample of CGSS 2010 covers 12,000 rural and urban households in 31 provinces (excluding Hong Kong, Macau, and Taiwan). CGSS 2010 and CFPS 2010 are quite comparable because both of them collected information about household financial situations in 2009 and applied the same methods in defining rural–urban communities.<sup>6</sup> Most importantly, the two surveys have similar distributions of household income and expenditure (Xie 2012; also see Figures 5.1–5.2 and 6.1–6.2).

The third dataset we use for this study is the baseline of the CHFS.<sup>7</sup> The CHFS is the recently launched household finance–specific project with a nationally representative sample and panel design. The project is directed by the Survey and Research Center for China Household Finance at the Southwestern University of Finance and Economics. The baseline survey was carried out in 2011. It provides information about household assets, income, expenditures, and social and commercial insurance in 2010. The baseline survey covered 8,438 households, sampled from 320 communities in 80 districts/counties in 25 provinces. We include this dataset in our study not only because of its unusual detail in collecting household financial information but also because of the amount of

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<sup>4</sup> The website of the project can be found at <http://www.issu.edu.cn/index.php?catid=7&action=index>.

<sup>5</sup> A comprehensive introduction of the agenda, themes, and designs of the Chinese General Social Survey (CGSS) project can be found in Bian and Li (2012).

<sup>6</sup> For the China Family Panel Studies, there are no separate sampling frames for rural and urban areas. The rural/urban status of a household was postdetermined in the field, judged by the interviewer based on the location, the administrative status, and the level of socioeconomic development of the community where the household was located. This kind of postdetermined rural-urban definition was also applied in CGSS 2010, although the sampling design of CGSS split the rural and urban population.

<sup>7</sup> The website of the project is at <http://www.chfsdata.org/>.

publicity it received. The shockingly high level of the Gini index based on this survey aroused a lot of media attention and academic debate as soon as it was released (Kao 2012; *The Economist* 2012). The survey also aroused suspicion of official figures, which are believed to either hide or underestimate the worsening wealth gap in China (*Want China Times* 2013).

The final data used for this study are the 2007 CHIP data. The CHIP focuses on income and inequality. The project is organized by the Chinese Academy of Social Science with cooperation from the National Bureau of Statistics of China. It was initiated in 1988, and four waves of cross-sectional surveys have been conducted. This study will use its most recent survey, that is, CHIP 2007, which was carried out in 2008, measuring household income and expenditure in 2007. CHIP 2007 contains 13,000 rural households and 10,000 urban households in 16 provinces as well as 5,000 rural–urban migrant households in 9 provinces.<sup>8</sup> However, we were given access to the data of only some of the provinces from the original sample. The data we use for analysis concern 8,000 rural households from Hebei, Jiangsu, Zhejiang, Anhui, Henan, Hubei, Guangdong, Chongqing, and Sichuan Provinces and 5,000 urban households from Shanghai, Jiangsu, Zhejiang, Anhui, Henan, Hubei, Guangdong, Chongqing, and Sichuan Provinces. Unlike the CFPS, CGSS, and CHFS, which are conducted by three independent academic institutions, the CHIP outsourced its data collection to the National Bureau of Statistics of China. We will discuss the implications of independent surveys in the conclusion.

These four surveys are mostly comparable in region and time. Nevertheless, we note the varying coverage of provinces across datasets. Only CGSS 2010 covered all the provinces in mainland China. The CFPS did not interview remote provinces with high concentrations of ethnic minorities, such as Qinghai, Ningxia, Xinjiang, Inner Mongolia, Tibet, and Hainan. The CHFS covered almost the same set of provinces as did the CFPS, except that it interviewed in Qinghai but not Fujian. CHIP 2007 covered the fewest provinces. The difference in sample coverage could be a source of inconsistency for the estimation of poverty prevalence across the datasets. Nevertheless, we decided not to limit the four samples to the same set of provinces, because given the great variation in economic development between different regions across China, our analysis should be grounded in a large sample including as many provinces as possible. Since the population size and the distribution of rural–urban population vary in each province, we weight the data using the actual size of population in every province.<sup>9</sup> We also weight the data using household size. The final weights for national, rural, and urban samples are calculated using the equations below:

$$W_{rural} = \frac{P_{ri}}{P_r} * \frac{S_{ij}r_{ij}}{\sum_j S_{ij}r_{ij}} \quad (1)$$

$$W_{urban} = \frac{P_{ui}}{P_u} * \frac{S_{ij}(1-r_{ij})}{\sum_j S_{ij}(1-r_{ij})} \quad (2)$$

$$W_{urban} = \frac{P_{ri}}{P_t} * \frac{S_{ij}r_{ij}}{\sum_j S_{ij}r_{ij}} + \frac{P_{ui}}{P_t} * \frac{S_{ij}(1-r_{ij})}{\sum_j S_{ij}(1-r_{ij})} \quad (3)$$

In equations (1) through (3),  $S_{ij}$  denotes the number of household members in the  $j$ th household of the  $i$ th province, and  $r_{ij}$  denotes whether this household is in a rural community ( $r_{ij}=1$ ) or in an urban community ( $r_{ij}=0$ ).  $P_{ri}$  and  $P_{ui}$  denote, respectively, the size of rural population and of urban population in province  $i$ .  $P_r$ ,  $P_u$ , and  $P_t$  are the sizes of rural population, urban population, and total population in all provinces in the sample.

