Chapter 10
The Pattern of Urban–Rural Disparities in Multidimensional Poverty in the People's Republic of China: 2000–2011

Jing Yang and Pundarik Mukhopadhaya

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1 Introduction

According to the World Bank's estimate of poverty using the international poverty line of $1.25 a day (in 2005 PPP), the People's Republic of China (PRC) has shown a remarkable achievement in reducing income/consumption poverty over the past two decades or so. In 2014, the Asian Development Bank (ADB) released a report which attempted to adjust this poverty line using the poverty lines of selected Asian countries. The ADB report proposed an absolute cut-off of $1.51 for Asia. Furthermore, the report suggested that the poverty line be adjusted for vulnerability of income and insecurity with respect to food. With all these adjustments, the report's poverty estimate for PRC is almost three times more than the World Banks' estimate. However, ADB (2014) did not make any comparison of the difference between the rural and urban scenarios of poverty. This chapter aims to utilize the poverty lines used in the ADB 2014 report in estimating the rural–urban disparities

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J. Yang
Economics and Management Department, Jiangxi Agricultural University, Nanchang, People's Republic of China

P. Mukhopadhaya (✉)
Economics Department, Macquarie University, Sydney, Australia
e-mail: pundarik.mukhopadhaya@mq.edu.au

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in poverty. We also compare the results with the $1.25 poverty line to specify the differences.

As proposed in the *Outline for Development-oriented Poverty Reduction for China's Rural Areas (2011–2020)* [hereafter *Outline (2011–2020)*], the current objective of the government of the PRC is not only promoting the income growth of the poor but also providing adequate compulsory education, basic medical care and housing services to the poor population. To appreciate this goal, our chapter has further added value by incorporating other dimensions of poverty beyond income to evaluate and contrast rural and urban poverty.

The idea of multidimensional poverty is derived from the capability approach propounded by Sen (1985). Since Sen's proposition, researchers have tried to develop a framework to measure multidimensional poverty, and three categories of measurement strategies have been put forward into practice—item-by-item analysis strategy, the non-aggregative strategy and the aggregative strategy (Brandolini 2009). The last one is currently more appreciated by researchers because it builds up a composite index of multidimensional poverty so that the breadth, intensity and severity of multidimensional poverty can be compared. For example, Chakravarty et al. (1998), Tsui (2002) and Bourguignon and Chakravarty (2003) employed the axiomatic approach in multidimensional poverty measurement to set up composite indices, which are similar to the Foster–Greer–Thorbecke (FGT) index applied in unidimensional poverty. Moreover, the Multidimensional Poverty Index (MPI), which is based on the counting approach called the Dual Cut-offs Approach (hereafter AF approach) developed by Alkire and Foster (2008), is now adopted by the United Nations Development Programme (UNDP) to measure and compare multidimensional poverty across countries.

Many Chinese researchers have also estimated multidimensional poverty. For example, Shang and Yao (2005) and Chen (2008) developed composite indices of multidimensional poverty using the axiomatic approach. However, the most popular approach in the PRC is the AF approach. Wang and Alkire (2009) first introduced this method in the PRC to calculate the urban and rural multidimensional poverty of 2006 using the China Health and Nutrition Survey (CHNS). Following them, other researchers attempted to improve the measurement by this approach. For instance, Zou and Fang (2011) extended this method into a dynamic analysis and examined the trend of multidimensional poverty from 1997 to 2006. Gao (2012) compared the differences between urban and rural multidimensional poverty. Jiang et al. (2011) changed the weighting structure from equal weights to weights determined by principal component analysis method. Besides the measurement of multidimensional poverty at the national level, it was also explored in different regions by household investigations (Sun et al. 2012; Guo 2012; Chen 2012; Chen and Zhang 2013).

Despite several studies that have measured multidimensional poverty in the PRC, there is still a gap in the analysis of urban–rural disparities from the multidimensional perspective. Moreover, due to the feature of a dual economy in the PRC, studies on the PRC's income inequality report that the urban–rural income gap has increased over time and become the most significant factor contributing to the overall inequality (Sicular et al. 2007; Li and Luo 2010).[1] In light of this finding, whether there is a significant diversity in multidimensional poverty between urban and rural PRC and, if so, which indicators contribute most to the diversity is worthy of consideration. The purpose of this chapter is to fill this gap by comparing the diversity between urban and rural multidimensional poverties and exploring the contribution of the indicators to the urban–rural disparity. The rest of the chapter is organized as follows. The second section introduces the methodologies and related literature. The third section presents the dataset used in this chapter and explains the dimensions, indicators, cut-offs and weights that are used to identify a multidimensional poor household. The fourth section provides the trends and contributions of urban and rural multidimensional poverty and discusses urban–rural disparity. The fifth section explores the deprivation and contribution of each dimension and indicator in explaining urban–rural disparities, while the sixth section presents and discusses the implications of the variations in the weighting scheme. Section 7 deliberates some policy issues while the last section concludes.

2 Methodologies

The AF method is the most popular in studies of multidimensional poverty in the PRC. Labar and Bresson (2011) and Yu (2013) adopted this method to measure multidimensional poverty. Similarly, Ray and Mishra (2012) adopted a hybrid approach that is based on the spirit of HDI and the AF approach to construct a multidimensional poverty index. Besides the AF approach, Lu (2010) used the participatory poverty assessment to construct a multidimensional poverty index. Cohen and Sullivan (2010) argued that the eight dimensions in their multidimensional, water-focused thematic indicator should not be aggregated into a composite index. However, in the studies of multidimensional poverty in other countries, the fuzzy set approach is also popular. Deutsch and Silber (2005) and D'ambrosio et al. (2011) compared the fuzzy set approach, information theory approach, efficiency analysis approach and axiomatic approach and found that the assessment by different approaches is not of high difference. For the purpose of our analysis, we have adopted the AF approach. See Yang and Mukhopadhaya (2016a, b) for detailed discussion of the method.

[1] See also Mukhopadhaya et al. (2011) and Li et al. (2014).

3 Data and Definition

3.1 Description of Dataset

The dataset used in this chapter is from the CHNS, which is an international collaborative project between the Carolina Population Centre at the University of North Carolina at the Chapel Hill and the National Institute of Nutrition and Food Safety at the Chinese Centre for Disease Control and Prevention. The CHNS dataset is a longitudinal survey for the years 1989, 1991, 1993, 1997, 2000, 2004, 2006, 2009 and 2011. The focus of this chapter is to determine the trend of multidimensional poverty since 2000; thus the data in the last five waves were used. There are nine provinces included for all the five waves: Liaoning, Jiangsu, Shandong, Heilongjiang, Henan, Hubei, Hunan, Guangxi and Guizhou. Three more provinces—Beijing, Shanghai and Chongqing—were covered in the 2011 wave, but in order to make a comparison between waves, these three provinces are dropped in the 2011 wave in our calculation (Table 10.1).

There are at least two reasons for us to adopt the CHNS dataset. First and foremost, one purpose of this chapter is to reveal the trend of urban and rural multidimensional poverty, which requires a dataset that not only contains enough information on different dimensions of poverty but also covers different years. Second, the CHNS dataset has been quite popular in previous research on multidimensional poverty in the PRC because it collects adequate information on socioeconomic factors (income, employment, education and modernization) as well as others related to health, nutritional and demographic measures.

The CHNS includes community-level, household-level and individual-level surveys (adult and child). Since community-level data are not publicly available,[2] we have only used the latter two. Table 10.1 shows the size of the valid household sample after treating with the missing values. It should be noted that although the CHNS is considered as longitudinal data, nearly 12–17% household samples are dropped in each wave of survey (Table 10.2); the dropped households are replaced by new households. The total sizes of samples are quite stable, and over 80% household samples are kept from the previous wave. This advantage makes the CHNS appropriate for comparisons over time. However, there are two disadvantages of the CHNS. One is the small size of samples (Qi and Wu 2014), and the other is that there are no sampling weights to make the data representative of the whole of PRC.[3] These two weaknesses may lead to unreliable estimates.[4]

[2] The CHNS dataset is available at the CHNS official website: http://www.cpc.unc.edu/projects/china

[3] The document on the explanation of the sampling weights is listed at the official website: http://www.cpc.unc.edu/projects/china

[4] The limited panel aspect of the survey was not used for the analysis because the sample size is quite small in each survey and around 20% of the sample was replaced by new observations in every wave.

Table 10.1 Size of the valid sample households of the CHNS—various waves

Regions		East			Central				West		
Provinces		Liaoning	Jiangsu	Shandong	Heilongjiang	Henan	Hubei	Hunan	Guangxi	Guizhou	Total
2000	U	125	148	133	149	134	143	125	141	145	1243
	R	324	317	275	298	293	298	237	307	311	2660
	T	449	465	408	447	427	441	362	448	456	3903
2004	U	133	159	136	160	160	159	154	148	158	1367
	R	337	326	311	315	328	314	302	323	342	2898
	T	470	485	447	475	488	473	456	471	500	4265
2006	U	137	157	156	159	144	152	172	146	162	1385
	R	342	317	320	316	328	305	317	336	352	2933
	T	479	474	476	475	472	457	489	482	514	4318
2009	U	140	159	155	163	159	153	173	160	157	1419
	R	345	331	317	323	330	312	310	361	346	2975
	T	485	490	472	486	489	465	483	521	503	4394
2011	U	140	159	154	163	156	159	172	140	153	1396
	R	337	324	321	313	327	318	314	343	335	2932
	T	477	483	475	476	483	477	486	483	488	4328

Source: Authors' computation
Note: *U* urban, *R* rural, *T* total

Table 10.2 The change of samples in various waves of CHNS

Year	Dropped sample	Added sample	Kept sample	Total sample
2000	–	–	–	3903
2004	639	1001	3264	4265
2006	529	582	3736	4318
2009	771	847	3547	4394
2011	554	488	3840	4328

Source: Authors' computation

At this juncture, we must mention that the CHNS is an increasingly important database for poverty and inequality research.[5] Labar and Bresson (2011) used the multidimensional stochastic dominance procedures on the joint distribution of income, education and health based on the CHNS (1991–2006). They found that multidimensional poverty had decreased during the period. However, the decrease is statistically significant only in 1994–2004. Ray and Mishra (2012) used the CHNS (1993, 2000 and 2006) to compare the multidimensional poverty in India and the PRC and found that rural poverty was much worse in India, but the urban poverty level in the two countries was similar.

