Very preliminary, not to be cited,
comments are welcome.

Changes in Income Inequality in China

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Abstract

The paper discusses the changes in income inequality in the last three decades and presents the new results on income inequality in China at the beginning of the New Millennium, using household survey data of 2002. The data include 9000 households from 22 provinces in rural areas and 7000 households from 12 provinces in urban areas. Various measures of income inequality such as Gini, Theil indices, are estimated for China as a whole, and for urban and rural areas respectively. In order to understand importance of the income gap between urban and rural China, the paper decomposes the total inequality in China as a whole into inequality within rural areas, inequality within urban areas, and inequality between urban and rural areas. A substantial part of the total inequality can be attributed to income gap between rural and urban areas. The regional inequality makes a noticeable contribution to the overall inequality within rural areas and within urban areas.

1. Introduction

China has been the fastest growing economy in the world since the late 1970s. Meanwhile, it has experienced the period of the rapidest rising in income inequality. China is now still under economic transitions, from planned or administratively-controlled economy to market-oriented economy, and from urban-rural divided economy to more uniformed economy (Knight and Song,1999), but it has completed its transition from an egalitarian society to an unequally distributed society. China continues moving to the direction of wider income inequality and has not yet shown any sign that this tendency reverses in the near future.

The problem of rising income inequality is widely concerned by the public, researchers and policy-makers. It is recognized as the crucial one of many social and economic problems. There is an argument that rising inequality would lead to social instability soon or late. Therefore, it is important to assess how serious this problem is. Utilizing the new collected data from the 2002 survey, the paper attempts to provide a basic assessment on income inequality in China as a whole, in rural and urban areas respectively. Inequality measured with Gini coefficient demonstrates that China becomes a highly unequal society. Rural income inequality is larger urban income inequality, partly because a group of rural households became extremely poor, receiving no or negative income due to natural disasters, illness of working members, and losses in investment and business, and partly because there are more substantial regional differences within rural areas. Furthermore, the paper intends to answer the question: how large a part of the total inequality can be attributed to the income gap between rural and urban areas given a striking feature of rural-urban divided society such as China? Our finding indicates that one third of the total inequality can be attributed to the inequality between rural and urban areas. This finding leads to a strong policy implication that to reduce the national inequality can be achieved through narrowing the income gap between rural and urban areas.

China is also an economy with considerable regional differences in terms of land fertility, population density, infrastructure, provision of public services, and industrial structure. These differences have inevitably resulted in income inequality among regions and provinces (Gustafsson and Li, 2002; Song, Chu and Chao, 2000; Knight, Li and Zhao, 2001; Yao and Zhang, 2001). To figure out how important the regional inequality is, the paper applies the commonly used decomposition methods to analysis on income inequality among three regions (coast, central and western) and provinces within rural areas and within urban areas respectively. The results indicate that the inequality between the three regions accounts for a substantial part of the rural inequality. Moreover, the inequality among provinces under study accounts for even a larger part. The regional inequality within urban areas is smaller compared to rural areas, but its contribution to the urban inequality is growing.

The paper is organized as follows. The next section discusses the background. The third section describes the data used for analysis in this paper. The fourth, fifth and sixth sections discuss the current income inequality in China as a whole, in rural and urban areas respectively, basing on the results obtained from our estimation of income inequality. The paper is concluded in the final section.

2. Background

It has been twenty five years since China began economic reform and open-up policy in the late 1970s. China has gone through fundamental changes economically and socially. Meanwhile the changes and adjustments have been taken place in the government policies and in institutional arrangements. These changes are more momentous and swifter in the late 1990s. Some of the changes have inequalizing effects and some have equalizing effects on personal income distribution. We are discussing five relevant issues in this section as a background for understanding the current income inequality.

Declining prices of agricultural product had an inequalizing effect on income distribution within rural areas and rural-urban income gap from 1997 to 2000. Given the fact that the major part of household income comes from farming activities in rural China, the volatile prices of agricultural products inevitably result in income mobility of rural households. When the prices go up, the household income rises. As a result, the rural poverty goes down and the inequality within rural areas and the income gap decline, *ceteris paribus*. As the official statistics show, the purchasing prices of agricultural products declined by 26% in the period of 1997-2000[1]. At the same time, the growth rate of rural household income decreased from 4.6% in 1997 to 2.1% in 2000. The average growth rate of household income from faming activities remained as low as 1.3% during 1996-2001[2].

