

## **Recent Trends in China's Distribution of Income and Consumption: A Review of the Evidence**

*Eric D. Ramstetter, ICSEAD and  
Graduate School of Economics, Kyushu University*

*Dai Erbiao, ICSEAD*

*and*

*Hiroshi Sakamoto, ICSEAD*

Working Paper Series Vol. 2006-23

December 2006

The views expressed in this publication are those of the author(s) and do not necessarily reflect those of the Institute.

No part of this book may be used reproduced in any manner whatsoever without written permission except in the case of brief quotations embodied in articles and reviews. For information, please write to the Centre.

**The International Centre for the Study of East Asian Development, Kitakyushu**

## **Recent Trends in China's Distribution of Income and Consumption: A Review of the Evidence**

Eric D. Ramstetter (ramst@icsead.or.jp), Research Professor  
International Centre for the Study of East Asian Development, Kitakyushu, Japan  
and Visiting Professor, Graduate School of Economics, Kyushu University

Dai Erbiao (dai@icsead.or.jp), Research Associate Professor  
International Centre for the Study of East Asian Development, Kitakyushu, Japan

and

Hiroshi Sakamoto (sakamoto@icsead.or.jp), Research Assistant Professor  
International Centre for the Study of East Asian Development, Kitakyushu, Japan

December 2006 (with corrections to Table 5 February 2008)

### **Abstract**

This paper examines recent trends in the distribution of income and consumption in China. National accounts data and household survey data from the National Bureau of Statistics both indicate a tendency for the incomes to rise faster in the East of the country than in the Center and the West, with particularly large changes in the 1990s. Similar though less pronounced trends are also observed in national accounts' estimates of household consumption. On the other hand, survey estimates indicate a relatively low level of regional inequality for both incomes and consumption, and no trend toward increased regional inequality for consumption. Official surveys also show that urban-rural gaps increased markedly in the early 1990s and then again after 1998, both nationwide and in most regions. They also indicate that incomes grew more rapidly in rich households than in poor households and that this trend accelerated after the late-1990s, both nationwide and within regions. The distribution of income and consumption was generally more equal within regions than nationwide and intra-regional distribution tended to be more equal in the Center and the West than in the East. Several studies use alternative surveys to address shortcomings in the official survey estimates, suggesting similar trends over time. They indicate that official survey estimates probably underestimate incomes but there is disagreement about the extent of urban-rural gaps. A few other studies also suggest that accounting for internal migration (ignored by most inequality measures) would greatly increase inequality in urban areas. There is also evidence suggesting the convergence of incomes among regions during the immediate post reform period to 1990 or so and the lack of convergence in the 1990s, but the evidence regarding regional distribution is also inconsistent in many respects.

**Keywords:** Income, Consumption, Distribution, China

**JEL Categories:** D31, O15, O18, O53, R12

**Acknowledgment:** We are very grateful for helpful comments from Ding Lu and Nazrul Islam, and other participants in the Second Workshop of the Project "Recent Economic Growth in China: Performance, Problems, and Prospects", which was held at ICSEAD on 7-8 July 2006. Nazrul Islam also provided valuable editorial advice. However, we are solely responsible for all opinions expressed and all remaining errors.

## 1. Introduction

It is well known that China's economy has grown very rapidly in recent years, though there is some controversy over precisely how fast economic growth has been. For example, the new (revised) series on gross domestic product (GDP) suggest that between 1993 and 2004, China's per capita GDP increased 4.1 times in nominal terms and 2.7 times in real terms (Tables 1-2).<sup>1</sup> The old national estimates suggest a somewhat slower increase, 3.6-fold and 2.3-fold, respectively, but the old region-based estimates indicate a more rapid increase for the nation, 4.4-fold and 3.0-fold, respectively. The new national series is probably the most accurate because it incorporates new data and estimation techniques.

Rising production and incomes are an important indication of improvements in living standards. In a country like China where many citizens remain relatively poor, increasing incomes of the poor is also a particularly high priority. In this respect, the rapid increase in per capita household consumption, 3.5-fold (old national series) or 3.7-fold (old region-based series) in nominal terms during 1993-2004 (Table 3), is another important indicator of the large improvements in living standards during this period. This indicator is particularly relevant to poorer households because they devote a relatively large portion of their income to consumption. In short, trends in per capita GDP and per capita household consumption are both important indicators that China has continued its rapid economic progress in recent years.