3.2 Definition of Multidimensional Poverty

To define the multidimensional poor household, one should first select the dimensions and indicators as well the poverty line in each indicator. Based on the five methods to choose the dimensions of multidimensional poverty (Alkire 2007), we selected four dimensions for our analysis. For choosing the indicators, we have paid attention to the key tasks of the *Outline (2011–2020)* and the indicators used in the MPI of the United Nations (Table 10.3).

First, income has been used to measure poverty for a long time, though it is not included in the famous MPI. However, net income per capita is used as the indicator of income dimension in this study because there is no more appropriate proxy than income to present the poor's ability to not worry about food and clothing. Furthermore, the *Outline (2011–2020)* proposes that the growth of net income per capita of the residents in the poor rural regions will be higher than the national average. We use ADB's "$1.51 per day" poverty line in this chapter because the national poverty line has changed considerably during the period. Moreover, we also incorporate the effects of food insecurity and vulnerability in the poverty line. In the view of food insecurity, the per capita household income is adjusted according to the food consumer price index (CPI) rather than the general CPI in different waves and provinces because, in line with ADB (2014), we consider that food prices have a higher

[5] Liu (2008) introduced the methodology of the CHNS and the information that is collected.

Table 10.3 The dimensions, respective indicators, their weights and cut-offs used

Dimension	Indicator	Weight	Deprived if
Income	Net income per capita	1/4	The net income per capita is less than the "$1.51 per day"[a] poverty line
			Moreover, the vulnerability and food insecurity are incorporated in the poverty line
Education	School attendance	1/8	Any child aged from 6 to 15 is not attending school
	Highest level of education	1/8	No adult member has completed primary school
Health care	Health insurance	1/4	No member has the health insurance
Standard of living	Electricity	1/20	The household has no electricity
	Drinking water	1/20	The household does not have access to in-house or in-yard water or clean drinking water that is from water plants or wells with over 5 m depth
	Toilet	1/20	There is no flush toilet
	Cooking fuel	1/20	The household does not use clean cooking fuel
	Consumer durables	1/20	Household does not have even one electrical appliance

[a]Note: The National Poverty Line (NPL) is not used for our calculation because the NPL changed over the time period considered here. Considering that $1.25 of the World Bank may not be appropriate for Asian economies (as discussed in ADB 2014), this chapter adopts the $1.51 poverty line with adjustments discussed in the text

Table 10.4 The vulnerability-adjusted poverty lines—various years

Year	z_0	Vulnerability	z_2 (Dollar)	z_2 (Yuan)
2000	$1.51	1.13	$1.70	2684.948
2004	$1.51	1.40	$2.12	3341.457
2006	$1.51	2.01	$3.03	4782.567
2009	$1.51	2.57	$3.88	6116.662
2011	$1.51	2.83	$4.27	6739.24

Source: Authors' computation
Note: The poverty line z_0 is the $1.51 poverty line, while z_2 is the vulnerability-adjusted poverty line

effect on the livelihoods of poor people.[6] To adjust vulnerability, we use the vulnerability-adjusted poverty line in the case of multiplicative risk similar to the ADB (2014) report.[7] The vulnerability-adjusted poverty line of each wave is listed in Table 10.4.

[6]Table 10.18 in the Appendix compares the general CPI and the food CPI for different provinces. We found that for all regions and all waves, inflation rate of food CPI is higher than the general CPI.

[7]In the estimation of the vulnerability-adjusted poverty line, the coefficient of constant relative risk aversion is 3, which is suggested by ADB (2014). We have used a multiplicative model of vulnerability. Note that our vulnerability factor is somewhat in the higher range than the ADB estimates.

Second, there are two indicators in the education dimension: school attendance and highest level of education. The reason to select these two indicators emanates from the proposal for consolidation and improvement of a 9-year compulsory education in the *Outline (2011–2020).* Furthermore, no young adult illiteracy by 2015 was in the lists of the key tasks. In the existing studies, school attendance is widely used as an indicator to specify the educational functioning of the household, and the household with no school-aged dropout children is considered not deprived. Although completing primary school as the highest level of education is not the best indicator to reflect the quality of education, we have to adopt it as proxy due to the lack of information on adult illiteracy in the CHNS dataset. In view of previous studies in which a person whose "highest level of education is less than primary school" is considered to be illiterate or semi-illiterate and is always deemed deprived, we adopt this cut-off for the highest level of education.

Third, unlike MPI that includes mortality and nutrition in the health dimension, in the health-care dimension, there is only one indicator in this chapter: health insurance. Health status indicators are excluded in this chapter due to data restrictions. Moreover, this indicator is chosen because it is listed in the key tasks of the *Outline (2011–2020)*, which proposes that in the New Cooperative Medical Care System, the participation rate of villagers will be above 90% by the end of this decade. Accordingly, a household is deprived if any member of the household does not have health insurance.

Fourth, there are five indicators in the living standard dimension: electricity, drinking water, toilet, cooking fuel and consumer durables.[8] A household is deprived if it has no electricity according to MPI and *Outline (2011–2020)*. Like MPI, the cut-off of drinking water is whether the household has access to clean drinking water that is tap water or water that comes from a depth of more than 5 m underground. The cut-offs of toilet and cooking fuel are no flush toilet and no clean cooking fuel, respectively. The consumer durable indicator is also included in MPI and in most previous studies. Considering that the CHNS dataset lists 18 electrical appliances, we define the household that has none of the listed electrical appliances as deprived by this indicator.[9]

[8] We have used income and standard of living as two different dimensions. One may be critical of this because there is high likelihood that these two are correlated. In the normative approach of Participation Optimum and Critical Optimum of Need Satisfaction (Doyal and Gough 1991), the concepts of income and standard of living are considered in the same dimension. However, income and standard of living are considered as two different dimensions in Nussbaum's (2000) central human capabilities and the participatory approach of Mukherjee (1999). Wagle (2008) has also supported this approach. Ranis et al. (2006) and McGillivray and White (1993) argued that highly correlated indicators could be dropped, while Saisana et al. (2005), Foster et al. (2013) and OECD (2008) argued that including the indicator with high association could generate a robust measure.

[9] Actually, the list of electrical appliances changed a little over different waves. In 2000, there is no cell phone or satellite dish. In 2004, there is no satellite dish. In 2009 and 2011, radio, tape recorder and black/white television do not feature in the list.

3.3 The Choice of Weights

As the counting deprivation score is the weighted mean of the deprivation status values, it is also needed to weight each dimension and indicator. Decancq and Lugo (2013) suggest three approaches to set the weights: data-driven weights, normative weights and hybrid weights. Since the equal weights method is most popular in the multidimensional measurement of well-being indices, in this chapter we use equal weights as used in the normative weight approach to give equal weight to each dimension and equal weight to each indicator in the same dimension.[10]

3.4 The Determination of the Poverty Cut-Off (k)

The last issue in defining the multidimensional poor household is the poverty cut-off (k). In accordance with the weighting structure, the poverty cut-off varies from 1/20 to 1. k = 1/20 means the household which is deprived in either indicator is multidimensional poor[11]; $k = 1$ means the household which is deprived in all indicators is multidimensional poor.[12] Alternatively, when k is say 0.25 (or generally between 1/20 and 1), the household which is deprived in 25% of all indicators is deemed to be multidimensional poor.[13] More specifically, for example, the household is considered poor if he/she is deprived in least: (1) any one dimension or (2) one indicator in education plus three indicators in living standard, etc.

In the fourth section, we will provide the multidimensional poverty measurement for $k = 0.25$, $k = 0.5$, $k = 0.75$ and $k = 1$ in order to investigate whether there is a difference between urban and rural regions with varying poverty cut-offs. However, we will take $k = 0.25$ as the poverty cut-off when the multidimensional poverty is decomposed in Sects. 4.3, 5 and 6.

[10] In this weighting scheme, some dimension (like standard of living) includes five indicators, while others (e.g. health) have only one indicator. This means that the health insurance indicator has a much larger weight than electricity or drinking water. This discrepancy may lead to a result that shows a high contribution of the health indicator. To avoid any such problem, we will also present the results with equal weight for all indicators as a comparison.

[11] *The union method.*

[12] *The intersection method.*

[13] *The median method.*

4 Comparison of Urban and Rural Multidimensional Poverty

Table 10.5 presents the urban, rural and national multidimensional poverty measurements (including H, A and M_0) in each wave,[14] while Table 10.6 presents the trends of these multidimensional poverty measurements.

The trend in national poverty for the period 2000–2011 has been summarized in Fig. 10.1. It may be observed that the multidimensional poverty (irrespective of the income poverty line) used is decreasing over the period. However, the income poverty trend does not follow the same pattern if the adjusted ADB poverty line is used. The increase in poverty at the national level with vulnerability and food insecurity adjusted to the $1.51 poverty line is not surprising. According to ADB (2014), the measure of headcount in East Asia (that comprises mostly the PRC) with combined poverty line moves from 40.7% in 2005 to 45.8% in 2008 to 45.6% in 2010, while that with the $1.25 poverty line is 16.3%, 13.1% and 11.6%, respectively (see Table 5.2 in ADB 2014). However, our estimate of poverty in the PRC with the adjusted $1.51 poverty line is not as high as the ADB estimate. This observation clearly indicates that income poverty is still no less important in the PRC and special provision of income growth in targeted sectors must be considered. We will come back to the differences of this trend in income poverty in further detail later.[15]

One must also note that the multidimensional poverty index H decreased a lot over time, but in 2009, it has become quite similar to the income poverty rate derived by ADB (2014) for 2008. Given the growing relative importance over time of the income poverty indicator, the coincidence is not fortuitous.[16]

[14] Note that $M_0 = H \times A$ where H is the headcount ratio and A is the average poverty gap (calculated by adding up the proportion of total deprivation score that each poor household suffers from and dividing it by the number of poor households).