<sup>8</sup> The sampling methods and data description of the Chinese Household Income Project 2007 can be found in Luo et al. (2013).

<sup>9</sup> The data of national, rural, and urban population sizes are from the 2010 census (Population Census Office 2012).

<sup>10</sup> We define urban population as residents in cities, not including residents in townships.

We also note that the four surveys were conducted in different years. The CFPS and The CGSS were conducted in 2010, whereas the CHIP was conducted in 2008 and the CHFS in 2011. Changes in poverty prevalence over the years could weaken the comparability of data from different years. To make the CHIP more comparable to the CFPS and the CGSS, we adjust its income and expenditure data based on income growth rates between 2007 and 2009.<sup>11</sup> For the CHFS, we use its original data but inflate the poverty line in 2009 to the 2010 level or directly adopt poverty lines from 2010.

We measure poverty by absolute poverty lines. To be thorough, we adopt multiple definitions of the poverty line. The threshold of \$1.00 per day is a widely used poverty line initiated by the World Bank. Considering the higher living cost in urban and developed areas, however, a higher poverty line, \$1.50 per day in such areas, is comparable to \$1.00 per day in rural and developing areas (Fang, Zhang, and Fan 2002). Therefore, we use thresholds of both \$1.00 and \$1.50 per day to compute the poverty lines for each province in 2009 and 2010. Since the thresholds are measured in US dollars in 1985, we convert them to RMB using 1985 purchasing power parity and inflate them to 2009 and 2010 levels by rural and urban province-specific CPIs.<sup>12</sup> In addition, we use the official poverty lines so as to compare our results with official statistics. For rural areas, the Chinese government has a well-defined national poverty line. The first official rural poverty line was developed in 1986, defining rural residents with per capita net incomes of less than 206 yuan as absolutely poor. The second is a low-income standard of 865 yuan enacted in 2000. In 2008, the government amended the poverty line for the third time, unifying the absolute poverty standard and low-income standard, setting per capita net income of less than 1,067 yuan as the poverty standard. This standard was further raised to 1,196 yuan in 2009 and 1,274 yuan in 2010 to reflect the change in CPI. In 2011, the government raised the poverty line again to 2,300 yuan. To be thorough, we use the official rural poverty lines of 1,196 yuan in 2009, 1,274 yuan in 2010, and the new poverty threshold of 2,300 yuan for the estimation of rural poverty prevalence. For urban areas, there is no nationwide official poverty standard. Instead, we use urban minimum living standards in 2009 and 2010 at the provincial level as the official definition of urban poverty. The urban minimum living standards are usually drawn up at the city/county level, whereas the Ministry of Civil Affairs released the urban minimum living standard aggregated at the provincial level for each season. We combined the standards for the four seasons to obtain the yearly urban minimum living standard for each province.

In this paper, we use Foster-Greer-Thorbecke (FGT) indices based on household net income and household expenditure to compute our poverty measures. FGT indices are composed of three components. The first is the headcount ratio, denoted by  $P_0$ , which indicates the share of population living below the poverty line. The second is the poverty gap index ( $P_1$ ), which takes the total shortfall of individual income relative to poverty line into account. The third is a weighted poverty gap index ( $P_2$ ), which takes inequality among the poor into account and place greater weight on the extremely poor (Foster, Greer, and Thorbecke 1984).<sup>13</sup> The FGT indices can be generalized into a single equation. In equation (4),  $x$  denotes per capita net income or per capita expenditure, and  $z$  denotes the poverty line. When  $\alpha$  equals 0, 1, and 2, the index becomes  $P_0$ ,  $P_1$ , and  $P_2$ .

$$P_\alpha = \int_0^z \left[ \frac{z-x}{z} \right]^\alpha f(x) dx \quad (4)$$

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<sup>11</sup> We calculate the household income growth rates based on rural and urban household incomes in 2007, 2008, and 2009. Data are from Tables 10-5 and 10-18 in the China Statistical Yearbook 2010 (National Bureau of Statistics of China 2011) and Tables 9-5 and 9-18 in the China Statistical Yearbook 2009 (National Bureau of Statistics of China 2010a).

<sup>12</sup> Consumer Price Index (CPI) is a measure of the current price of goods and services in terms of the prices during the same period in a previous year. It shows the change in the purchasing-power of a currency and the rate of inflation. CPI data are collected from the China Statistical Yearbook of various years.

<sup>13</sup>  $P_2$  is an index which combines the information of poverty level and income inequality among the poor. When  $\alpha = 2$ , the Eq. 4 can be also written as  $P_2 = H(I^2 + (1 - I)^2 C_p^2)$ .  $H$  is the headcount ratio,  $I$  is the income-gap ratio, and the squared coefficient of  $C_p^2$  is the measure of inequality (Foster, Greer, and Thorbecke 1984).

## 4. RESULTS

### National Poverty Prevalence Level

Table 4.1 presents the national poverty prevalence level using the thresholds of \$1.00 per day and \$1.50 per day. The upper panel of Table 4.1 shows the poverty prevalence level computed from net household income per capita. Among the four surveys, the poverty levels based on the CHIP are the lowest, with poverty incidences of 3.3 percent below the poverty line of \$1.00 per day and of 9.2 percent below the poverty line of \$1.50 per day. By contrast, CHFS provides the highest estimates of poverty prevalence: Using the \$1.00-per-day line, nearly one fifth of the national population is poor; using the \$1.50-per-day line, about a quarter of the national population are poor. The CGSS and CFPS produce similar results. The poverty incidences are 10.8 percent in the CFPS and 12.5 percent in the CGSS under \$1.00 per day and 18.7 percent in the CFPS and 22.2 percent in the CGSS under \$1.50 per day. The two alternative poverty measures,  $P_1$  and  $P_2$ , provide consistent rankings among the four surveys.