Despite this progress, a growing literature has also highlighted concerns with substantial increases in various measures of inequality in recent years. Chinese policy makers also appear to be devoting more attention to inequality issues. The most important reason for concern with equity-related issues in China is probably political, reflecting the desire to avoid marginalizing social groups economically, and thereby reducing the chances of related social

---

<sup>1</sup> A major difference between the revised new series and the old series is that the new series includes larger estimates of GDP in the services industries.

unrest. In China, the country's socialist legacy and related social perceptions of equality's importance are also key considerations for policy makers.<sup>2</sup>

The primary purpose of this paper is to examine trends and patterns observed in China's distribution of income and consumption expenditures during the rapid growth of the 1990s and the early 21<sup>st</sup> century. Unfortunately, this apparently simple task is also quite daunting for several reasons. First, there are many types of distributions which are potentially important and it is impossible to consider all of them simultaneously. In this paper, we will focus on the distributions of income and consumption, primarily because they are meaningful economic indicators and are relatively easy to measure in the Chinese case. However, it is also important to recognize that distributions of other economic indicators such as productive assets or educational opportunities can be equally important. Second, there are many ways to measure any distribution. Primarily because this paper puts a high priority on incorporating the most recent information available, it focuses on simple measures obtained from published sources. Nonetheless, as will become clear below, these calculations have some important shortcomings and the paper will carefully compare patterns and trends in published data with those observed in compilations using alternative data sources and/or more sophisticated methodologies. Third, as illustrated by the variety of GDP estimates discussed above, there are important measurement issues to address. On the other hand, it should also be recognized that many Chinese data are generally relatively good for a country of its income level.

Because the primary purpose of this paper is to review recent trends in distribution, it begins with an overview of recent trends that can be observed in the published data (Section 2). The paper then compares the trends observed in official estimates to those identified in

---

<sup>2</sup> Policy makers in China and worldwide are correctly concerned with equality-related issues, though modern economists often have difficulty evaluating these issues or recommending policies toward them. This is because modern economists often define an optimal policy using the Pareto criteria (i.e., a policy should never make one or more members of a society worse off in his or her own eyes). However, realistic solutions to equality-related issues often require one group to sacrifice for the benefit of another and thereby contradict the Pareto criteria.

previous studies of China's distribution, many of which try to address some of the measurement problems in the official estimates (Section 3). Finally, some concluding remarks are offered (Section 4).

## **2. Recent Trends in Distribution**

This section summarizes recent trends observed in the distribution of income and consumption using annual data from the national accounts and the official surveys of urban and rural households coordinated by the National Bureau of Statistics (NBS). These data are chosen because they are easily updated from the *China Statistical Yearbook* (National Bureau of Statistics various years; State Statistical Bureau various years) or the *China Compendium of Statistics 1949-2004* (National Bureau of Statistics 2005a).<sup>3</sup> Both data sources have important weaknesses, which will be pointed out as relevant below.

### **2a. Distribution among Regions**

The disparity of per capita GDP among regions is among the most commonly cited evidence regarding China's uneven and widening income distribution (Table 1). Average per capita GDP was higher than the national average in 11 Eastern provinces (Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan) but much smaller in 8 Central provinces (Shanxi, Jilin, Heilongjiang, Anhui, Henan, Hubei, and Hunan) and 12 Western provinces (Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang).<sup>4</sup> The differentials

---

<sup>3</sup> China Development Research Foundation, ed. (2005) and Han (2004) are two other prominent sources that try to analyze recent trends primarily using official data.