[15] In the Appendix, we have presented the results of the $1.25 income poverty line and the differences in results with the ADB poverty line. It is to be noted that the difference, in many cases, is statistically significant.

[16] The following table shows the relation between income poverty and multidimensional poverty ($k = 0.25$) in 2009. It can be seen that only 12.43% multidimensional poor households were not in income poverty, but no income poor household were not in multidimensional poverty. The Cramer's V value is 0.7673, which also indicates the high correlation between income poverty and multidimensional poverty.

The correlation between income poverty and multidimensional poverty in 2009:

		Multidimensional poverty	
		Nonpoor (%)	Poor (%)
Income poverty	Nonpoor	55.55	12.43
	Poor	0	32.02

Source: Authors' computation

Table 10.5 The multidimensional poverty index—various years with various values of k

Year	k	H			A			M_0		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
2000	0.25	0.8005	0.9256	0.8857	0.3238	0.4109	0.3859	0.2592	0.3804	0.3418
	0.5	0.1054	0.2541	0.2068	0.5739	0.6230	0.6151	0.0605	0.1583	0.1272
	0.75	0.0016	0.0218	0.0154	0.7750	0.7940	0.7933	0.0012	0.0173	0.0122
	1	0	0	0				0	0	0
2004	0.25	0.7425	0.8796	0.8356	0.3428	0.4136	0.3934	0.2546	0.3638	0.3288
	0.5	0.1595	0.2823	0.2429	0.5673	0.6078	0.5993	0.0905	0.1716	0.1456
	0.75	0.0059	0.0162	0.0129	0.7750	0.7862	0.7845	0.0045	0.0128	0.0101
	1	0	0	0				0	0	0
2006	0.25	0.6751	0.7368	0.7170	0.3518	0.4212	0.4002	0.2375	0.3103	0.2870
	0.5	0.1827	0.2618	0.2365	0.5584	0.6039	0.5926	0.1020	0.1581	0.1401
	0.75	0.0014	0.0188	0.0132	0.7750	0.7864	0.7860	0.0011	0.0147	0.0104
	1	0	0	0				0	0	0
2009	0.25	0.3939	0.4686	0.4445	0.3349	0.3503	0.3459	0.1319	0.1642	0.1538
	0.5	0.0839	0.0588	0.0669	0.5483	0.5590	0.5547	0.0460	0.0329	0.0371
	0.75	0	0.0003	0.0002		0.7750	0.7750	0	0.0003	0.0002
	1	0	0	0				0	0	0
2011	0.25	0.3274	0.4386	0.4027	0.3211	0.3462	0.3396	0.1051	0.1519	0.1368
	0.5	0.0523	0.0423	0.0455	0.5342	0.5571	0.5486	0.0279	0.0236	0.0250
	0.75	0	0.0003	0.0002		0.7750	0.7750	0	0.0003	0.0002
	1	0	0	0				0	0	0

Source: Authors' computation

Table 10.6 The change in multidimensional poverty (%) in various subperiods

		H			A			M_0		
Period	k	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
2000–2004	0.25	−7.24	−4.97	−5.66	5.86	0.65	1.96	−1.80	−4.35	−3.80
	0.5	51.32	11.07	17.48	−1.14	−2.44	−2.56	49.59	8.36	14.47
	0.75	263.72	−25.62	−16.11	0.00	−0.98	−1.11	263.71	−26.35	−17.04
2004–2006	0.25	−9.08	−16.23	−14.20	2.61	1.84	1.73	−6.71	−14.69	−12.72
	0.5	14.55	−7.23	−2.66	−1.57	−0.65	−1.12	12.75	−7.84	−3.74
	0.75	−75.33	15.62	2.36	0.00	0.02	0.18	−75.33	15.65	2.55
2006–2009	0.25	−41.65	−36.40	−38.01	−4.79	−16.83	−13.57	−44.44	−47.10	−46.42
	0.5	−54.09	−77.54	−71.70	−1.81	−7.43	−6.40	−54.92	−79.20	−73.51
	0.75	–	−98.21	−98.28	–	−1.45	−1.40	–	−98.23	−98.30
2009–2011	0.25	−16.90	−6.39	−9.39	−4.14	−1.18	−1.83	−20.34	−7.50	−11.05
	0.5	−37.64	−28.10	−31.97	−2.57	−0.35	−1.09	−39.25	−28.35	−32.72
2000–2011	0.25	−59.10	−52.61	−54.53	−0.86	−15.75	−11.99	−59.46	−60.08	−59.98
	0.5	−50.38	−83.36	−77.99	−6.90	−10.59	−10.80	−53.81	−85.12	−80.36

Source: Authors' computation

Note: Urban poverty does not exist for $k = 0.75$ or more

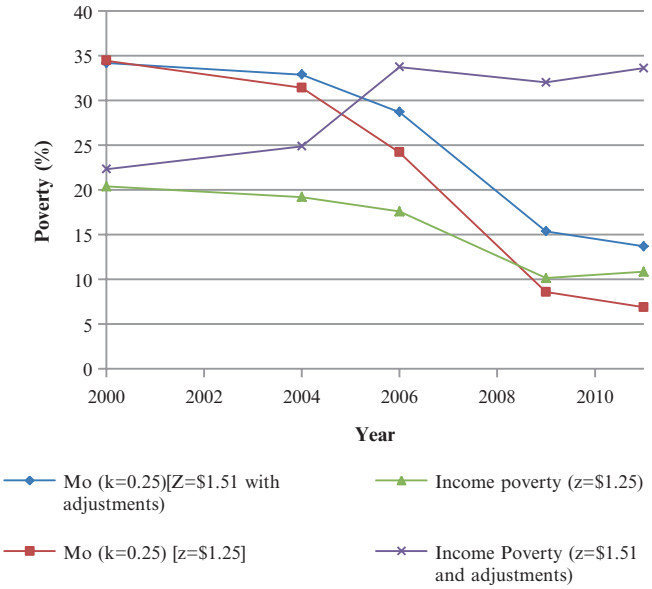

Fig. 10.1 Trends in national poverty (various methods)
Source: Authors' computation

4.1 Trends in Urban and Rural Multidimensional Poverty

It is observed from Tables 10.5 and 10.6 that multidimensional poverty has been mostly decreasing during the whole period, no matter which poverty cut-off (k) is chosen, with two exceptions.

(a) In the subperiod 2000–2004 when $k = 0.5$, the M_0 for all groups increased due to the increase of the incidence (H), and the urban M_0 increased when $k = 0.75$.
(b) In the subperiod 2004–2006, for $k = 0.5$, the urban M_0 increased, and the rural and national M_0 increased when $k = 0.75$.

Generally speaking, multidimensional poverty reduced significantly in the last decade, and the decrease is larger with higher poverty cut-off (k). Moreover, it is worth noting that the largest decrease in multidimensional poverty occurred in the subperiod 2006–2009 for all values of k. The reason may lie in the sharp decrease of the deprivation in health insurance in that subperiod.

The decrease in rural multidimensional poverty is larger than that for urban group for the whole period except in the subperiod 2009–2011 when the multidimensional poverty of the urban group decreased more than the rural group. Figure 10.2 presents the observation for $k = 0.25$ only. Furthermore, the urban group experienced a bigger drop in poverty than the rural group when $k = 0.75$ in the

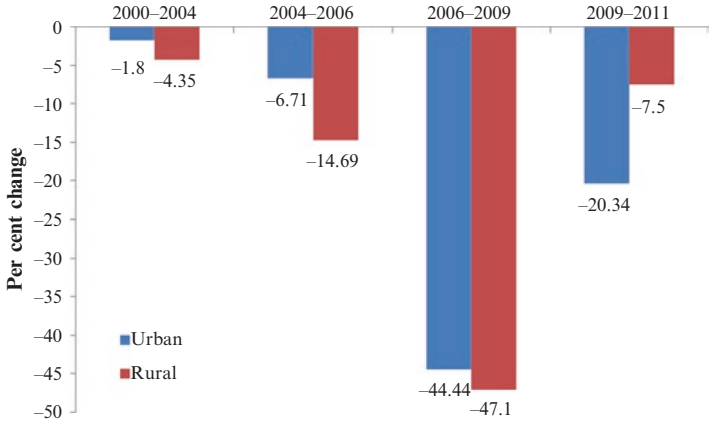

Fig. 10.2 Change in multidimensional poverty ($k = 0.25$)
Source: Authors' computation

subperiods 2004–2006 and 2006–2009. There has been no poor urban household since 2009, but there were poor rural households in 2009–2011 when $k = 0.75$.

4.2 The Diversity Between Urban and Rural Poverty

In order to make comparisons, we demonstrate the urban–rural disparities in multidimensional poverty by the rural-to-urban ratio of the aforementioned poverty indices (Table 10.7). If the ratio is more (or less) than 1, rural multidimensional poverty is worse (or better) than urban poverty, while the value of the ratio 1 implies no disparity in terms of multidimensional poverty. It can be seen in Table 10.7 that multidimensional poverty is worse in rural areas than in the urban areas.

Moreover, we can make four observations by comparing the rural-to-urban ratio between different poverty indices and different waves.