If the downward tendency of prices of agricultural products had an inequalizing effect on income distribution, the rural migration and labour mobility would play a role at least in narrowing income gap between rural and urban areas (Yang, 1999). Labour mobility from traditional agriculture to non-farm activities and rural-urban migration (Zhang, Rozelle and Huang, 2001; Rozelle, Taylor and de Brauw,1999; Kung and Lee, 2001), were evidenced to have inequalizing effects within rural areas in the late 1980s and the mid 1990s (Khan et al, 1992; 1998), when only a small proportion of rural people had chances to be involved in non-farm activities which were concentrated in some specific areas. It is hard to conclude that the rural-urban migration would have an inequalizing impact within rural areas in the mid 1990s, because it depends on richer or poorer households having working members to move out (Li Shi, 2001). As the labour mobility and migration process would spread over in entire rural China, it

[1] China Rural Statistical Yearbook 2002.
[2] The figure is calculated on the statistics in China Statistical Yearbook 2002, p343.

is no doubt that their equalizing effects would gradually emerge within rural areas when the poor or people in the poor areas get more chances to move out and find jobs in urban areas. A research report, based on the data from the National Census 2000, indicates that there were 88 million of rural labour forces stayed and worked outside their origin township, over 70 percent of which moved to urban areas (Project Team of Employment and Unemployment in Urban China, 2003). Moreover, the number of rural out-migrant labour increased to 94 million in 2002.

There is a consensus of opinion that the prevailing tax reform is to reduce the income inequality within rural areas and the rural-urban income gap. A number of studies have pointed out the regressive feature of taxes and fee-collection in rural China (for example, Gustafsson and Li, 2001a). As agricultural tax and fees were levied on household population and size of land, given the fairly equal distribution of land among rural households, the poor had to pay the same amount of taxes and fees as the rich, but were subject to higher tax rates. Consequently, the regressive tax collection raised income inequality. A simulation exercise demonstrates that the rural Gini coefficient would have decreased by 4 percent and the income gap between urban and rural areas would have narrowed by 13 percentage points if the various taxes and fees had been removed from rural households in 1995. The tax reform, aiming at reducing tax burden of rural households, would certainly help raise the income of rural people so as to make the urban-rural income gap smaller. However, it is not clear if the reform would have an equalizing effect within rural China as the regressive feature of tax collection remains.

A noticeable event occurring in urban China in the late 1990s is the implementation of unemployment and laid-off (*Xiagang*) policy (Appleton, Knight, Song and Xia, 2002). As a result, more than 40 million of urban workers have been laid-off since 1995. The lack of social protection leads to millions of urban households falling into poverty when they lost jobs and received low income (Li Shi, 2002; Fang, Zhang and Fan, 2002). If an unemployment definition close to international standard is taken into account, the rate of unemployment is around 10 percent in recent years[3]. The situation is more serious in some specific areas such as northeast and western China. The high unemployment and the consequent rising of urban poverty make more unequal distribution of income among urban households. Since the end of 2001 the central government has increased the financial support to the urban poor by guaranteeing the subsistence income for the unemployed and the poor households. It is unsuspectingly holding back the rising tendency of income inequality in urban areas.

As a growing number of urban workers have been laid-off and households fallen into poverty on one hand, average wage of urban workers and average income of urban households have increased rapidly on the other hand (Gustafsson and Li, 2001b). The

[3] From the data from the National Census 2000, the urban unemployment rate is estimated as 8.3% in 2000 (Project Team of Employment and Unemployment in Urban China, 2003). Our data show the figure of 10.3% in 2002.

official statistics show 8.7% of growth of average wage of urban workers in the period of 1990-2001. This implies that a small group of urban people such as owners of private firms, corruptive officials and even skilled workers have benefited much more from the rapid wage growth. In other words, a polarization process is taking place in urban areas.

All these happenings would have impacts, positive or negative, on changes in income inequality in China more widely, or in rural and urban areas more specifically. Thus they provide a background for understanding the income inequality in the current China.