<sup>4</sup> The distinctions between the East, Center, and West are based primarily on the policy biases accorded each region, though the correlation between policy bias and geography is high. For example, provinces in the Eastern or Coastal region were allowed preferential access to trade and foreign direct investment since the late 1980s, while the West has been given priority in the allocation of development funds and projects in recent years, partially to redress the

between the East and the other two regions also tended to widen over time. For example, per capita GDP in the East increased from 1.40 times the national average in 1988 to 1.49-1.50 times in 1993 and 1998, and then slightly more in 2000-2004.<sup>5</sup> In the three richest, primarily urban, provinces of Beijing, Shanghai, and Tianjin, per capita GDP increased from 3.08 times the national average in 1993 to 3.29-3.37 times in 2000-2004. At the other extreme, per capita GDP in the West declined from 68 percent of the national average in 1988 to 65 percent in 1993 and 59-60 percent in 2000-2004. Per capita GDP in the Center also declined from 83 percent of the national average in 1988 to 75 percent in 1993, but remained largely unchanged thereafter.

Disparities in per capita disposable income have apparently been much smaller than disparities in per capita GDP, however. For example, according to data from official household surveys, mean disposable income in the East was only 1.14-1.26 times the national average in urban areas and 1.36-1.49 times in rural areas (Table 1).<sup>6</sup> Likewise, disposable incomes in the West were also much larger relative to the national average, 86-96 percent in urban areas and 72-85 percent in rural areas, than per capita GDP was. Compared to per capita GDP, there was also less inequality of disposable income in urban areas in the Center, but more in rural areas. Because the household surveys are compilations of information from relatively large samples of households, errors in the survey data are likely to be smaller than in the national accounts, which include considerable extrapolation from raw survey data for

---

imbalances resulting from earlier policy biases.

<sup>5</sup> These figures refer to precise calculations of the total GDP in a regional group divided by its population. It should be noted that these and all other official calculations cited in this section use population data compiled from residence permits (*hukou*) to estimate per capita figures. These estimates thus ignore the implications of numerous immigrants who live primarily in urban areas but often do not possess residence permits for the urban area they actually live and work in.

<sup>6</sup> Note that these are arithmetic averages across provinces and differ from the precise calculations discussed above. Arithmetic averages are used because precise calculations are impossible using the published survey data. In general, arithmetic averages suggest relatively large interregional differences, but regional patterns and trends in GDP per capita are quite similar whether precise calculations or arithmetic averages are used (Table 1).

households and firms alike.

On the other hand, the household survey data also need to be used with care for the following reasons. First, one-third of the sample households are rotated annually and it is possible that samples for certain years could be peculiar in one respect or another, though related problems should be minimized by large sample size and attempts to choose the sample so that it represents the universe of Chinese households. Second, the household survey data are likely to underestimate disposable income because government transfers to households are often not recorded or underreported in the household surveys. In this respect, it is also important to recognize that many Chinese households, especially richer ones, are hesitant to report high incomes and consumption.<sup>7</sup> Third, official survey data also thought to underestimate urban incomes relative to rural ones because urban households are eligible for large subsidies (e.g., for education and medical care), pensions, unemployment insurance, and minimum living allowances that rural households are not eligible for or receive in much smaller amounts (China, Development Research Foundation 2005, pp. 26-27).

Although estimates of per capita GDP and per capita disposable income suggest different levels of regional inequality, both the per capita GDP data and the disposable income indicate similar trends in inequality among regions. The most obvious common trend was a fairly large increase in disparity between the East and the national average in 1988-1993 followed by a much slower increase in 1993-2000 and relatively little change thereafter (Table 1). Incomes in the West also deteriorated relatively rapidly compared to the national average in 1988-1993, but the deterioration was less rapid in 1993 to 1998/2000, depending on the measure, and slower yet in subsequent years. In the Center, there was also a notable deterioration of per capita GDP through 1993, but the fall in per capita disposable income was

---

<sup>7</sup> The reluctance to report high incomes and consumption results from fear for potential tax consequences as well as the desire to avoid social stigma attached to the wealthy in a society where the government actively discouraged high incomes and consumption for decades.

relatively small in both urban and rural areas, and all measures of per capita income in the Center remained relatively constant compared to the national average after 1993. For the three richest, urban provinces, precise calculations and arithmetic averages reveal different trends, probably because of the small number of provinces in the group and the small size of Tianjin compared to Beijing and Shanghai. Arithmetic averages suggest that per capita GDP in these three provinces fell relative to the national average through 1993. This contrasts to the rise of per capita incomes through 2000 in Eastern urban areas and large fluctuations in rural areas