First, comparing the rural-to-urban ratio of H and A with varying k, it can be observed that the urban–rural disparity in H became larger before 2009, but the disparity in A became smaller with higher values of k, indicating that more households in the rural areas compared with urban areas are deemed poor when the poverty cut-off increases, but the intensity of deprivation of poor households in urban and rural households became similar. However, the disparity in H has become smaller with higher k in 2009 and 2011. As a result, the rural–urban gap in M_0, which widened before 2009, narrowed down after 2009 when k increased. As k increases, the deprivation of the poor households becomes more severe. We term the status of the deprivation with higher k (i.e. $k = 0.75$) as *severe poverty* and that with lower k (i.e. $k = 0.25$) as *mild poverty*, while *moderate poverty* means the value of k is in the middle (i.e. $k = 0.5$). In light of this, the disparity of moderate poverty was higher than mild poverty before 2009 but lower after 2009.

Table 10.7 The rural-to-urban ratio of the multidimensional poverty index—various years with different values of *k*

Year	*k*	$1.25 poverty line			$1.51 vulnerability-adjusted poverty line		
		H	*A*	M_0	*H*	*A*	M_0
2000	0.25	1.16	1.26	1.46	1.16	1.27	1.47
	0.5	2.28	1.09	2.49	2.41	1.09	2.62
	0.75	14.02	1.02	14.37	13.55	1.02	13.88
2004	0.25	1.18	1.20	1.41	1.18	1.21	1.43
	0.5	1.80	1.06	1.91	1.77	1.07	1.90
	0.75	2.90	1.01	2.94	2.77	1.01	2.81
2006	0.25	1.01	1.20	1.22	1.09	1.20	1.31
	0.5	1.56	1.06	1.65	1.43	1.08	1.55
	0.75	8.97	1.02	9.16	12.99	1.01	13.18
2009	0.25	0.78	1.09	0.85	1.19	1.05	1.24
	0.5	0.69	1.00	0.69	0.70	1.02	0.72
2011	0.25	0.90	1.11	1.01	1.34	1.08	1.44
	0.5	0.89	1.02	0.91	0.81	1.04	0.84

Source: Authors' computation

Second, all ratios were more than 1 except the case when the ratio of *H* became lower than 1 after 2009 for $k = 0.5$. This indicates that only the incidence of moderate poverty became lower in rural areas; otherwise rural poverty is always higher than urban poverty.

Third, the urban–rural disparity in terms of mild and moderate poverty shows a decreasing trend before 2009 but increases since then, while disparity in terms of severe poverty remains quite high in this period (with an exceptional drop in 2004).[17] There is no doubt that the trend in the urban–rural disparity is in accordance with the trend of multidimensional poverty (listed in Table 10.6), which indicates that rural poverty has decreased faster than urban poverty before 2009 and slower since then.

Fourth, comparing the rural-to-urban ratio of the multidimensional poverty index for two different cut-offs, we observe that in terms of mild poverty, rural people are always more vulnerable than urban people, and the vulnerability has increased more recently.

*4.3 The Disparity in the Contributions to Overall Multidimensional Poverty (***k** **= 0.25)**

We decompose the adjusted headcount ratio (M_0) by urban and rural subgroups to check the contribution of the subgroups to national multidimensional poverty (Table 10.8). We must emphasize that the contribution of the subgroup is positively

[17] Because there have been no poor households in urban areas since 2009, Table 10.6 does not report the rural-to-urban ratio when $k = 0.75$ since then.

Table 10.8 The decomposition by rural and urban areas—various years

		2000	2004	2006	2009	2011
Rural	Contributions (%)	75.84	75.19	73.45	72.29	75.21
	Sample proportion (%)	68.15	67.95	67.92	67.71	67.74
Urban	Contributions (%)	24.16	24.81	26.55	27.71	24.79
	Sample proportion (%)	31.85	32.05	32.08	32.29	32.26

Source: Authors' computation

related with its sample proportion, so it should be compared with the sample proportion to investigate the actual contribution to national poverty. The subgroup of which the contribution is higher (lower) than the sample proportion actually contributes more (less) to the total multidimensional poverty.

In all waves, the contributions of the rural subgroup are higher than their population proportion, indicating that the rural subgroup contributes more to overall multidimensional poverty. However, the gap between the contribution and the sample proportion of the rural subgroup had become narrower before 2009 but widened in 2011. This fact also confirms the descending trend of urban–rural disparity in multidimensional poverty in 2000–2009 and the ascending trend in 2011 as we compare the rural-to-urban ratio.

5 Explanation for the Disparity in Terms of Poverty Indicators

In the preceding section, we have compared urban and rural multidimensional poverty and confirm that indeed there is urban–rural disparity in multidimensional poverty. Now we will try to examine the causes of this disparity. The observation may lead to specific policy prescriptions. In this section, we will check the deprivation in each indicator and its contribution to overall multidimensional poverty.

5.1 Deprivation in Each Indicator

As shown in Table 10.9, the deprivations in most indicators are worse in rural areas except for health insurance and electricity. More rural households suffered from a lack of health insurance before 2006, but the rural headcount ratio in this dimension dropped rapidly in 2006 and became less than that for the urban population because of the establishment of the New Cooperative Medical Care System in 2003. Despite the fact that the new urban medical care system was extended to the unemployed, students and children in 2007, the deprivation in health insurance is still higher in urban areas since 2006.

Table 10.9 Raw headcount ratio of each indicator [with $1.51 as the poverty line adjusted for food insecurity and vulnerability]—various years ($k = 0.25$)

		2000		2004		2006		2009		2011	
Dimension	Indicator	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Income	Net income per capita	11.50	24.44	16.68	28.74	21.44	39.55	20.93	37.31	23.28	38.54
Education	Child school attendance	1.37	2.56	0.07	0.62	0.14	0.51	0.14	0.34	0.07	0.61
	Highest level of education	7.72	8.98	10.68	11.94	10.61	17.05	9.65	15.29	8.74	16.47
Health care	Health insurance	78.92	91.69	73.45	85.99	64.04	58.64	26.71	14.22	14.40	8.80
Standard of living	Electricity	0.32	1.09	0.29	0.31	0.22	0.38	0.28	0.37	1.29	0.89
	Drinking water	3.46	21.32	5.93	17.94	4.91	15.65	2.75	13.41	1.93	11.29
	Toilet	28.24	80.19	21.80	73.43	17.33	70.75	12.26	62.02	10.03	58.49
	Cooking fuel	19.31	51.54	14.34	41.82	10.40	29.12	5.07	15.29	4.23	11.39
	Consumer durables	0.48	4.55	0.15	2.97	0.14	2.45	0.35	1.08	0.21	0.89

Source: Authors' computation

Table 10.10 The raw headcount ratio of income (%)

Years		2000	2004	2006	2009	2011
$1.25 poverty line adjusted for general CPI	Urban	12.55	13.02	11.05	7.68	8.95
	Rural	25.53	22.12	20.66	11.33	11.77
	National	21.39	19.20	17.58	10.15	10.86
$1.51 poverty line adjusted for general CPI	Urban	15.85	15.58	13.79	9.37	9.53
	Rural	31.20	27.02	26.42	14.35	14.02
	National	26.31	23.35	22.37	12.74	12.57
$1.51 poverty line adjusted for food CPI	Urban	10.70	11.49	10.18	8.39	9.53
	Rural	21.20	20.32	18.51	12.61	14.02
	National	17.86	17.49	15.84	11.24	12.57
Vulnerability-adjusted $1.51 poverty line using general CPI	Urban	18.34	21.36	29.24	24.10	23.28
	Rural	34.81	37.89	49.27	41.24	38.54
	National	29.57	32.59	42.84	35.71	33.62
Vulnerability-adjusted $1.51 poverty line using food CPI	Urban	11.50	16.68	21.44	20.93	23.28
	Rural	24.44	28.74	39.55	37.31	38.54
	National	20.32	24.88	33.74	32.02	33.62

Source: Authors' computation

Furthermore, the highest three deprived indicators for both urban and rural groups were the same in 2000—health insurance, toilet and cooking fuel. Since 2004, income took the place of cooking fuel for the urban group. For the rural group, income replaced cooking fuel in 2006. But health insurance has not been in the highest three deprived indicators since 2009, while cooking fuel came back to the list in 2009, and the highest level of education crept into the list in 2011. It is worth noting that deprivation in income increased from 2000 to 2006, decreasing slightly in 2009 but increasing again in 2011 for both groups. The reason is the consideration of income vulnerability. Table 10.10 shows deprivation in income using different poverty lines and the inflation index. It can be found that the trend of deprivation in income is decreasing if the considered poverty line is general CPI adjusted $1.51 (i.e. not adjusted for vulnerability). Moreover, the trends of deprivation do not change much if food CPI is used as the deflator. The incidence of poverty (irrespective of rural or urban) is higher (except for 2000) when adjustment of vulnerability is made on the poverty line.[18] Thus we can safely conclude that the increasing deprivation in income is because of the higher vulnerability (for both groups).

From Table 10.10, it can be further observed that the gap in income deprivation between rural and urban areas widened because of the higher-income poverty line. Moreover, the differences are larger for the rural group than the urban group, indicating that rural group is more vulnerable.

[18] Note that this result is quite different from the ADB (2014) estimate.

From Table 10.21 in the Appendix, it can be seen that the gap of the censored headcount ratio in terms of income[19] is similar to the raw headcount ratio. For other dimensions, the gaps in education and living standards are quite narrow, indicating that the deprivations in these two dimensions do not change much when the income poverty line varies.

5.2 Contribution of Each Indicator[20]

The contribution of indicators needs to be compared with their weights to explore their real contribution (see Alkire and Foster 2008). For the urban group, health insurance had been the only indicator whose contribution was higher than its weight before 2009 when the contribution of income exceeded its weight (Table 10.11). In other words, the most contributable indicator for urban multidimensional poverty was health insurance. The situation for the rural group is more complex. Moreover, the contribution of toilet was higher than their weights in all waves; the contributions of cooking fuel in 2000 and 2004, health insurance from 2000 to 2006 as well as income from 2006 to 2011 were higher than the weights.