**Table 4.1 Poverty for China as a whole using \$1.00 and \$1.50 per day thresholds**

Study	Based on Household Net Income per Capita					
	\$1.00 per Day			\$1.50 per Day		
	$P_0$	$P_1$	$P_2$	$P_0$	$P_1$	$P_2$
CHIP	3.26	1.37	2.64	9.24	2.91	2.34
CGSS	12.53	5.15	3.07	22.21	9.23	5.42
CFPS	10.82	4.70	2.82	18.69	8.06	4.84
CHFS	18.53	10.66	8.14	25.67	14.55	10.70
Study	Based on Household Expenditure per Capita					
	\$1.00 per Day			\$1.50 per Day		
	$P_0$	$P_1$	$P_2$	$P_0$	$P_1$	$P_2$
CHIP	1.64	0.30	0.09	7.55	1.57	0.53
CGSS	9.76	3.69	2.04	20.24	7.39	3.99
CFPS	8.77	2.61	1.16	18.22	6.15	2.97
CHFS	11.53	3.98	2.04	23.16	8.37	4.37

Source: CHIP (2007); CGSS (2010); CFPS (2010); CHFS (2011).

Note: All dollars are US dollars. CHIP = Chinese Household Income Project; CGSS = Chinese General Social Survey; CFPS = China Family Panel Studies; CHFS = Chinese Household Finance Survey.

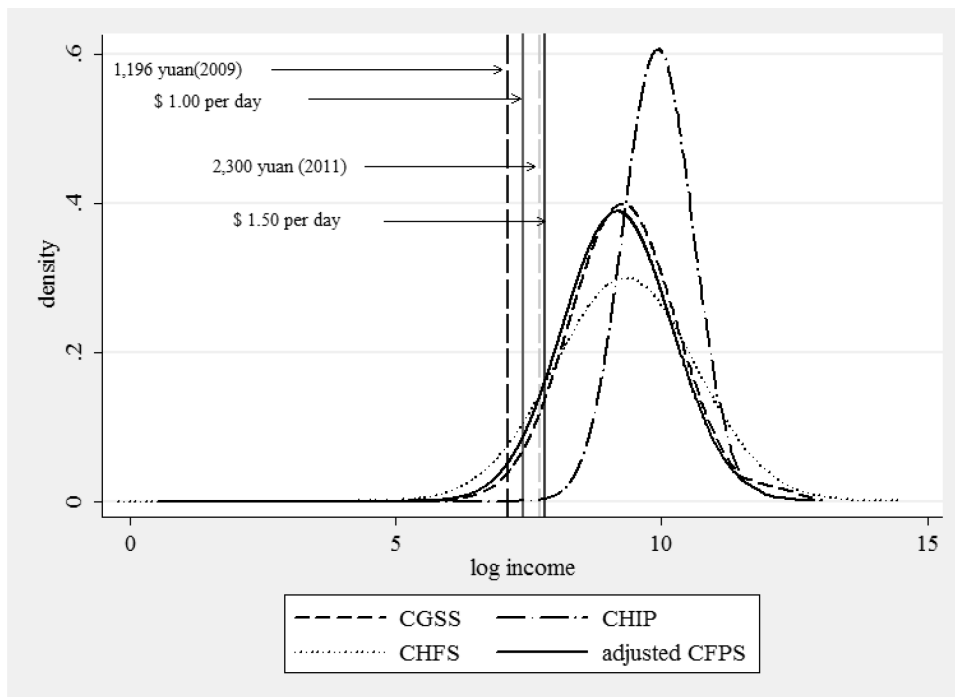
When we estimate poverty prevalence levels based on household expenditure per capita, the results from the CFPS, CGSS, and CHFS are close, whereas the estimates from the CHIP are still very low. As shown in the lower panel of Table 4.1, the poverty incidence based on the CHIP is only 1.6 percent under \$1.00 per day and 7.6 percent under \$1.50 per day. These estimates are much lower than those from the CFPS, CGSS, and CHFS, which suggest that about 10 percent of the national population lives under the \$1.00-per-day line-and about 20 percent lives under the \$1.50-per-day line.

## 5. RURAL POVERTY PREVALENCE LEVEL

Next, we investigate rural poverty prevalence based on \$1.00 per day, \$1.50 per day, and officially defined rural poverty lines. We use two versions of official rural poverty lines: 1,196 yuan per capita in 2009 prices is the previous threshold, and 2,300 yuan per capita is the newest one.

Figures 5.1 and 5.2 plot the normal density curves of household net income per capita and household expenditure per capita for rural households of the four surveys. In the figures, we use vertical straight lines to represent different poverty lines. We can see that 1,196 yuan is the lowest poverty line, and \$1.00 per day is the second lowest. The newly defined official line of 2,300 yuan is higher and close to the \$1.50- per-day line. According to Figure 5.1, the distributions of household income of CFPS and CGSS are similar to each other. The income of the CHIP has the highest mean and the least dispersion. In contrast, the CHFS has the lowest mean income and the highest income inequality. The distribution of household expenditure in Figure 5.2 exhibits a similar distribution of expenditure in the CFPS and CGSS, whereas the CHIP and CHFS are higher in mean expenditure.