3. Data description and income definition

The data for analysis in this paper come from the 2002 household survey, conducted by a research project of "**Income Distribution, Growth and Public Policy in China",** involving a group of researchers in Institute of Economics, Chinese Academy of Sciences, and international scholars. The project is supported by the Ford Foundation in Bejing and SIDA (Swedish International Development Agent). The survey was assisted by The General Team of Rural Survey and The General Team of Urban Survey in NBS (National Bureau of Statistics). The rural survey covers 2 municipalities and 20 provinces, where 9200 households were drawn as samples. The urban survey covers 2 municipalities and 10 provinces, where 7000 sampled households were drawn. The questionnaires were designed by the project team to meet the needs of research. Besides the questions in detail on income of individuals and households, many questions concerning labour market and job mobility were added into the questionnaires. To investigate how households reacted to rising income inequality, some attitudinal questions were raised in the questionnaires.

Definition of income to be used in the analysis in this paper is closer to the official one. Housing subsidy and income in kind are not included since this part of the data needs further cleaning. The rural household income consists of individual wages and subsidies, household net income from labour (gross income from family business minus production cost), property income, transfer income, and (negative) taxes and payments to governments and collective. When analyzing income inequality, the analysis is based on individuals rather than households. Individual income is derived by dividing household income by population size.

4. Inequality in entire China and rural-urban income gap

The widening income inequality in China has inspired a growing literature on this topic (Cheng, 1996; Griffin and Zhao,1993; Gustafsson and Li, 2001a; Khan,Griffin, Riskin and Zhao,1992; Khan and Riskin, 1998; Meng, 2003; Morduch and Sicular, 2002; Riskin, Zhao and Li, 2001). This paper attempts to make a further

contribution to the literature.

Income inequality can be measured with various indices, which have different distributional features in terms of sensitivity to income transfer between the richer and the poorer. The inequality indices commonly used are those including Gini coefficient, Lorenz curve, coefficient of variation and Theil entropy measures. To facilitate international comparisons, the paper uses seven indices of income inequality, six shown in Table 4-1 and Decile analysis as a variant of Lorenz curve presented in Table 4-2. Our analysis results indicate that China becomes a society with a striking feature of significantly unequal distribution of personal income. As shown in Table 4-1, Gini coefficient for China as a whole is 0.46 in 2002. Compared to other Asian countries, China is one of the most unequal countries in Asia.

Table 4-1. Various Measures of Income Inequality in China as a Whole, 2002

Gini coefficient	0.455
Relative mean deviation	0.333
Coefficient of variation	0.963
Standard deviation of logs	0.860
Theil entropy measure	0.349
Theil mean log deviation measure	0.333

Table 4-2 presents the results of decile analysis for China as a whole. The decile analysis provides another way in understanding income inequality in a society. Particularly, the income ratio of the highest income decile to the lowest income decile epitomizes how a large income gap between the richest and the poorest group. It should be noted that the analysis uses a weighted sample of individuals from rural and urban survey. The weights are taken in accordance of population in rural and urban areas.

The third column in Table 4-2 contains the income share obtained by each decile as a percentage of total income in the whole economy. It is obvious that the income share received by the 1st decile (lowest) accounts for less than 2 percent of the total income, while the 10th decile (highest) receives income share nearly 32% of the total income. The fourth column shows the income ratio of each decile to the 1st decile (lowest). Noticeably again, the income ratio of the 10th decile (highest) to the 1st decile (lowest) is as high as 19: 1. Given the feature of urban-rural divided in China, it is no surprising that the rural people more concentrate on the lower income deciles and the urban people on the higher income deciles. The fifth column presents the share of rural population in each decile. In the first decile, 99% are rural population, while in the 10th decile the share of rural population is only 11 percent. It implies that the urban people account for nearly 90 percent of population in the highest income decile, while they are only 1 percent in the lowest income decile. A tendency is shown in Table 4-2 that the proportion of rural population in each decile is declining with decile moving up.