Combining the contribution and deprivation of each indicator for both urban and rural groups, the reason for the disparity trend can be discovered. Before 2009, the health insurance was not only the highest deprived but also most contributable indicator for the urban group. Although it has been decreasing since 2000, the descent rate was less than that for the rural group. Conversely, due to the New Cooperative Medical Care System, health insurance was not the highest deprived indicator for the rural group in 2006. Considering its high contribution, rural multidimensional poverty decreased faster than urban poverty. However, in the subperiod 2009–2011, the contribution of health insurance was not the highest for the rural group any longer and deprivation decreased less than that of urban group because the new urban medical care system was introduced in 2007. Moreover, income had become the most contributable dimension for rural groups since 2009, and the deprivation of income was much higher than for the urban group. Consequently, disparity increased in this period.

In the Appendix, Table 10.22 represents the contribution of each indicator using a $1.25 poverty line. It can be observed that when a low poverty line is used, the importance of health insurance as an important contributing factor to poverty both in rural and urban areas increases tremendously.

[19] This is the headcount ratio after the application of the second cut-off, while raw headcount ratio is computed before the application of the second cut-off.

[20] See Table 10.21 in the Appendix for censored headcounts that are ingredients for the calculation in this section.

Table 10.11 The contribution of each indicator (%): Urban and rural—various years

		2000		2004		2006		2009		2011	
Dimension	Indicator	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Income	Net income per capita	11.09	16.16	16.38	19.75	22.58	31.86	39.66	56.82	55.38	63.45
Education	Child school attendance	0.62	0.85	0.04	0.21	0.08	0.19	0.07	0.10	0.09	0.36
	Highest level of education	3.22	2.86	4.17	3.59	4.10	5.77	4.94	6.99	6.30	8.25
Health care	Health insurance	76.11	60.63	72.13	59.09	67.42	47.24	50.61	21.65	34.25	14.49
Standard of living	Electricity	0.05	0.14	0.01	0.04	0.05	0.05	0.03	0.07	0.20	0.13
	Drinking water	0.62	2.73	0.92	2.41	0.71	2.12	0.29	2.17	0.37	1.86
	Toilet	4.87	10.04	3.75	9.06	3.09	8.50	3.02	9.21	2.22	9.13
	Cooking fuel	3.34	6.60	2.59	5.44	1.95	3.91	1.28	2.67	1.09	2.09
	Consumer durables	0.08	0.60	0.01	0.40	0.03	0.36	0.11	0.31	0.10	0.22

Source: Authors' computation

6 The Results Using Equal Weights for Indicators

In the preceding sections, we have observed a high contribution of income and health in urban and rural poverty in the PRC. While the contribution of income in urban areas decreased from 76.1% in 2000 to 34.3% in 2011, that in rural areas rose from 16.2% to 63.4%; the contribution of health insurance in urban areas increased in the same period from 11.1% to 34.3%, while that in rural areas decreased from 60.7% to 14.5%. In this section, we will present multidimensional poverty and the contribution of various indicators with equal weights for each indicator. This exercise is carried out to check whether high weights to income and health insurance influence our previous results.

6.1 The Multidimensional Poverty Measurements

In order to compare the result with equal weight (we will call this weight II) for each indicator with our previous results (let us call it results with weight I), the choice of poverty cut-off (k) must be the same. However, considering that the weights are equal in this case, the poverty cut-off (k) will be between 1/9 and 1. The case of $k = 0.25$ for weight I is similar to the case of $k = 3/9$ for weight II, which means the household is considered poor if he/she is deprived in at least three indicators.

Table 10.12 presents the overall multidimensional poverty with weight II, and it is observed that the result is similar to that observed for weight I, except that there were no urban poor households when $k = 0.75$ in all waves [compare with Table 10.5].

Moreover, the trend was also similar (Table 10.13) to that observed previously with weight I [see Table 10.6]. Mostly, multidimensional poverty has been decreasing during the period, no matter which poverty cut-off (k) is chosen, with two exceptions.

(a) In the subperiod 2000–2004 when $k = 0.5$, the urban M_0 increased.
(b) In the subperiod 2004–2006, for $k = 0.5$, the rural and national A increased, while when $k = 0.75$, both A and M_0 increased at the rural and national levels.

6.2 The Diversity Between Urban and Rural Poverty

The result of diversity is quite different (see Table 10.14) from the result that we previously observed using weight I. First, the rural-to-urban ratios of H and M_0 were higher, but the ratio of A was lower. Second, the disparity of moderate poverty ($k = 0.5$) was higher than mild poverty ($k = 0.25$) in all waves except 2009. Third, all ratios were more than 1 except the case when the ratio of A became lower than 1 in 2004 and in 2009 for $k = 0.5$. Fourth, the urban–rural disparity in terms of mild poverty showed a decreasing trend before 2006 and increased since then, while

Table 10.12 The multidimensional poverty index [weight II]—various years

Year	k	H			A			M_0		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
2000	0.25	0.1762	0.5887	0.4573	0.3770	0.4207	0.4154	0.0664	0.2477	0.1900
	0.5	0.0080	0.1128	0.0794	0.5778	0.5978	0.5971	0.0046	0.0674	0.0474
	0.75	–	0.0083	0.0056	–	0.7929	0.7929	–	0.0066	0.0045
	1	–	–	–	–	–	–	–	–	–
2004	0.25	0.1712	0.5135	0.4038	0.3875	0.4173	0.4133	0.0663	0.2143	0.1669
	0.5	0.0168	0.0935	0.0689	0.5942	0.5884	0.5888	0.0100	0.0550	0.0406
	0.75	–	0.0031	0.0021	–	0.7778	0.7778	–	0.0024	0.0016
	1	–	–	–	–	–	–	–	–	0
2006	0.25	0.1444	0.4068	0.3226	0.3761	0.4192	0.4130	0.0543	0.1705	0.1332
	0.5	0.0108	0.0777	0.0563	0.5704	0.5950	0.5935	0.0062	0.0463	0.0334
	0.75	–	0.0041	0.0028	–	0.7778	0.7778	–	0.0032	0.0022
	1	–	–	–	–	–	–	–	–	–
2009	0.25	0.0648	0.2024	0.1579	0.3659	0.3728	0.3719	0.0237	0.0754	0.0587
	0.5	0.0035	0.0108	0.0084	0.5778	0.5660	0.5676	0.0020	0.0061	0.0048
	0.75	–	–	–	–	–	–	–	–	–
	1	–	–	–	–	–	–	–	–	–
2011	0.25	0.0394	0.1736	0.1303	0.3596	0.3683	0.3674	0.0142	0.0639	0.0479
	0.5	0.0021	0.0095	0.0072	0.5556	0.5952	0.5914	0.0012	0.0057	0.0042
	0.75	–	0.0007	0.0005	–	0.7778	0.7778	–	0.0005	0.0004
	1	–	–	–	–	–	–	–	–	–

Source: Authors' computation

Note: Urban poverty does not exist for $k = 0.75$ or more and there is no rural poverty for $k = 1$; "–" = not estimated

Table 10.13 The trend of the multidimensional poverty index [weight II]

Period	k	H			A			M_0		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
2000–2004	0.25	−2.84	−12.78	−11.72	2.78	−0.81	−0.50	−0.14	−13.49	−12.16
	0.5	109.14	−17.09	−13.21	2.84	−1.58	−1.39	115.08	−18.39	−14.42
	0.75	–	−62.45	−62.56	–	−1.91	−1.91	–	−63.17	−63.28
2004–2006	0.25	−15.64	−20.78	−20.10	−2.93	0.45	−0.06	−18.11	−20.43	−20.15
	0.5	−35.63	−16.87	−18.36	−4.01	1.13	0.80	−38.21	−15.93	−17.71
	0.75	–	31.74	31.70	–	0.00	0.00	–	31.74	31.69
2006–2009	0.25	−55.10	−50.25	−51.04	−2.70	−11.06	−9.95	−56.32	−55.75	−55.91
	0.5	−67.47	−86.16	−85.04	1.30	−4.88	−4.37	−67.04	−86.84	−85.69
2009–2011	0.25	−39.23	−14.21	−17.49	−1.73	−1.23	−1.21	−40.29	−15.26	−18.49
	0.5	−39.01	−11.22	−14.94	−3.85	5.17	4.20	−41.36	−6.63	−11.37
2000–2011	0.25	−77.64	−70.51	−71.51	−4.61	−12.47	−11.55	−78.67	−74.19	−74.80
	0.5	−73.29	−91.53	−90.98	−3.85	−0.42	−0.96	−74.32	−91.57	−91.07

Source: Authors' computation
Note: Urban poverty does not exist for $k = 0.75$ or more

Table 10.14 The rural-to-urban ratio of the multidimensional poverty index [weight II]

Year	k	H	A	M_0
2000	0.25	3.34	1.12	3.73
	0.5	14.02	1.03	14.50
2004	0.25	3.00	1.08	3.23
	0.5	5.56	0.99	5.50
2006	0.25	2.82	1.11	3.14
	0.5	7.18	1.04	7.49
2009	0.25	3.12	1.02	3.18
	0.5	3.05	0.98	2.99
2011	0.25	4.41	1.02	4.51
	0.5	4.44	1.07	4.76

Source: Authors' computation

Table 10.15 The decomposition by rural and urban areas [weight II]

		2000	2004	2006	2009	2011
Rural	Contributions (%)	88.86	87.26	86.92	86.96	90.45
	Sample proportion (%)	68.15	67.95	67.92	67.71	67.74
Urban	Contributions (%)	11.14	12.74	13.08	13.04	9.55
	Sample proportion (%)	31.85	32.05	32.08	32.29	32.26

Source: Authors' computation

disparity in terms of moderate poverty fluctuated in this period, which decreased in 2004 and 2009 but increased in 2006 and 2011.

6.3 The Disparity in the Contributions to Overall Multidimensional Poverty

The disparity in the contributions of regions is also similar with the result using weight I [Table 10.15]. There are two differences. First, with weight II, the contribution of rural regions becomes larger. Second, the gap between the contribution and the sample proportion of the rural subgroup became narrower before 2006 but has widened since then.