**Figure 5.1 The distribution of household net income per capita (rural)**

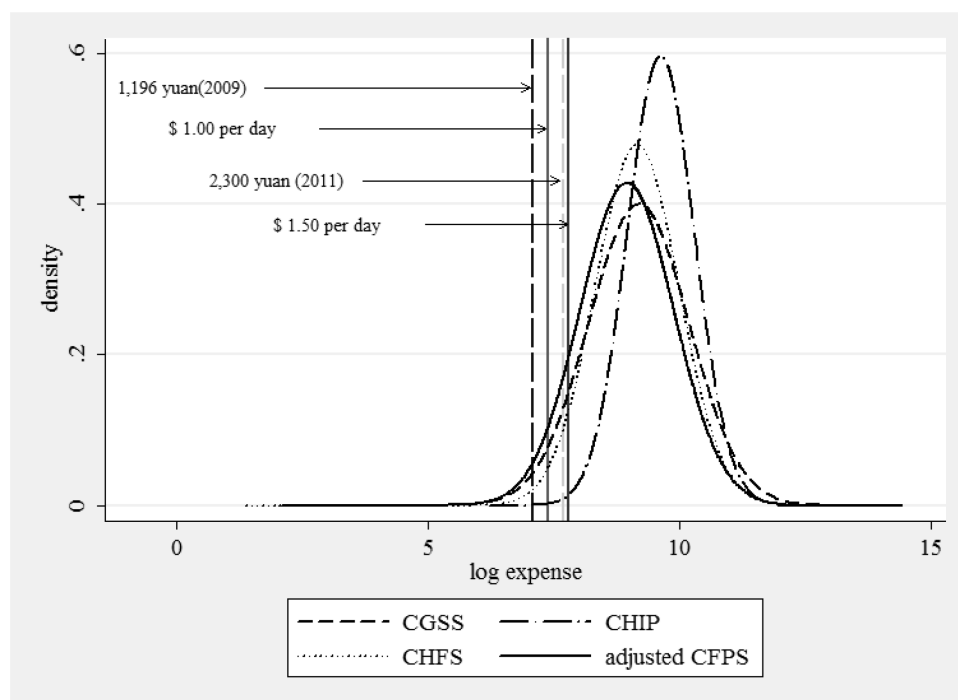


Source: CHIP (2007); CGSS (2010); CFPS (2010); CHFS (2011).

Notes: The four vertical straight lines represent the poverty lines of 2009, \$1.00 per day, new poverty threshold, and \$1.50 per day. All dollars are US dollars.

CGSS = Chinese General Social Survey; CHIP = Chinese Household Income Project; CHFS = Chinese Household Finance Survey; CFPS = China Family Panel Studies.

**Figure 5.2 The distribution of household expenditure per capita (rural)**



Source: CHIP (2007); CGSS (2010); CFPS (2010); CHFS (2011).

Note: The four vertical straight lines represent the poverty lines of 2009, \$1.00 per day, new poverty threshold, and \$1.50 per day. All dollars are US dollars.

CGSS = Chinese General Social Survey; CHIP = Chinese Household Income Project; CHFS = Chinese Household Finance Survey; CFPS = China Family Panel Studies.

Table 5.1 presents the estimates of  $P_0$ ,  $P_1$ , and  $P_2$  for the rural population based on different poverty lines. According to the results from household net income per capita, the CHIP presents the lowest level of poverty prevalence: Only 2–13 percent of rural residents live below the poverty lines. Results from the other three datasets are relatively close. Among them, the CHFS indicates the highest poverty prevalence level, with about 16 percent of rural residents living below the lowest poverty line and almost 30 percent of rural residents living below the higher poverty lines, whereas the CGSS shows a less extreme picture: about 8 percent of rural residents live below the official line of 1,196 yuan, 12 percent below the \$1.00-per-day line, and about 20 percent below the official line of 2,300 yuan or \$1.50-per-day line. The estimates based on  $P_1$  and  $P_2$  are largely the same as  $P_0$ .

Similarly, if we look at the expenditure-based estimates, although the CHIP shows a low level of poverty prevalence, the CGSS, CFPS, and CHFS produce largely consistent estimates. The rural poverty incidence ( $P_0$ ) is about 4–10 percent based on the 1,196 yuan line, about 10–15 percent based on the \$1.00-per-day line, 18–26 percent based on the 2,300 yuan line, and 20–30 percent based on the \$1.50-per-day line.  $P_1$  and  $P_2$  based on the three datasets yield similar estimates as well.

In sum, the estimates of rural poverty prevalence from expenditure data are close to, although slightly lower than, those from income data. If we trust what the majority of estimates indicate, we conclude that around 10 percent of the rural population would be considered poor based on the lower poverty lines and nearly a quarter of the rural population would be considered poor based on the higher poverty lines.