The comparisons made above and in Table 1 have one potentially important shortcoming, however. Namely, they fail to account for regional differences in inflation. The bottom half of Table 2 (precise calculations) suggests that GDP inflation has been relatively low in the East (e.g., 44 percent in 1993-2004) compared to the Center and West (e.g., 53-54 percent in 1993-2004). However, these data suggest that interregional differences in inflation were relatively small. Correspondingly, after the base year 1993, real per capita GDP in the East tended to be only slightly larger compared to the national average than nominal per capita GDP (e.g., 1.57 versus 1.53 in 2004). Similarly, real per capita GDP in the other regions tended to be slightly lower compared to the national average than revealed in current price calculations (e.g., 0.71 vs. 0.74 for the Center and 0.57 versus 0.59 for the West in 2004).

There are at least two additional, well-known problems with China's national accounts that mandate caution when interpreting the trends and patterns observed in per capita GDP, however. First, as highlighted by a recent revision of national estimates discussed in the introduction (the new GDP series in Table 1; National Bureau of Statistics, 2006), previous estimates of GDP have underestimated services sector GDP in China and the scope of this underestimation appears to have increased over time. Thus, revised estimates of GDP per capita were 17 percent higher than previous (old series) national estimates in 2004, compared



to only 2 percent higher in 1993. Second, region-based estimates, which are based on the old series methodology, imply slightly lower GDP per capita than old series for the nation in earlier years (-1 percent in 1988), but much higher levels in recent years (7 percent in 1998, 10 percent in 2000, 14 percent in 2002, 18 percent in 2003, and 23 percent in 2004).<sup>8</sup> Unfortunately, estimates for China's regions do not yet reflect the large upward revisions of services sector GDP made at the national level, and the disparity between even the most recent revisions of the old series of regional and national estimates is still quite large. Thus, it is impossible to know how addressing these problems would affect the distribution of per capita GDP across regions, though the disposable income figures suggest that trends in regional distribution are likely to be similar even after the necessary revisions are made.<sup>9</sup>

Household consumption is usually somewhat easier to measure than GDP or disposable income. For example, region-based estimates of household consumption reported in the national accounts are always smaller than corresponding national estimates, and these differentials were relatively small (-4 to -9 percent in 1988-2002 and -1 percent in 2004, Table 3).<sup>10</sup> Moreover, changes in household consumption often have more important implications for household welfare than changes in income, especially among poorer households in the short-run, making it an important indicator of household welfare. It is thus significant that the national accounts data suggest that regional differentials in household consumption were

---

<sup>8</sup> Note also that provincial authorities have had incentives to over-report GDP and its growth to gain favor with superiors, which suggests that region-based estimates are likely to be overestimates (Movshuk 2002; Holz 2004a). On the other hand, it is also likely that incentives for regional authorities to over-report have weakened over time, and probably reduced the size of related overestimation in recent years.

<sup>9</sup> Extremely high estimates of fixed investment-GDP ratios in recent years (e.g., 44-46 percent in 2003-2004) suggest that fixed investment may also have been overestimated in the old GDP series, though the implications of this problem for regional distribution are unclear.

<sup>10</sup> Holz (2004b) also emphasizes some apparent inconsistencies between publicized procedures for estimating household consumption expenditure and the results of efforts to reconstruct those estimates from underlying household survey data.

markedly smaller than corresponding differentials in GDP per capita (Table 1).<sup>11</sup> On the other hand, household survey data suggest regional differentials were rather similar whether measured in terms of disposable income or household consumption. There were two major exceptions where relatively small discrepancies were observed in household consumption, urban households in the West in 2000-2004 and rural households in the East in all years.

The national accounts estimates (arithmetic averages) of household consumption per capita are also similar to corresponding GDP estimates in suggesting relatively rapid increases relative to the national average in the East and relatively slow growth in the West in 1988-2000, but relatively little change thereafter (Table 3). However, survey estimates of household consumption contrast by indicating small changes in both urban and rural households in all three major regions. There was a slight deterioration relative to the national average among both urban rural households in the West, while the reverse was true in the East. Nonetheless these changes were so small they could be considered negligible. There were some increases compared to the national average in the three urban provinces, but in general the survey data suggest that the regional distribution of household consumption remained remarkably constant during this period.