6.4 Contribution of Each Indicator

Table 10.16 presents the contribution of each indicator with weight II. Since the weights are equal for each indicator, the contribution can be compared directly. For the urban group, health insurance was the most contributable indicator before 2009,

Table 10.16 The contribution of each indicator (%) [weight II]

Dimension	Indicator	2000		2004		2006		2009		2011	
		Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Income	Net income per capita	13.06	10.30	16.79	13.31	23.19	18.84	26.73	23.66	28.09	25.43
Education	Child school attendance	1.21	1.11	0.12	0.32	0.15	0.31	0.33	0.25	0.00	0.65
	Highest level of education	7.40	3.66	10.91	5.24	12.41	9.13	15.18	13.91	17.42	16.78
Health care	Health insurance	28.67	26.02	27.94	25.71	27.18	20.22	21.45	7.13	16.85	4.98
Standard of living	Electricity	0.13	0.46	0.00	0.14	0.15	0.22	0.33	0.35	2.25	0.77
	Drinking water	2.96	8.97	5.02	8.66	4.87	8.64	2.31	10.99	3.37	9.54
	Toilet	24.23	25.65	20.96	25.28	16.99	25.08	20.13	28.22	17.98	28.10
	Cooking fuel	21.80	21.80	18.01	19.79	14.77	16.02	12.21	13.96	12.36	12.27
	Consumer durables	0.54	2.02	0.25	1.54	0.30	1.53	1.32	1.53	1.69	1.48

Source: Authors' computation

becoming second in 2009 and fourth in 2011. Besides health insurance, toilet and cooking fuel were in the highest contributable list in 2000 and 2004. In 2006 and 2009, income replaced cooking fuel, and in 2011, the highest level of education replaced health insurance.

For the rural group, the three highest contributable indicators were health insurance, toilet and cooking fuel in 2000 and 2004. In 2006, income replaced cooking fuel. But in 2009, the three major contributable indicators were toilet, income and cooking fuel, while in 2011, the highest level of education replaced cooking fuel.

The findings related to the extent of the contribution of indicators using weight II are different from those using weight I, especially for the urban group. For the rural group, the result is quite similar. These results indicate that the choice of weight is an important factor in determining the contributions of indicators of multidimensional poverty.

Rather than computing static contributions for a given year of each indicator, we have also "Shapley decomposed" the change in the multidimensional index M_0 into the sum of the change in the contributions of various indicators and that of the change in the poverty line. The results are presented in the Appendix (see Tables 10.23 and 10.24). We will discuss the results and their implication in terms of policies in the next section.

7 Discussion on Policies

Irrespective of the weight of indicators and the method of decomposition, we observe that since 2009, per capita income, health insurance and the highest level of education are the major contributors to urban poverty (Table 10.17). On the other hand, for the rural regions, the choice of weight plays an important role in determining the highest contributors of poverty. Toilet and cooking fuel have prominently contributed to rural poverty, besides income and the highest level of education. Thus, our results suggest that policymakers need to pay more attention to health insurance in urban regions and cooking fuel in rural areas along with overall (both rural and urban) increase in income and the highest level of education. We have also noticed that rural people are more vulnerable to income fluctuations, and thus measures are needed for stabilizing these fluctuations. For this, it is necessary to identify the target groups and the actual causes of the fluctuation. Micro-level surveys in the most vulnerable areas are therefore necessary.

Although this is still an issue that is debated, most official reports and academic research propose that rapid and steady economic growth, especially in rural areas, is the primary factor that can reduce income poverty in the PRC. Policies such as abolishing the agricultural tax, giving subsidies directly to grain growers, giving subsidies for purchasing fine seeds and giving general subsidies for purchasing agricultural supplies are supposed to promote agricultural production and raise rural income. Besides, rural–urban migration and urbanization also improve rural income. All these policies that benefit the rural group help narrow the urban–rural gap of

Table 10.17 The top 3 highest deprived indicators for weights I and II—various years: rural and urban [figures in parentheses are the contributions]

		Ordinary AF decomposition		Shapley decomposition	
Year	Area	Weight I	Weight II	Weight I	Weight II
2000	Urban	Health insurance (76.11%)	Health insurance (28.67%)	Health insurance (84.9%)	Health insurance (28.7%)
		Income (11.09%)	Toilet (24.23%)	Income (12.4%)	Toilet (24.2%)
		Toilet (4.87%)	Cooking fuel (21.80%)	Highest level of education (1.9%)	Cooking fuel (21.8%)
	Rural	Health insurance (60.63%)	Health insurance (26.02%)	Health insurance (76%)	Health insurance (26.00%)
		Income (16.16%)	Toilet (25.65%)	Income (20.1%)	Toilet (25.60%)
		Toilet (10.04%)	Cooking fuel (21.80%)	Highest level of education (2%)	Cooking fuel (21.80%)
2004	Urban	Health insurance (72.13%)	Health insurance (27.94%)	Health insurance (79.1%)	Health insurance (27.90%)
		Income (16.38%)	Toilet (25.65%)	Income (17.9%)	Toilet (25.60%)
		Toilet (3.75%)	Cooking fuel (18.01%)	Highest level of education (2.5%)	Cooking fuel (18.00%)
	Rural	Health insurance (59.09%)	Health insurance (25.71%)	Health insurance (72.2%)	Health insurance (25.70%)
		Income (19.75%)	Toilet (25.28%)	Income (24%)	Toilet (25.30%)
		Toilet (9.06%)	Cooking fuel (19.79%)	Highest level of education (2.4%)	Cooking fuel (19.80%)
2006	Urban	Health insurance (67.42%)	Health insurance (27.18%)	Health insurance (72.7%)	Health insurance (27.20%)
		Income (31.86%)	Income (23.19%)	Income (24.5%)	Income (23.20%)
		Highest level of education (4.10%)	Toilet (16.99%)	Highest level of education (2.5%)	Toilet (17.00%)
	Rural	Health insurance (47.24%)	Toilet (25.08%)	Health insurance (56.6%)	Toilet (25.10%)
		Income (31.86%)	Health insurance (20.22%)	Income (38.5%)	Health insurance (20.20%)
		Toilet (8.50%)	Income (18.84%)	Highest level of education (3.8%)	Income (18.80%)
2009	Urban	Health insurance (50.61%)	Income (26.73%)	Health insurance (53.8%)	Income (26.70%)
		Income (39.66%)	Health insurance (21.45%)	Income (43%)	Health insurance (21.50%)
		Highest level of education (4.94%)	Toilet (20.13%)	Highest level of education (2.9%)	Toilet (20.10%)
	Rural	Income (56.82%)	Toilet (28.22%)	Income (69.8%)	Toilet (28.20%)
		Health insurance (21.65%)	Income (23.66%)	Health insurance (25.4%)	Income (23.70%)
		Toilet (9.21%)	Cooking fuel (14.96%)	Highest level of education (3.9%)	Cooking fuel (14.10%)
			Education (13.91%)		Education (13.90%)

(continued)

Table 10.17 (continued)

		Ordinary AF decomposition		Shapley decomposition	
Year	Area	Weight I	Weight II	Weight I	Weight II
2011	Urban	Income (55.38%)	Income (28.09%)	Income (60.2%)	Income (28.00%)
		Health insurance (34.25%)	Toilet (17.98%)	Health insurance (36.1%)	Toilet (18.00%)
		Highest level of education (6.30)	Highest level of education (17.42%)	Highest level of education (3.4%)	Highest level of education (17.40%)
			Health insurance (16.85%)		Health insurance (16.90%)
	Rural	Income (63.45%)	Toilet (28.10%)	Income (77.4%)	Toilet (28.10%)
		Health insurance (14.49%)	Income (25.43%)	Health insurance (16.8%)	Income (25.40%)
		Toilet (9.13%)	Highest level of education (16.68%)	Highest level of education (4.8%)	Highest level of education (16.80%)
		Education (8.25%)			

Source: Authors' computation

income. However, when vulnerability is taken into account, deprivation in income shows an increasing trend. In light of this, assessing vulnerable households and providing assistance to them become a challenge for policymakers.

As discussed earlier, the New Cooperative Medical Care System helps the rural residents to solve the difficulties in seeing a doctor and high medical expenses so that health insurance is no longer the most deprived for the rural group. But critics point out to challenges such as the low reimbursement rate and disparities in the utilization between the rich households and the poor ones. On the contrary, there are more problems in the urban health insurance system. First, although, in 2007, the Basic Medical Insurance System for urban residents was introduced to cover all types of urban residents, rural–urban migrants were not included in this medical insurance. Second, the Basic Medical Insurance System is not universal in urban areas. Most employees of the government and public institutions were not part of the Medical Insurance System but still enjoyed free medical care until 2010. Although these groups have become part of the Medical Insurance System since 2012, there are still differences in the medical insurance between the employees of the government and public institutions and other urban residents. As a result, the coverage of health insurance is lower in urban areas. Therefore, establishing a universal health insurance in order to improve coverage is another challenging project.

The lower living standards of rural groups, especially the lack of improved toilets, contribute more to rural multidimensional poverty. Since urban infrastructures are much better than the rural, the government has tried to improve rural infrastructures. In 2009, the Ministry of Health published the "Management of Improvement of Toilet in rural areas" to accelerate the improvement of toilets. Moreover, the government gives subsidies to households to improve their toilets. In fact, infrastructure construction in rural areas such as energy, information and communication

technologies, transport as well as water and sanitation is of drastic importance to growth and poverty alleviation and to narrow the urban–rural gap.