**Table 5.1 Rural poverty using \$1.00 per day, \$1.50 per day, national rural poverty line at the survey year, and new rural poverty line**

Study	Based on Household Net Income per Capita											
	\$1.00 per Day			\$1.50 per Day			Rural Poverty Line in 2009/2010			New Poverty Line (2,300 Yuan)		
	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>
CHIP	4.66	1.94	3.77	13.20	4.14	3.33	2.44	1.47	5.10	11.98	3.81	3.20
CGSS	16.49	6.77	4.00	28.69	12.08	7.09	9.81	4.19	2.53	25.85	10.98	6.37
CFPS	12.10	5.29	3.18	20.81	9.01	5.43	8.15	3.42	2.00	18.67	8.14	4.88
CHFS	20.83	11.20	8.20	29.47	15.96	11.29	16.19	8.94	6.77	27.29	14.71	10.47
Study	Based on Household Expenditure per Capita											
	\$1.00 per Day			\$1.50 per Day			Rural Poverty Line in 2009/2010			New Poverty Line (2,300 Yuan)		
	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>	<i>P</i> <sub>0</sub>	<i>P</i> <sub>1</sub>	<i>P</i> <sub>2</sub>
CHIP	2.37	0.43	0.13	10.74	2.24	0.75	0.68	0.13	0.04	9.77	1.98	0.65
CGSS	12.60	4.51	2.29	25.95	9.34	4.88	6.88	2.28	1.12	22.83	8.10	4.13
CFPS	9.61	2.87	1.27	19.86	6.74	3.26	4.49	1.25	0.54	17.53	5.85	2.76
CHFS	15.33	5.36	2.76	30.15	11.09	5.84	9.83	3.25	1.72	25.97	9.54	15.33

Source: CHIP (2007); CGSS (2010); CFPS (2010); CHFS (2011).

Note: We use the official rural poverty line in 2009 for CHIP, CGSS, and CFPS and poverty line in 2010 for CHFS All dollars are US dollars.

CHIP = Chinese Household Income Project; CGSS = Chinese General Social Survey; CFPS = China Family Panel Studies; CHFS = Chinese Household Finance Survey.

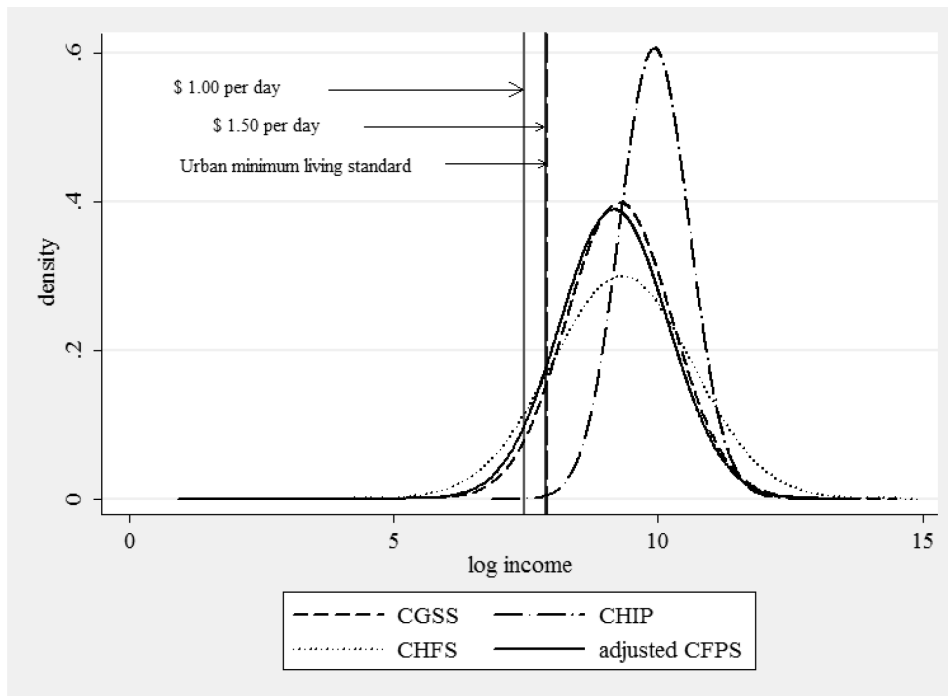


## 6. URBAN POVERTY PREVALENCE LEVEL

We now turn to estimating the urban poverty prevalence level. The poverty lines for urban residents include \$1.00 per day, \$1.50 per day, and the urban minimum living standard.

Figures 6.1 and 6.2 plot the distribution of household net income per capita and expenditure per capita for urban households in the four surveys. The vertical straight lines in the figures represent poverty lines of \$1.00 per day and \$1.50 per day and the urban minimum living standard.<sup>14</sup> We can see that the urban minimum living standard is close to the \$1.50-per-day line. Among the four surveys, the CGSS and the CFPS exhibit similar income distributions, whereas the CHIP shows the highest mean income and lowest dispersion and the CHFS shows the lowest mean income and highest dispersion. For the distribution of expenditure, the CGSS and CFPS also resemble one another. The CHFS has a slightly higher mean expenditure, and the CHIP has the highest mean.