The household survey data also indicate that the regional discrepancies tended to larger among rural households than among urban households. For example, both disposable income and household consumption were relatively low in the urban East and relatively high in the urban West, compared to corresponding rural areas. On the other hand, ratios of the Center to the national average were similar in both urban and rural areas, for both disposable income and household consumption.

---

<sup>11</sup> For example, if arithmetic means are used, the ratio of the East to the national average was 0.17 to 0.26 lower for per capital household consumption than for GDP per capita while ratios for the Center and West were 0.06 to 0.13 higher.

## 2b. Urban-Rural Differentials

In addition to examining regional differences, it is also common to examine urban-rural differentials using data from the household surveys. There is of course some correlation between regional and urban-rural distributions because East is more urbanized than other regions and the West less urbanized. However, this correlation is not straightforward, partially because definitions of urban and rural areas change with the degree of urbanization, which in turn varies by region and over time. Most of China's urban areas have been expanding and there are thus a much larger number of urban areas than there were a decade or two ago, for example.

Revised time series on disposable income in urban and rural areas are published annually in both current prices and in constant prices. Except for 1993 (the base year used here), the urban-rural differential was always somewhat larger if calculated in real terms (Figure 1). However, reflecting trends in inflation, the urban-rural differential increased more in nominal terms than in real terms during 1985-1993 (1.50-fold versus 1.23-fold), but this was reversed in 1993-2004 (1.15-fold versus 1.28-fold).<sup>12</sup>

Measured in current prices, urban-rural differentials have generally been largest in the West and smallest in the East, whether measured in terms of disposable income or household consumption per capita (Figures 2, 3). Differences in urban-rural differentials have been particularly large for household consumption in the West since 1999. As indicated above, interregional differences appear slightly smaller in the household consumption data than in the disposable income data (i.e., the lines in Figure 3 are generally closer together than in Figure 2), but the urban-rural ratios themselves are generally a bit larger if measured in terms of consumption than in terms of income. The fact that urban-rural ratios are generally larger in

---

<sup>12</sup> Implicit price deflators calculated from these data suggest that inflation was relatively rapid in urban areas compared to rural areas in 1985-1993 (a 2.19-fold versus a 1.80-fold increase), but this was reversed in 1993-2004 (a 1.68-fold increase in urban areas versus 1.88-fold in rural areas).

terms of consumption in turn suggests that urban-rural differentials may have particularly important implications for household consumption and short-term welfare in relatively poor, rural households.

Put another way, these data suggest that urban households in the West tended to spend a larger portion of their income on consumption than urban households elsewhere (Figure 4). The gap between urban households in the West and in other regions became conspicuous after the mid- to late-1990s, when the consumption-income ratios stagnated in the 81-83 percent range in the West but fell gradually to 75 percent by 2004 in the East and the Center. In rural households, consumption-income ratios also fell precipitously in all regions between the mid-1990s and 1999 (Figure 5). However, after 1999 these ratios also stagnated in rural households in all regions. The consumption-income ratio is a particularly important indicator of the ability of poorer households to make welfare-improving investments in capital goods and education, among other things. Thus, the inability to sustain declines of the consumption-income ratio in rural households and in urban households in the West suggests that growth has not resulted in increases of such investments among these households in recent years.<sup>13</sup>

## **2c. Distribution among Income Groups**

Although distributions among regions and between urban and rural households are important, a large portion of the income distribution literature focuses on distribution across income groups. This is difficult in the Chinese case because published data have not included compilations by income groups for rural households until very recently. In contrast, data for

---

<sup>13</sup> If taken at face value, the fact that consumption-income ratios tended to be lower in rural areas could be interpreted to mean that rural households have more resources available for saving and investment than their urban counterparts. However, estimates of rural incomes include farm-related expenditures on investment goods and intermediate goods, and are thus not directly comparable with estimates of urban incomes.