Table 4-2. Inequality in China as a whole, 2002

Decile	Mean income	Percentage in total income (%)	When mean income of the lowest decile=1	Proportion of rural population
1	788	1.7	1.0	0.99
2	1327	2.8	1.7	0.97
3	1764	3.7	2.2	0.94
4	2246	4.8	2.9	0.88
5	2830	6.0	3.6	0.76
6	3625	7.7	4.6	0.59
7	4717	10.0	6.0	0.43
8	6294	13.3	8.0	0.26
9	8535	18.1	10.8	0.15
10	15065	31.9	19.1	0.11

Table 4-3. Decomposition of Income Inequality in China, by rural and urban areas, 2002

	GE(0)	GE(1)	A(1)	A(2)
Within-group inequality	0.224	0.208	0.182	0.349
Between-group inequality	0.126	0.125	0.140	0.312
Within-group inequality as a percentage of total inequality	64.0	62.5	0.565	0.528
Between-group inequality as a percentage of total inequality	36.0	37.5	0.435	0.472

Using our data, the mean income of rural sampled individuals is estimated as 2700 yuan and that of the urban sampled individuals as 7800 yuan in 2002, so the income gap between rural and urban China is 1:2.9. When discussing income inequality in China as a whole, it is interesting to know how large a part of the total inequality comes from inequality between rural and urban areas. To answer this question, decomposition analysis is conducted using Theil indices and Atkinson indices. The results are presented in Table 4-3. The decomposition analysis of the four inequality indices, which are suitable for decomposition analysis, indicates that over one third of the total inequality can be explained by between-group inequality, i.e., income gap between rural and urban areas. It implies that the total inequality would decrease by more than one third if there would be no income gap between rural and urban people. The policy implication is very clear that it would be an option to reduce the national income inequality by narrowing the rural-urban income gap.

5. Income inequality in rural China

To understand income inequality in rural China, we are focusing on three issues of growing importance in this section. The first issue is how large the income inequality in rural areas is in 2002. The second issue is that to what extent the income inequality can be accounted for by income inequality among three regions (coast, central and western). The third issue is that the income differentials among provinces are important.

Table 5-1. Various Measures of Income Inequality in Rural China , 2002

Gini coefficient	0.416
Relative mean deviation	0.290
Coefficient of variation	1.012
Standard deviation of logs	0.720
Theil entropy measure	0.312
Theil mean log deviation measure	0.227

Table 5-1 gives Gini coefficient as 0.416 in rural areas, which is lower than the Gini coefficient in entire China. The rural inequality measured by Gini coefficient is quite high by the international standard. The World Bank Report in 2002 indicates that most Asian countries have Gini coefficients no higher than 0.40. Our estimated Gini coefficient for rural China is substantially higher than the Gini coefficient published by NBS, which is around 10 percent lower[4].

When come to decile analysis, the income ratio of the highest decile to the lowest decile is fairly large. As shown in Table 5-2, the mean income of the highest decile is 11 times higher than that of the lowest decile. The people in the lowest decile receive very low average income, given that some households receiving no income and even negative income, because most of them suffered from natural disasters and illness of working members. Regardless of the lowest decile, the income ratio of the highest decile to the second lowest decile is still quite high, nearly 8:1.

The highest decile group of rural people possesses the largest share of total income in rural areas. Table 5-2 shows that the share is over 28 percent for the highest decile, in contrast with less than 2.5 percent for the lowest decile. Even for the lowest quintile, their income share is less than 7 percent.

[4] If the households with no or negative income would be excluded from analysis, the Gini coefficient would decrease by nearly 4 percentage points.

Table 5-2. Inequality in Rural China, 2002

decile	Mean Income (yuan)	Percentage in total income (%)	When mean income of the lowest decile=1	Proportion of population in coast region	Proportion of population in central region	Proportion of population in western region
1	653	2.5	1.0	0.14	0.32	0.54
2	1060	4.1	1.6	0.11	0.38	0.51
3	1348	5.2	2.1	0.13	0.44	0.43
4	1621	6.3	2.5	0.15	0.50	0.35
5	1913	7.4	2.9	0.19	0.49	0.32
6	2231	8.6	3.4	0.24	0.44	0.32
7	2610	10.1	4.0	0.26	0.47	0.26
8	3153	12.2	4.8	0.36	0.42	0.22
9	4022	15.5	6.2	0.48	0.34	0.18
10	7264	28.1	11.1	0.71	0.20	0.09

The regional disparity is commonly concerned by researchers and decision-makers in China and abroad (for example, Gustafsson and Li, 2002; Yao and Zhang, 2001). Our data allow us to investigate how large the regional inequality is, either by looking at income differentials among three regions, i.e., coast, central and western region, or by measuring income inequality among provinces. Table 5-2 presents the population share of each of the three regions in each decile, which demonstrates, for example, which region the richest people come from, and which region the poorest people come from. It can be seen that over 50 percent of the poorest people in rural areas are those residing in western region, while it is only 14 percent from the coast areas. On the contrary, over 70 percent of the richest rural people come from the coast areas and less than 10 percent from the western areas.