Our findings indicate that the contribution of education in both rural and urban poverty in the PRC is quite substantial. Although the 9-year compulsory education policy was established in 1986 when the first law on compulsory education was promulgated, it is still weak, particularly in rural areas. In order to continuously support the development of compulsory education in rural areas, the government implemented the "two exemptions and one subsidy" policy in 2001. This attempt is meant to exempt rural students from poor families from paying tuition and miscellaneous fees in compulsory education and to provide living subsidies for boarders. Later in 2005, the State Council announced exemption of all the tuition and miscellaneous fees for all rural students. Meanwhile, the funds for primary and secondary schools that provided compulsory education in rural areas would be arranged by the central government, which was later confirmed in the New Law on Compulsory Education in 2006. In 2007, the policy of exempting all tuition and miscellaneous fees was implemented nationwide in rural PRC. No doubt, rural people lag behind the urban in terms of education; in urban areas development of a trained workforce is also necessary. Thus, besides compulsory education, vocational education can also enhance both rural and urban human capital in two ways—training the labour force and educating new entrants to a different kind of labour market (e.g. the migrants in the cities)—thus providing cultural quality, higher-quality skills and strong business capabilities. In the rural areas, the latter was issued in 2005 in order to develop farmers' practical technologies. The "No. 1 documents" in 2006 and 2007 announced an increase in the amount of public financial funds and the size of rural vocational education. In 2009, secondary vocational education became free for the students whose major was related to agriculture. By 2012, this policy has been implemented nationwide. Despite the efforts made, there are disparities in the quantity and quality of education between the urban and rural regions. One possible reason for the gap in education between the urban and rural regions is the decentralized fiscal system; thus instead of a county-based funding and management, which are unable to provide adequate educational funds, a much wider centralised system for disbursing educational funds to both rural and urban regions could be an option to reduce educational poverty.

8 Conclusion

Using the CHNS dataset, this chapter investigates urban–rural disparities in multidimensional poverty in the PRC. The $1.51 poverty line (adjusted for vulnerability and food insecurity) proposed in the ADB (2014) report is used as the income poverty cut-off (unlike previous studies where the World Bank's $1.25 was used as the cut-off). The following important observations are made:

1. Total as well as rural and urban multidimensional poverty has decreased during the period 2000–2011.
2. Comparison of urban and rural multidimensional poverty shows that there is a disparity between urban and rural areas (income inequality research made a similar observation). The disparity exists because of the diversity of deprivation in the individual dimension and indicator. Rural households are deprived more in income, education and living standards (toilet).
3. Urban–rural gaps show different results as the poverty cut-off (in terms of number of indicators) rises. Since 2009, the disparities of mild ($k = 0.25$) and moderate ($k = 0.50$) multidimensional poverty have become smaller because of narrower gaps of incidence. This implies that the special antipoverty policies in rural PRC have made some positive impacts in eliminating the poverty, which may not be in terms of income (with high poverty line) but at least in terms of the multidimensional perspective.
4. Urban–rural disparity in multidimensional poverty decreased in the period 2000–2009 but increased in 2011. Our examination reveals that the trend of disparity is influenced mostly by health insurance. The health issue has made the poor vulnerable to risk, and consequently in a wider perspective, they become vulnerable with respect to their earning capabilities. If not addressed properly, this will create more damage to the poor in the longer term.

Appendix: The Comparison of Food CPI and General CPI

Since the CHNS takes 2011 as the base year to inflate income, the food CPI is calculated on the assumption that the base year is 2011. So, the food CPI is the same as general CPI in 2011. Table 10.18 shows the general CPI given by the CHNS and the calculated food CPI. It can be found that the food CPI is less than the general CPI for all regions and all waves, indicating that the inflation rate of food CPI is higher. However, the difference between food CPI and general CPI is not as high as observed by ADB (2014).

The multidimensional poverty measurement—difference in results when different income cut-offs are used.

Table 10.19 corresponds to Table 10.21 with $1.25 used as the poverty line.

Table 10.20 shows the differences in the multidimensional poverty measurements between the results using the vulnerability-adjusted poverty line based on $1.51 and the conventional $1.25 poverty line. Moreover, the former result is based

Table 10.18 Food CPI and general CPI (2011 as base year)

Province		2000		2004		2006		2009		2011	
		Food CPI	CPI	Food CPI	CPI	Food CPI	CPI	Food CPI	CPI	Food CPI	CPI
Liaoning	U	50.56	80.94	59.23	83.20	61.44	84.78	81.92	92.56	100.00	100.00
	R	43.81	60.99	51.32	66.49	53.24	70.26	70.98	79.60	87.38	87.38
Heilongjiang	U	57.95	80.45	65.81	84.01	67.52	86.21	86.09	95.17	104.12	104.12
	R	50.38	70.02	57.95	74.46	60.76	78.01	80.79	89.23	99.60	99.60
Jiangsu	U	59.39	84.71	66.65	87.30	70.90	90.48	90.00	98.66	107.47	107.47
	R	45.99	62.87	51.85	67.69	55.59	70.49	70.54	77.66	85.79	85.79
Shandong	U	56.25	83.91	64.16	86.68	67.08	88.51	86.37	96.18	103.27	103.27
	R	44.43	64.21	51.98	69.74	54.83	72.12	72.06	80.68	88.43	88.43
Henan	U	44.31	67.93	53.14	73.18	56.31	75.61	76.15	83.88	91.42	91.42
	R	39.74	57.16	46.86	61.88	48.62	64.13	65.87	73.28	80.66	80.66
Hubei	U	58.18	80.35	67.65	85.80	70.42	89.35	90.75	97.97	106.22	106.22
	R	46.41	66.11	54.88	71.28	58.51	75.03	77.42	84.70	92.87	92.87
Hunan	U	56.78	81.51	64.72	84.75	68.52	87.92	89.67	97.46	105.96	105.96
	R	52.64	70.59	63.46	76.66	64.48	79.75	86.39	91.12	99.32	99.32
Guangxi	U	53.46	77.49	60.00	81.55	63.34	85.34	84.73	95.00	103.28	103.28
	R	42.73	63.72	49.37	66.96	51.06	68.65	69.17	77.62	85.38	85.38
Guizhou	U	52.03	77.43	58.88	81.90	61.90	83.70	83.16	93.52	101.55	101.55
	R	45.49	65.67	52.90	70.81	54.98	73.74	74.91	85.36	91.76	91.76

on the food CPI-inflated income, while the latter is based on the general CPI. Three findings from Table 10.20 are worth noting. First, the differences in 2000 were different from other waves. Poverty was lower using the ADB poverty line in 2000 but higher in other waves. The reason may lie in the quite close result in income deprivation in 2000. Correspondingly, the differences were not significant in 2000. Second, the differences in M_0 were highest when $k = 0.5$ from 2000 to 2006, but from 2009 to 2011, they were higher when $k = 0.25$. The reason may be that the gap of the raw headcount ratio of income had been widened. After 2009, more households that were not poor using the conventional poverty line became poor using the adjusted regional poverty line in ADB (2014) just because they were deprived in income. As a result, the headcount ratio increased more when $k = 0.25$. Third, the differences of rural groups were higher than urban groups in all waves. The reason may be the more widened gap between the income deprivations using different income poverty lines for rural groups.

Table 10.19 The multidimensional poverty index (with $1.25 as the income cut-off)

Year	k	H			A			M_0		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
2000	0.25	0.8005	0.9259	0.8860	0.3271	0.4138	0.3888	0.2618	0.3831	0.3445
	0.5	0.1158	0.2639	0.2168	0.5696	0.6229	0.6139	0.0660	0.1644	0.1331
	0.75	0.0016	0.0226	0.0159	0.7750	0.7942	0.7935	0.0012	0.0179	0.0126
	1	0	0	0	0	0	0	0	0	0
2004	0.25	0.7425	0.8747	0.8324	0.3305	0.3963	0.3775	0.2454	0.3466	0.3142
	0.5	0.1236	0.2222	0.1906	0.5737	0.6091	0.6017	0.0709	0.1354	0.1147
	0.75	0.0051	0.0148	0.0117	0.7750	0.7860	0.7845	0.0040	0.0117	0.0092
	1	0	0	0	0	0	0	0	0	0
2006	0.25	0.6578	0.6662	0.6635	0.3206	0.3854	0.3648	0.2108	0.2567	0.2420
	0.5	0.0960	0.1493	0.1322	0.5688	0.6045	0.5961	0.0546	0.0903	0.0788
	0.75	0.0014	0.0130	0.0093	0.7750	0.7914	0.7906	0.0011	0.0103	0.0073
	1	0	0	0	0	0	0	0	0	0
2009	0.25	0.3150	0.2467	0.2688	0.3031	0.3296	0.3196	0.0955	0.0813	0.0859
	0.5	0.0303	0.0208	0.0239	0.5669	0.5653	0.5660	0.0172	0.0118	0.0135
	0.75	0.0000	0.0003	0.0002	0.000	0.7750	0.7750	0.0000	0.0003	0.0002
	1	0	0	0				0	0	0
2011	0.25	0.2156	0.1951	0.2017	0.3049	0.3389	0.3272	0.0657	0.0661	0.0660
	0.5	0.0208	0.0184	0.0192	0.5466	0.5583	0.5542	0.0114	0.0103	0.0106
	0.75	0	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	0	0	0