**Figure 6.1 The distribution of household net income per capita (urban)**



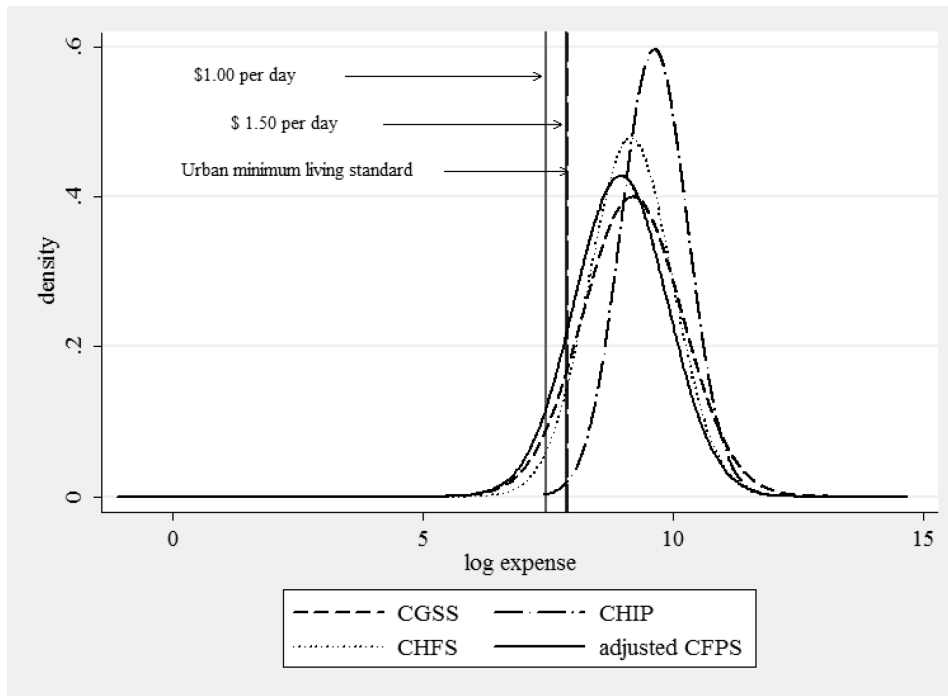
Source: CHIP (2007); CGSS (2010); CFPS (2010); CHFS (2011).

Note: The three vertical straight lines represent the poverty lines of \$1.00 per day and \$1.50 per day and the urban minimum living standard. All dollars are US dollars.

CGSS = Chinese General Social Survey; CHIP = Chinese Household Income Project; CHFS = Chinese Household Finance Survey; CFPS = China Family Panel Studies.

<sup>14</sup> The urban minimum living standard varies across cities. Here, we take the average of the urban minimum living standard aggregated at the provincial level.

**Figure 6.2 The distribution of household expenditure per capita (urban)**



Source: CHIP (2007); CGSS (2010); CFPS (2010); CHFS (2011).

Note: The three vertical straight lines represent the poverty lines of \$1.00 per day and \$1.50 per day and the urban minimum living standard. All dollars are US dollars.

CGSS = Chinese General Social Survey; CHIP = Chinese Household Income Project; CHFS = Chinese Household Finance Survey; CFPS = China Family Panel Studies.

Table 6.1 presents estimates of urban poverty prevalence under different poverty lines. We look first at the upper panel of the table, which presents income-based estimates. The panel shows that the poverty prevalence based on the CHIP is very low, the poverty incidence being lower than 0.3 percent regardless of the poverty line being used. The CHFS presents the highest level of urban poverty prevalence: About 13 percent of urban residents are counted as poor under the \$1.00-per-day line, and nearly a fifth of urban residents are counted as poor under the urban minimum living standard. Again, the CFPS and CGSS produce modest and similar estimates: About 4 percent of the urban population falls below the \$1.00-per-day line and 9 percent below the \$1.50-per-day line and the urban minimum living standard.

**Table 6. 1 Urban poverty using the \$1.00-per-day, \$1.50-per-day, and urban minimum living standard**

Study	Based on Household Net Income per Capita								
	\$1.00 per Day			\$1.50 per Day			Urban Minimum Living Standard		
	$P_0$	$P_1$	$P_2$	$P_0$	$P_1$	$P_2$	$P_0$	$P_1$	$P_2$
CHIP	0.10	0.08	0.08	0.26	0.12	0.09	0.26	0.12	0.09
CGSS	4.25	1.76	1.12	<b>8.67</b>	3.28	1.90	9.24	3.50	2.00
CFPS	3.99	1.56	0.93	7.33	2.96	1.68	8.35	3.38	1.91
CHFS	13.26	9.39	8.02	16.93	11.30	9.35	19.00	12.12	9.92

Study	Based on Household Expenditure per Capita								
	\$1.00 per Day			\$1.50 per Day			Urban Minimum Living Standard		
	$P_0$	$P_1$	$P_2$	$P_0$	$P_1$	$P_2$	$P_0$	$P_1$	$P_2$
CHIP	0.00	0.00	0.00	0.33	0.05	0.01	0.34	0.07	0.02
CGSS	3.81	1.97	1.53	8.30	3.33	2.14	9.00	3.51	2.24
CFPS	4.27	1.22	0.55	9.43	3.02	1.42	11.20	3.95	1.99
CHFS	2.77	0.79	0.39	7.07	2.11	0.97	9.62	2.94	1.37

Source: CHIP (2007); CGSS (2010); CFPS (2010); CHFS (2011).

Note: All dollars are US dollars.

CHIP = Chinese Household Income Project; CGSS = Chinese General Social Survey; CFPS = China Family Panel Studies; CHFS = Chinese Household Finance Survey.

We next look at the urban poverty level from the expenditure data shown in the lower panel of Table 6.1. The urban poverty prevalence estimated from the CHIP is extremely low. Virtually all the urban population lives above the \$1.00-per-day line, and only around 0.3 percent lives under the \$1.50-per-day line or the urban minimum living standard. By contrast, the CGSS, CFPS, and CHFS show urban poverty to be more prevalent. The expenditure-based estimates from the CGSS and CHFS are quite close, whereas the estimates from the CFPS are slightly higher: The poverty incidence is 3–4 percent based on the \$1.00-per-day line, 7–9 percent based on the \$1.50-per-day line, 9–10 percent for the CGSS and CHFS, and 11 percent for CFPS based on the urban minimum living standard.