Table 5-3. Measures of Income Inequality in Rural China by Region, 2002

Region	Mean income (yuan)	Population share (%)	Income share (%)	Gini coefficient	GE(0)	GE(1)
Coast	4398	27.7	42.5	0.39	0.272	0.278
Central	2478	40.1	34.7	0.31	0.165	0.167
Western	2024	32.3	22.8	0.34	0.212	0.212
Total (average)	2863	100	100			

To investigate how wide income inequality is in each region and how important between-region inequality is for the total inequality in rural China, we estimate Gini coefficient and Theil entropy indices for each region and conduct decomposition analysis for three regions. The results are presented in Table 5-3 and Table 5-4. Gini

coefficient is highest in the coast areas and lowest in the central areas. Theil entropy indices show the same pattern.

There are substantial income differentials among the three regions, especially between the coast region and the western region. The mean income in the coast part is 2.2 times of that in the western part. Moreover, the coast region has 28 percent population share, but possess 43 percent of the total income in rural areas. A question, therefore, is raised, how large a contribution does the regional inequality make to the total inequality in rural China in 2002? Our decomposition analysis indicates that the between-region inequality can account for nearly one fifth of the total inequality when Theil entropy indices are applied. The contribution is slightly smaller if Atkinson indices are employed.

Table 5-4. Decomposition of Income Inequality in Rural China, by Region, 2002

	GE(0)	GE(1)	A(1)	A(2)
Within-region inequality	0.210	0.224	0.198	0.430
Between-region inequality	0.051	0.053	0.040	0.050
Within-region inequality as a percentage of total inequality	80.5	80.9	83.2	89.6
Between-region inequality as a percentage of total inequality	19.5	19.1	16.8	10.4

Turning to income inequality at provincial level, we present Table 5-5 which exhibits various measures of income inequality within provinces. Gini coefficients vary from one province to another, from 0.25 in Guangxi Province to 0.41 in Zhejiang Province. Our further analysis does show a fairly strong correlation between the mean income and inequality at provincial level in our data, the correlation coefficient being 0.55. Unequal distribution within provinces is correlated with high provincial income level. When we do the same exercises for other inequality measures, the similar results emerge. These results imply that income level is one of the explanatory factors for the currently rising inequality in income distribution in rural China.

Table 5-5. Measures of Income Inequality in Rural China by province, 2002

Province	Mean income (yuan)	Gini coefficient	GE(0)	GE(1)	A(1)	A(2)
Beijing	5377	0.378	0.240	0.269	0.213	0.382
Hebei	2941	0.327	0.197	0.183	0.179	0.353
Shanxi	2309	0.325	0.207	0.179	0.187	0.447
Liaoning	2888	0.358	0.234	0.217	0.208	0.463

Jilin	2743	0.303	0.162	0.158	0.150	0.304
Jiangsu	4740	0.323	0.175	0.186	0.160	0.289
Zhejiang	6302	0.409	0.337	0.296	0.286	0.783
Anhui	2126	0.287	0.144	0.143	0.134	0.266
Jiangxi	2469	0.290	0.145	0.150	0.135	0.254
Shandong	3279	0.362	0.232	0.247	0.207	0.411
Henan	2438	0.278	0.131	0.137	0.123	0.260
Hubei	2664	0.311	0.175	0.170	0.161	0.386
Hunan	2691	0.346	0.199	0.201	0.180	0.324
Guangdong	4547	0.345	0.209	0.228	0.188	0.375
Guangxi	1863	0.249	0.107	0.109	0.101	0.198
Chongqing	2216	0.255	0.106	0.106	0.101	0.191
Sichuan	2478	0.289	0.152	0.170	0.141	0.373
Guizhou	1430	0.330	0.191	0.185	0.174	0.379
Yunnan	1709	0.323	0.198	0.178	0.180	0.382
Shaanxi	1791	0.339	0.200	0.252	0.181	0.306
Gansu	1828	0.370	0.230	0.229	0.205	0.368
Xinjiang	2355	0.348	0.226	0.217	0.202	0.565