urban households are available for the entire 1988-2004 period, indicating that both income and consumption tended to grow relatively rapidly among relatively high-income groups, and that growth rates were particularly high in the top (rich) end of the distribution in recent years (Table 4). For example, between 1993 and 2004, incomes increased only 2.4 times in the poorest quintile, 3.0-3.7 times in the middle quintiles (2, 3, and 4), but a much higher 4.8 times in the richest quintile. Corresponding growth rates of consumption were somewhat slower than growth rates of income but had a similar pattern, 2.4-fold in the poorest quintile, 2.9-3.5-fold in the middle quintiles, and 4.3 fold in the top quintile. In 1988-1993 there was also a similar though less pronounced pattern of relatively rapid income growth among richer urban income groups, but little difference in consumption growth among income groups.<sup>14</sup>

Reflecting relatively rapid growth in rich households, ratios of the richest quintile to the poorest one increased from 2.4 in 1988 to 2.8 in 1993 and 5.5 in 2004 for per capita disposable income (Table 4). Ratios of the rich top quintile to middle-income quintiles 2 and 3 also increased rather steadily though less rapidly. Similar trends are also observed in corresponding ratios for household consumption after 1993. On the other hand, ratios of the top quintile to the fourth quintile increased much more slowly through 2000, before increasing more rapidly thereafter. Ratios of the middle-income quintile 3 to the two poorest quintiles 1 and 2 also increased at a relatively slow pace. Thus, gaps between the top and the middle- to low-income groups appear to have increased rapidly in China's urban areas during the last decade.<sup>15</sup>

In 2002 and 2004, ratios of disposable income in the top quintile to income in the other four quintiles were all larger for rural households than corresponding ratios for urban

---

<sup>14</sup> In 1988-1993, incomes grew 2.0 fold in the lowest quintile, 2.1-2.2 fold in the middle quintiles, and 2.3-fold in the top quintile, while consumption grew 1.9-fold in all quintiles.

<sup>15</sup> Note that there were particularly large increases many of these ratios in between 2000 and 2002 that may have be related to the expansion of the coverage of the urban surveys to cover agricultural households from 2002.

households (Table 4). There was a particularly large (6.9-fold) difference between incomes in the top quintile of rural households and the bottom quintile in 2004. However, corresponding ratios calculated in terms of household consumption were generally similar in rural and urban areas. Perhaps the most conspicuous difference in rural areas was the relatively low ratio of the top to the bottom quintile in rural areas. Thus, although income appears to have been more unevenly distributed in rural areas in recent years, consumption appears to have been distributed a little more equally.

Reflecting low absolute income levels, ratios of household consumption to disposable income were 95 percent or higher for the poorest two quintiles of urban households in 1988 as well as the poorest quintile of rural households in 2002 and 2004 (Table 4). This indicates that these households were so poor that they used almost all their income or had to borrow to finance consumption during these periods. After 1988, consumption-income ratios for all urban income groups were much smaller than in earlier years, which might suggest a marked increase in saving and welfare among urban households. However, these declines were not sustained in the bottom two quintiles where consumption-income ratios changed very little after 1993. Consumption-income ratios also increased for the bottom two quintiles of rural households in 2002-2004. In contrast, consumption-income ratios were generally lower and tended to decrease in high-income households, reflecting the fact that richer households are better able to generate funds for saving. By 2004, consumption-income ratios had fallen to 68 and 76 percent, respectively, for the top 2 quintiles in urban areas, and to 60 and 68 percent, respectively, for the same groups in rural areas. Although it is difficult to attach much importance to trends in the short rural series, the urban trend and the high levels of consumption-income ratios in both urban and rural areas suggest that poorer households have continued to have difficulty generating savings in recent years, despite rapid overall growth.

For 2004, we have also assembled estimates of distribution among income groups by

region for urban households in 30 of the 31 provinces and rural households in 11 provinces (Table 5). These data illustrate a number of important points. First, distributions among income groups are almost always more equal within the three geographical regions (East, Center, and West) than nationwide. In other words, interregional differences appear to be an important source of overall inequality nationwide. Second, distributions among income groups are markedly less equal in the relatively wealthy East than in the Center or the West, though small sample size makes it difficult to know how meaningful this pattern is for rural households. Third, differences in distributions among urban income groups between the East, Center, and West are relatively small for household consumption but larger for disposable income. Fourth, again for urban households, consumption-income ratios are highest in the East, and particularly high in the three richest, primarily urban provinces. This suggests that the urban poor may be somewhat worse off relative to other income groups in the East than in the other regions. Fifth and finally, consumption-income ratios are quite high (82 percent or more) in the bottom two deciles in both urban and rural areas in all of the three regions. In short, these data suggest that the poorest 40 percent of China's households does not appear to have much income they can devote to saving.