Comparing the results of Tables 5.1 and 6.1, we clearly see that poverty prevalence in urban areas is much lower than that in rural areas. In urban areas, as the majority of estimates reflect, 4 percent of the population has income and expenditure below the \$1.00-per-day line, and around 9 percent of the population falls below the \$1.50-per-day line or the urban minimum living standard.  $P_1$  and  $P_2$  provide similar estimates except for the CFPS. Under the \$1.00-per-day line or the \$1.50-per-day line, the poverty incidence ( $P_0$ ) based on the CFPS ranks second. However, the CFPS ranks third in terms of  $P_1$  and  $P_2$ .

## 7. CONCLUSION

We have examined the current poverty prevalence level in China using four nationally representative samples. Results based on income data from the CFPS and CGSS and expenditure data from the CFPS, CGSS, and CHFS are remarkably consistent regardless of poverty definitions used. The poverty prevalence level estimated from these three datasets is much larger than that estimated based on the CHIP data and reported in official statistics. The national poverty rate in 2009 was about 10–13 percent using the \$1.00-per-day poverty threshold and 20 percent using the \$1.50-per-day poverty threshold. Poverty in rural areas is much more severe than in urban areas. Around 10 percent of the rural population lives below the lower poverty line using either the \$1.00-per-day poverty threshold or the 2009 government rural poverty line. The prevalence of poverty in rural China is as high as 23 percent when the \$1.50-per-day poverty threshold or the 2011 new government rural poverty threshold is used. In urban areas, the prevalence of poverty is 4 percent if measured with the \$1.00-per-day threshold and 9 percent if measured with the \$1.50-per-day threshold or the urban minimum living standard.

Based on the above figures, we infer that about 92 to 213 million rural people and 16 to 36 million urban people live below the poverty line in China. This estimate of the number of rural poor is much larger than the official estimates released earlier, stating that 35 million rural people in 2009 lived below the 1,196 yuan line (National Bureau of Statistics of China 2010b) and 128 million rural people in 2010 fell below the new government rural poverty threshold (Chinese Academy of Science 2012). The Chinese Academy of Social Science reported that around 50 million urban people, amounting to 8 percent of the population in cities and towns, did not meet the urban living standard by the end of 2009 (Pan and Wei 2011). This number of urban poor seems larger than our estimates, but readers must note that the researchers included towns as part of urban areas, whereas we define only cities as urban. If we revise the base by including people in towns, the estimated size of the urban population living below the minimum living standard increases to 60 million.

Our findings shed light on the debate about the degree of poverty in China. The official statistics and surveys have reported extremely low poverty rates, much lower than those reported in other countries with similar levels of economic development and lower than people's perceptions. We have found that China's current poverty prevalence is higher than the official estimates (for example, the National Bureau of Statistics of China, the CHIP, and the Chinese Academy of Social Science). A possible reason that we obtain a very low estimate of poverty rates using the CHIP is the incomplete nature of the CHIP data that have been made available. Using a nationally representative version of the CHIP data,<sup>15</sup> Li, Luo and Sicular (2013) found higher poverty rates with poverty lines similar to our own. Their estimate of the rural poverty rate in 2007 is 5.59 percent using the 1,123-yuan line and is 13.88% with the \$1.25-a-day line. Their estimate of the urban poverty rate is 0.42 with the \$1.25a-day line. Their estimates, however, are still much lower than those of the CFPS, CGSS, and CHFS.

The underestimation of poverty prevalence by official surveys is not merely a matter of where the poverty line is drawn but also relates to the data on which estimates are based. The possible bias could come from poor households being underrepresented in the sample or from exaggerated reports of income and expenditure by poor households. Since the data collection process in official surveys lacks transparency, the source of bias remains unclear.

We also notice the extremely high estimate of poverty prevalence based on income data in the urban part of the CHFS data. It estimates that 13 percent of the urban population below the \$1.00-per-day line, and 19 percent below the urban minimum living standard. We believe this apparent overestimation to be related to the income distribution of the data, which shows an extremely high level of inequality. Nevertheless, the expenditure-based estimates from the CHFS are consistent with those from the CFPS and CGSS.

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<sup>15</sup> The nationally representative version of the CHIP, which is not available to us, includes 13,000 rural households and 10,000 urban households in 16 provinces and 5,000 migrant households in 9 provinces.

The findings of this study highlight the importance of cross-source validation for evaluating poverty prevalence in China. Multiple data sources with multiple definitions of poverty produce a more comprehensive understanding of poverty prevalence in today's China. The inconsistency of results between independent academic surveys (CGSS, CFPS, and CHFS) and official data (National Bureau of Statistics of China and CHIP) is worth noticing. It suggests that the existence of independent surveys may help the National Bureau of Statistics of China improve its data quality and provide more accurate measures of poverty prevalence.