It is apparent that there are significant income differences among provinces. As shown in Table 5-5, provincial mean income ranges from 1430 yuan in Guizhou Province to 6302 yuan in Zhejiang Province. Given a substantial income inequality among provinces, it is interesting to figure out what contribution inter-province inequality makes to the total inequality in rural areas. Our decomposition analysis has generated the results as expected, as shown in Table 5-6. Using Theil enthropy measure, we got 27 percent of the total inequality from between-group inequality and 73 percent from within-group inequality. The policy implication resulting from our analysis is that there remains a room for government policy to narrow rural income inequality by reducing income differences among provinces.

Table 5-6. Decomposition of Income Inequality in Rural China, by Province, 2002

	GE(0)	GE(1)	A(1)	A(2)
Within-province inequality	0.191	0.203	0.183	0.399
Between-province inequality	0.070	0.075	0.058	0.099
Within-province inequality as a percentage of total inequality	73.2	73.0	75.9	80.0
Between-province inequality as a percentage of total inequality	26.8	27.0	24.1	20.0

6. Income inequality in urban China

To draw a picture of income inequality in urban China, we have analyzed the urban household data, focusing on three aspects. First, it is interesting to know how large the income inequality in urban areas is in 2002. As we did in the previous section, various measures of income inequality were calculated for urban China. Second, it is important to recognize that to what extent the income inequality can be accounted for by income inequality among three regions (coast, central and western) within urban areas. Third, it is interesting to figure out how important the income differentials among provinces are compared to rural China.

Table 6-1 presents various measures of income inequality in urban China in 2002. Gini coefficient is 0.32, which is nearly 10 percentage points lower than Gini for rural areas, implying that the income inequality is lower in urban areas. To compare our urban Gini coefficient with the official one published by NBS, they are very similar.

Table 6-1. Various Measures of Income Inequality in Urban China , 2002

Gini coefficient	0.316
Relative mean deviation	0.224
Coefficient of variation	0.644
Standard deviation of logs	0.580
Theil entropy measure	0.169
Theil mean log deviation measure	0.168

Lower income inequality in urban areas can also be illustrated by Table 6-2. The income ratio of the highest decile to the lowest decile is 8:1, which is much smaller than that for rural samples. The third column in Table 6-2 indicates that the richest decile group possesses nearly a quarter of the urban total income, while for the poorest decile the income share is only 3 percent.

Table 6-2. Inequality in Urban China, 2002

decile	Mean Income (yuan)	Percentage in total income (%)	When mean income of the lowest decile=1	Proportion of population in coast region	Proportion of population in central region	Proportion of population in western region
1	2441	3.1	1.0	0.20	0.34	0.46
2	3665	4.6	1.5	0.22	0.37	0.41
3	4555	5.8	1.9	0.24	0.33	0.43
4	5414	6.9	2.2	0.26	0.33	0.41
5	6337	8.0	2.6	0.31	0.28	0.40
6	7286	9.2	3.0	0.34	0.30	0.36

7	8345	10.6	3.4	0.37	0.26	0.38
8	9729	12.3	4.0	0.43	0.23	0.34
9	11958	15.2	4.9	0.52	0.21	0.27
10	19167	24.3	7.9	0.70	0.09	0.21

Table 6-3 displays the income inequality within and between the three regions in urban areas. It is clear that the mean income of the coast region is much higher than that in the central and western areas. At the same time, the income inequality is highest in the coast region, which has Gini coefficient 13 percent higher than one in the central region and 6 percent higher than one in the western region. Using the same method of decomposition analysis as in the previous section, the total inequality in urban China can be decomposed into within-region inequality and between-region inequality. The results shown in Table 6-4 indicate that the between-inequality can explain around 10 percent of the total inequality. Thus, an assessment can be made that the between- region inequality in the present urban China is growing, but less significant compared to rural China.