### **3. The Economic Literature and its Implications for Inequality Trends in China**

This section reviews the economic literature analyzing trends in China's distribution and their causes with the aim of facilitating a realistic interpretation of the trends described in the previous section. The review first examines the numerous alternative estimates of inequality in China. Although the most recent studies covered in this review only analyze data through 2002 or 2003 at the latest (because of the lag time between authorship and academic publication), there is sufficient overlap to illustrate important similarities and differences observed in the official data and the results of economic studies, which are often able to

address known shortcomings in the official data.<sup>16</sup> Second, the review examines the important and interrelated implications the Chinese system of classifying households by *hukou* (residence permits or family registers) and migration for inequality measures in China. Third, the review summarizes results of studies that use decomposition analyses to identify the sources of changes in inequality. Fourth and finally, the review summarizes some major results from the now voluminous literature on convergence among China's regions.

### **3a. Alternative Estimates of Inequality**

As observed in section 2, published compilations of the NBS household survey data are probably the most comprehensive, accurate, and readily-available estimates of inequality. However the published estimates are limited in important respects. For example, the lack of data on the distribution of rural income by income group makes it difficult to examine long-term trends in rural distribution and published compilations do not attempt to calculate estimates of nation-wide inequality. There are also difficulties involved in combining information from the urban and rural surveys as noted above. The easiest way to remedy these problems is to estimate alternative measures directly from the microdata underlying these surveys. Although the NBS apparently does not make the full data sets available to most researchers, some authors have obtained data which permit more accurate NBS-based estimates than previously possible (e.g., Chen and Wang 2001; Ravillion and Chen 2004).

Several studies also use alternative, generally less comprehensive household surveys that have been conducted by the Chinese Academy of Social Sciences (CASS) and the China Health and Nutrition Study (CHNS), among other sources, to analyze inequality in China. Researchers choose to use these alternative sources first because they have generally found it easier to access the microdata underlying these surveys than the microdata underlying the

---

<sup>16</sup> Note that published compilations from these survey data are limited so it is necessary to access underlying micro-data in order to correct for many of these problems.



NBS surveys, facilitating easier compilations of precise estimates from the alternative sources. In addition, the alternative surveys also contain some details not available from the NBS surveys, including more comprehensive definitions of income in some years. The alternative sources are thus useful to illustrate some of the shortcomings of the NBS surveys.

For example, calculations from the CASS surveys by Khan and Riskin (1998, 232-233) for 1995 generate estimates of income that were 46 percent higher than corresponding NBS-based estimates for rural households and 33 percent higher for urban households. For rural households a little over half of the difference resulted from CASS's inclusion of items excluded from the NBS surveys. For urban households, almost all of the difference resulted from inclusion of items excluded from the NBS surveys. Likewise, Benjamin et al (2005b, p. 11) emphasize that the CHNS surveys tend to measure both urban subsidies and non-farm self employment better than the NBS surveys.

Both of these studies give markedly lower estimates of the rural-urban gap than corresponding NBS estimates (c.f., Figure 1), with the CHNS-based estimates suggesting particularly large differences.<sup>17</sup> Benjamin et al (2005b) also use the CHNS data to show that holding a location's urban-rural status constant for the 1991-2000 period generates smaller and much more constant ratios of urban-to-rural incomes in 1991-2000 than calculations which use the standard NBS practice of allowing changes in an area's urban-rural status over time.<sup>18</sup> In a related calculation, Ravallion and Chen (2004) also show how adjusting for cost-of-living (COL) differentials between urban and rural areas greatly reduces urban-rural

---

<sup>17</sup> Khan and Riskin's 1995 data suggest a current price ratio of 2.47 for 1995, compared to NBS estimates of 2.71 in Figure 1. Estimates from Benjamin et al. (2005, Table 4) show constant (1990) price ratios of 1.80 in 1991, 1.92 in 1993, 1.73 for 1997, and 1.90 for 2000, compared to 2.32, 2.54, 2.46, and 2.74, respectively, if similar (1990 base) calculations are made from the NBS data underlying Figure 1.