## 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.
- Bian, Y., and L. Li. 2012. "The Chinese General Social Survey (2003–8): Sample Design and Evaluation." *Chinese Sociological Review* 45:70–97.
- CFPS (China Family Panel Studies). 2010. Beijing: Peking University.
- CGSS (Chinese General Social Survey). 2010. Beijing: Renmin University ; Hong Kong University of Sciences & Technology.
- CHFS (Chinese Household Finance Survey). 2011. Chengdu, China: Southwestern University of Finance and Economics.
- Chinese Academy of Science. 2012. China Sustainable Development Report 2012. Beijing: Science Press.
- CHIP (Chinese Household Income Project). 2007. Beijing: China Academy of Social Science.
- The Economist*. 2012. "To Each, Not According to His Needs: A New Survey Illuminates the Extent of Chinese Income Inequality." December 15. [www.economist.com/news/finance-and-economics/21568423-new-survey-illuminates-extent-chinese-income-inequality-each-not](http://www.economist.com/news/finance-and-economics/21568423-new-survey-illuminates-extent-chinese-income-inequality-each-not).
- Fang, C., X. Zhang, and S. Fan. 2002. "Emergence of Urban Poverty and Inequality in China: Evidence from Household Survey." *China Economic Review* 13:430–443.
- Foster, J., J. Greer, and E. Thorbecke. 1984. "Notes and Comments: A Class of Decomposable Poverty Measures." *Econometrica* 52:761–766.
- Glauben, T., T. Herzfeld, S. Rozelle, and X. Wang. 2012. "Persistent Poverty in Rural China: Where, Why and How to Escape?" *World Development* 40 (4): 784–795.
- Kanbur, R., and X. Zhang. 2005. "Fifty Years of Regional Inequality in China: A Journey through Central Planning, Reform and Openness." *Review of Development Economics* 9 (1): 87–106.
- Kao, E. 2012. "China Wealth Gap Continues to Widen, Survey Finds." *South China Morning Post*, December 25. [www.scmp.com/news/china/article/1102047/china-wealth-gap-continues-widen-survey-finds](http://www.scmp.com/news/china/article/1102047/china-wealth-gap-continues-widen-survey-finds).
- Khan, A. R., and C. Riskin. 2001. *Inequality and Poverty in China in the Age of Globalization*. Oxford, UK: Oxford University Press.
- Li, S., C. Luo and T. Sicular. 2013. "Overview: China's Income Inequality and Poverty (2002-2007)" In *The Dynamics of Income Gap in China (Zhongguo Shouru Chaju Biandong Fenxi)* [in Chinese] edited by S. Li, H. Sato, and T. Sicular, 41–80. Beijing: Renmin Press.
- Luo, C., S. Li, T. Sicular, Q. Deng, and X. Yue. 2013. "Appendix I: The 2007 Household Surveys: Sampling Methods and Data Description." In *The Dynamics of Income Gap in China (Zhongguo Shouru Chaju Biandong Fenxi)* [in Chinese] edited by S. Li, H. Sato, and T. Sicular, 491–512. Beijing: Renmin Press.
- Luo, C. and T. Sicular. 2013. "Income Inequality and Poverty in Rural China" In *The Dynamics of Income Gap in China (Zhongguo Shouru Chaju Biandong Fenxi)* [in Chinese] edited by S. Li, H. Sato, and T. Sicular, 242–274. Beijing: Renmin Press.
- Meng, X., R. Gregory, and Y. Wang. 2005. "Poverty, Inequality, and Growth in Urban China, 1986–2000." *Journal of Comparative Economics* 33:710–729.
- National Bureau of Statistics of China. 2010a. *China Statistical Yearbook 2009*. Beijing: China Statistics Press.
- \_\_\_\_\_. 2010b. *China Statistical Abstract 2010*. Beijing: China Statistics Press.
- \_\_\_\_\_. 2011. *China Statistical Yearbook 2010*. Beijing: China Statistics Press.
- Pan, J., and W. Wei. 2011. *Annual Report on Urban Development of China No. 4*. Beijing: Social Sciences Academic Press.
- Park, A., and S. Wang. 2001. "China's Poverty Statistics." *China Economic Review* 12 (4): 384–398.

- Population Census Office under the State Council and Department of Population and Employment Statistics in National Bureau of Statistics. 2012. *Tabulation on the 2010 Population Census of People's Republic of China*. Beijing: China Statistics Press.
- Ravallion, M., and S. Chen. 2007. "China's (Uneven) Progress against Poverty." *Journal of Development Economics* 82:1–42.
- Want China Times*. 2013. "China's Gini Index Shows Need for Reforms on 'Non-wage' Income." January 28. [www.wantchinatimes.com/news-subclass-cnt.aspx?id=20130128000015&cid=1102](http://www.wantchinatimes.com/news-subclass-cnt.aspx?id=20130128000015&cid=1102).
- Wu, H. X. 2007. "The Chinese GDP Growth Rate Puzzle: How Fast Has the Chinese Economy Grown?" *Asian Economic Papers* 6 (1): 1–23.
- Wu, X., and D. J. Treiman. 2004. "The Household Registration System and Social Stratification in China: 1955–1996." *Demography* 41 (2): 363–384.
- Xie, Y. 2012. *China Family Panel Studies (2010) User's Manual* [in Chinese]. Beijing: Institute for Social Science Survey, Peking University.
- Xie, Y., and E. Hannum. 1996. "Regional Variation in Earnings Inequality in Reform-era Urban China." *American Journal of Sociology* 101:950–992.
- Xing, L., S. Fan, X. Luo, and X. Zhang. 2009. "Community Poverty and Inequality in Western China: A Tale of Three Villages in Guizhou Province." *China Economic Review* 20 (2): 338–349.









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