Table 10.20 The differences in multidimensional poverty index

Year	k	H			A			M_0		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
2000	0.25	0	−0.0003	−0.0003	−0.0033	−0.0029	−0.0029	−0.0026	−0.0027	−0.0027
	0.5	−0.0104	−0.0098	−0.01	0.0043	0.0001	0.0012	−0.0055	−0.0061	−0.0059
	0.75	0	−0.0008	−0.0005	0	−0.0002	−0.0002	0	−0.0006	−0.0004
	1	0	0	0	0	0	0	0	0	0
2004	0.25	0	0.0049	0.0032	0.0123**	0.0173***	0.0159***	0.0092	0.0172***	0.0146***
	0.5	0.0359***	0.0601***	0.0523***	−0.0064	−0.0013	−0.0024	0.0196**	0.0362***	0.0309***
	0.75	0.0008	0.0014	0.0012	0	0.0002	0	0.0005	0.0011	0.0009
	1	0	0	0	0	0	0	0	0	0
2006	0.25	0.0173	0.0706***	0.0535***	0.0312***	0.0358***	0.0354***	0.0267***	0.0536***	0.045***
	0.5	0.0867	0.1125***	0.1043***	−0.0104***	−0.0006	−0.0035	0.0474***	0.0678***	0.0613***
	0.75	0	0.0058*	0.0039*	0	−0.005	−0.0046	0	0.0044*	0.0031*
	1	0	0	0	0	0	0	0	0	0
2009	0.25	0.0789***	0.2219***	0.1757***	0.0318***	0.0207***	0.0263***	0.0364***	0.0829***	0.0679***
	0.5	0.0536***	0.038***	0.043***	−0.0186	−0.0063	−0.0113	0.0288***	0.0211***	0.0236***
	0.75	0	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	0	0	0
2011	0.25	0.1118***	0.2435***	0.201***	0.0162**	0.0073	0.0124***	0.0394***	0.0858***	0.0708***
	0.5	0.0315***	0.0239***	0.0263***	−0.0124	−0.0012	−0.0056	0.0165***	0.0133***	0.0144***
	0.75	0	0.0003	0.0002	0	0.775	0.775	0	0.0003	0.0002
	1	0	0	0	0	0	0	0	0	0

Note: ***, **, * mean the difference is significant at the 1%, 5% and 10%, respectively

Table 10.21 Censored headcount ratio of each indicator

Dimension	Indicator	2000			2004			2006			2009			2011		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
(a) $1.25 poverty line																
Income	Net income per capita	12.55	25.53	21.40	13.02	22.12	19.20	11.04	20.66	17.58	7.68	11.33	10.15	8.95	11.77	10.86
Education	Child school attendance	1.29	2.56	2.15	0.07	0.62	0.45	0.14	0.41	0.33	0.07	0.07	0.07	0.07	0.20	0.16
	Highest level of education	6.68	8.65	8.02	8.49	10.22	9.66	7.58	12.99	11.25	3.74	4.44	4.21	3.29	4.43	4.07
Health care	Health insurance	78.92	91.69	87.63	73.45	85.98	81.97	64.05	58.64	60.37	26.71	14.22	18.25	14.40	8.80	10.61
Standard of living	Electricity	0.24	1.06	0.80	0.07	0.31	0.23	0.22	0.34	0.30	0.07	0.20	0.16	0.14	0.31	0.25
	Drinking water	3.22	20.68	15.12	4.69	17.56	13.43	3.39	12.38	9.49	0.56	4.10	2.96	0.64	2.39	1.83
	Toilet	25.26	75.97	59.82	19.09	65.45	50.60	14.29	46.85	36.41	6.06	14.08	11.49	3.37	11.36	8.78
	Cooking fuel	17.30	49.92	39.53	13.16	39.41	31.00	8.88	21.78	17.65	2.68	4.37	3.83	1.93	3.21	2.80
	Consumer durables	0.40	4.51	3.20	0.07	2.90	1.99	0.14	2.11	1.48	0.14	0.91	0.66	0.22	0.55	0.44
(b) $1.51 vulnerability-adjusted poverty line																
Income	Net income per capita	11.50	24.44	20.32	16.68	28.75	24.88	21.44	39.55	33.74	20.93	37.31	32.02	23.28	38.54	33.62
Education	Child school attendance	1.29	2.55	2.15	0.07	0.62	0.44	0.14	0.48	0.37	0.07	0.14	0.12	0.07	0.44	0.32
	Highest level of education	6.68	8.65	8.02	8.49	10.46	9.83	7.80	14.32	12.22	5.22	9.18	7.90	5.30	10.03	8.50
Health care	Health insurance	78.92	91.70	87.62	73.45	85.99	81.96	64.05	58.64	60.38	26.71	14.22	18.26	14.40	8.80	10.60

Standard of living	Electricity	0.24	1.06	0.80	0.07	0.31	0.23	0.22	0.34	0.30	0.07	0.23	0.18	0.43	0.41	0.41
	Drinking water	3.22	20.68	15.12	4.69	17.57	13.44	3.40	13.16	10.03	0.78	7.13	5.08	0.79	5.66	4.09
	Toilet	25.26	75.95	59.80	19.09	65.91	50.90	14.66	52.75	40.52	7.96	30.25	23.06	4.66	27.73	20.28
	Cooking fuel	17.30	49.89	39.51	13.16	39.55	31.09	9.24	24.28	19.45	3.38	8.77	7.03	2.29	6.34	5.04
	Consumer durables	0.40	4.51	3.21	0.07	2.90	1.99	0.14	2.22	1.55	0.28	1.01	0.77	0.22	0.68	0.53
(c) Gap (vulnerability adjusted)																
Income	Net income per capita	−1.05	−1.09	−1.08	3.65	6.62	5.67	10.40	18.89	16.17	13.25	25.99	21.87	14.33	26.77	22.76
Education	Child school attendance	0.00	0.00	0.00	0.00	0.00	−0.01	0.00	0.07	0.05	0.00	0.07	0.05	0.00	0.24	0.16
	Highest level of education	0.00	0.00	0.00	0.00	0.24	0.16	0.21	1.33	0.97	1.48	4.74	3.69	2.01	5.59	4.43
Health care	Health insurance	0.00	0.01	0.00	0.00	0.01	−0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Standard of living	Electricity	0.00	0.00	0.00	0.00	−0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.29	0.10	0.16
	Drinking water	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.54	0.21	3.03	2.12	0.14	3.27	2.26
	Toilet	0.00	−0.02	−0.02	0.00	0.45	0.29	0.36	5.90	4.12	1.90	16.17	11.56	1.29	16.37	11.50
	Cooking fuel	0.00	−0.03	−0.02	0.00	0.14	0.09	0.36	2.49	1.80	0.71	4.40	3.21	0.36	3.14	2.24
	Consumer durables	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.11	0.07	0.14	0.10	0.11	0.00	0.14	0.09

Table 10.22 The contribution of each indicator (%)—$1.25 poverty line

		2000		2004		2006		2009		2011	
Dimension	Indicator	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Income	Net income per capita	11.98	16.66	13.26	15.95	13.10	20.12	20.11	34.82	34.05	44.49
Education	Child school attendance	0.61	0.83	0.04	0.22	0.09	0.20	0.09	0.10	0.14	0.39
	Highest level of education	3.19	2.82	4.32	3.68	4.49	6.32	4.89	6.82	6.27	8.38
Health care	Health insurance	75.35	59.83	74.82	62.02	75.94	57.10	69.93	43.71	54.75	33.27
Standard of living	Electricity	0.05	0.14	0.01	0.04	0.05	0.07	0.04	0.12	0.11	0.23
	Drinking water	0.61	2.70	0.95	2.53	0.80	2.41	0.30	2.52	0.49	1.81
	Toilet	4.82	9.92	3.89	9.44	3.39	9.12	3.17	8.66	2.56	8.59
	Cooking fuel	3.30	6.52	2.68	5.68	2.11	4.24	1.40	2.69	1.47	2.42
	Consumer durables	0.08	0.59	0.01	0.42	0.03	0.41	0.07	0.56	0.16	0.41

Table 10.23 The contribution of each indicator by the Shapley value decomposition (%) [weight (I)]

Dimension	Indicator	2000			2004			2006			2009			2011		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
Income	Net income per capita	12.4	20.1	18.1	17.9	24	22.4	24.5	38.5	34.6	43	69.8	61.8	60.2	77.4	72.9
Education	Child school attendance	0.3	0.6	0.5	0	0.2	0.1	0	0.1	0.1	0	0.1	0.1	0.1	0.3	0.2
	Highest level of education	1.9	2	2	2.5	2.4	2.5	2.5	3.8	3.4	2.9	3.9	3.6	3.4	4.8	4.4
Health care	Health insurance	84.9	76	78.3	79.1	72.2	74.1	72.7	56.6	61.2	53.8	25.4	33.9	36.1	16.8	21.9
Standard of living	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drinking water	0	0.2	0.1	0.1	0.2	0.1	0	0.1	0.1	0	0.1	0.1	0	0.1	0.1
	Toilet	0.3	0.7	0.6	0.2	0.6	0.5	0.2	0.6	0.4	0.2	0.5	0.4	0.1	0.5	0.4
	Cooking fuel	0.2	0.4	0.4	0.2	0.4	0.3	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1
	Consumer durables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 10.24 The contribution of each indicator by the Shapley value decomposition (%) [weight (II)]

Dimension	Indicator	2000			2004			2006			2009			2011		
		Urban	Rural	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
Income	Net income per capita	13.1	10.3	10.6	16.8	13.4	13.8	23.2	18.8	19.4	26.7	23.7	24.1	28	25.4	25.7
Education	Child school attendance	1.2	1.1	1.1	0.1	0.3	0.3	0.1	0.3	0.3	0.3	0.2	0.3	0	0.7	0.6
	Highest level of education	7.4	3.7	4.1	10.9	5.2	6	12.4	9.3	9.6	15.2	13.9	14.1	17.4	16.8	16.8
Health care	Health insurance	28.7	26	26.3	27.9	25.7	26	27.2	20.2	21.1	21.5	7.1	9	16.9	5	6.1
Standard of living	Electricity	0.1	0.5	0.4	0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	2.2	0.8	0.9
	Drinking water	3	9	8.3	5	8.7	8.2	4.9	8.6	8.1	2.3	11	9.9	3.4	9.4	9
	Toilet	24.2	25.6	25.5	21.1	25.3	24.7	17	25.1	24	20.1	28.2	27.2	18	28.1	27.1
	Cooking fuel	21.8	21.8	21.8	18	19.8	19.6	14.8	16	15.9	12.3	14.1	13.6	12.4	12.3	12.3
	Consumer durables	0.5	2	1.9	0.2	1.5	1.4	0.3	1.5	1.4	1.3	1.5	1.5	1.7	1.5	1.5

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