Table 6-3. Measures of Income Inequality in Urban China by Region, 2002

Region	Mean income (yuan)	Population share (%)	Income share (%)	Gini coefficient	GE(0)	GE(1)
Coast	9899	0.358	0.450	0.315	0.168	0.166
Central	6540	0.275	0.228	0.278	0.130	0.128
Western	6541	0.367	0.322	0.296	0.149	0.148
Total (average)	7892	100	100	0.316	0.168	0.169

The next step to investigate regional inequality in urban areas is to expand our decomposition analysis to provincial level. As 10 provinces and 2 municipalities are covered in the 2002 survey, it is still an open question that this provincial analysis would have a national implication. Table 6-5 presents mean income and measures of inequality for each province in the sample. Inequality measures within provinces show quite a large difference across provinces. For instance, Gini coefficient ranges from 0.25 in Beijing to 0.33 in Sichuan. Meanwhile, provincial mean income varies from one province to another. Apart from Beijing, Guangdong Province has the second highest income of 12120 yuan and Gansu the lowest income of 6135 yuan, noticeably the former being nearly two times of the latter.

Table 6-4. Decomposition of Income Inequality in Urban China, by Region, 2002

	GE(0)	GE(1)	A(1)	A(2)
Within-region inequality	0.151	0.151	0.142	0.270
Between-region inequality	0.017	0.018	0.015	0.024

Within-region inequality as a percentage of total inequality	89.9	89.3	90.4	91.8
Between-region inequality as a percentage of total inequality	10.1	10.7	9.6	8.2

Is the between-province inequality in accounting for the total inequality in urban China as important as in rural China? Table 6-6 provides some answers to this question. When the total inequality is decomposed into two components, within-group inequality and between-group inequality, the decomposition analysis of Theil indices indicates there is 16-17 percent of the urban inequality attributed to between-province inequality.

Table 6-5. Measures of Income Inequality in Urban China by Region, 2002 .

Province	Mean income (yuan)	Gini coefficient	GE(0)	GE(1)	A(1)	A(2)
Beijing	12638	0.246	0.109	0.103	0.103	0.214
Shanxi	6584	0.304	0.155	0.154	0.144	0.271
Liaoning	7635	0.269	0.125	0.117	0.117	0.236
Jiangsu	8751	0.314	0.166	0.165	0.153	0.285
Anhui	6439	0.287	0.136	0.136	0.127	0.239
Henan	6241	0.297	0.147	0.153	0.137	0.255
Hubei	6915	0.246	0.106	0.098	0.100	0.209
Guangdong	12121	0.326	0.175	0.175	0.160	0.292
Chongqing	7720	0.297	0.147	0.151	0.137	0.257
Sichuan	7014	0.331	0.189	0.193	0.173	0.319
Yunnan	7433	0.253	0.110	0.103	0.104	0.211
Gansu	6135	0.273	0.124	0.128	0.117	0.217

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Table 6-6. Decomposition of Income Inequality in Urban China, by Province, 2002

	GE(0)	GE(1)	A(1)	A(2)
Within-province inequality	0.141	0.140	0.132	0.253
Between-province inequality	0.027	0.029	0.026	0.046
Within-province inequality as a percentage of total inequality	83.9	82.8	83.5	84.6
Between-province inequality as a percentage of total inequality	16.1	17.2	16.5	15.4

7. Conclusions

China has experienced two decades of significantly rising income inequality. At the beginning of the new millennium income inequality reaches to a quite high level. Our analysis in this paper, utilizing the data from the 2002 household income survey and applying income definition very similar to official one, provides an estimation of Gini coefficient as 0.445 for China as a whole. It makes China become one of the countries with highest inequality in Asia and the World as well. The decomposition analysis allows us to figure out how important the income gap between rural and urban areas in explaining the national inequality. The results indicate that over one third of the total inequality can be attributed to the inequality between rural and urban areas. This finding leads to a strong policy implication that reduction of the national inequality can be achieved through narrowing income gap between rural and urban areas.

Income inequality is wider in rural areas than in urban areas. The reason is that a group of rural households received no income or negative income as they suffered natural disasters and losses in their investment and business. Another problem is regional disparity of income distribution among rural households. The results from decomposition analysis indicate that the inequality between the three regions (coast, central and western) accounts for 20 percent of the rural inequality. Moreover, the inequality among 22 provinces under study accounts for 27 percent of the rural income inequality.

Urban income inequality is smaller, but is growing in terms of the total inequality in urban China as a whole and regional inequality within urban areas.

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