<sup>18</sup> Estimates by Benjamin, et al (2005b, Table 5) indicate urban-rural ratios were 1.62 in 1991, 1.68 in 1993, 1.48 in 1997, and 1.53 in 1999, if urban-rural status is fixed for the sample period, while ratios were 1.80, 1.92, 1.73, and 1.90 if urban-rural status is allowed to change over time.

income differentials and removes any significant upward trend in the differential over time.<sup>19</sup> In marked contrast, a prominent study by China, Development Research Foundation (2005, pp. 26-27) suggests that failure to account for relatively large subsidies, pensions, unemployment insurance, and minimum living allowances to urban residents resulted in a roughly 20 percent underestimation of the urban-rural gap in 2002 (at current prices) by official data. There is thus substantial disagreement in the literature about the scope of the urban-rural gap and its trend.

Largely because the NBS does not publish estimates of commonly used indices of household distribution such as the Gini coefficient, many studies in this literature have focused on estimating the Gini and other indices of inequality.<sup>20</sup> Moreover, because it is very difficult to generate estimates of national income distribution by combining published urban and rural data from the NBS household surveys, or even by making calculations from underlying microdata, only a few studies have focused on estimating country-wide inequality or comparing inequality in urban and rural areas. Table 6 provides a summary of the known studies that provide such estimates, most of which are calculated from underlying microdata.<sup>21</sup> Although these studies use a large number of data sources and compilation methodologies, with some important differences among them, most of this literature reveals a number of similar trends and patterns of importance. For example, the following trends and patterns can be observed from estimates of Gini coefficients assembled in Table 6.

---

<sup>19</sup> According to approximate estimates from Figure 3 of Ravallion and Chen (2004), non-adjusted urban-rural ratios rose from about 1.8 in 1988 to 2.5 in 1994 before declining to 2.2 in 1998 and then rising to 2.5 again in 2001. If adjusted by the urban-rural COL differential, the urban-rural ratios fall to about 1.3, 1.8, 1.5, and 1.7, respectively.

<sup>20</sup> The Gini coefficient is in many ways less useful indicators of income distribution than the quintile information in Tables 4-5 because the same Gini can be associated with very different quintile distributions. However, the Gini is a convenient, single indicator of distribution, which is commonly used.

<sup>21</sup> Wu and Perloff (2004) is the only known study that tries to estimate national distributions from published NBS data. All other studies cited in Table 6 use microdata from the sources cited.

1. There has been a long-term trend toward greater inequality nationwide and in urban and rural areas, with the largest increases in the early-1990s and again in the late-1990s and early 21<sup>st</sup> century. This pattern is generally consistent with the officially published data on urban inequality in Table 4, though there are no comparable official data on rural or national inequality.
2. Urban inequality has generally been less pronounced than rural inequality. However, urban inequality has increased more rapidly than rural inequality and microdata-based estimates based on the NBS and CASS surveys for 1997-2002 suggest that urban Gini coefficients were only 8-12 percent smaller than corresponding rural coefficients. The CHNS-based estimates suggest that the rural distribution remained somewhat more unequal in 1997 and 2000 (Gini coefficients were 15-17 percent smaller for urban areas), while the calculations of Wu and Perloff (2004) from aggregate NBS data suggest even larger differences remained. The limited comparisons that can be made from Table 4 (for 2002 and 2004) also suggest that rural distribution remained more unequal than urban distribution in recent years but that inequality is increasing faster in urban areas.
3. Most estimates suggest that national inequality was generally greater than inequality within rural or urban households, reflecting the influence of increasing urban-rural differentials revealed by most data sets. The CHNS-based estimates from Benjamin et al. (2005b), which suggest relatively small and constant urban-rural differentials (see above) are a notable exception to this pattern.
4. NBS-based estimates of inequality tend to be somewhat lower than the alternative estimates for rural areas but differences between NBS-based estimates and estimates from alternative sources are much smaller and less consistent for urban areas. Here it should be stressed that differences between NBS-based calculations and the alternatives presented derive both from (1) definitional differences (especially the use of broader definitions of income in alternative sources; see discussion above) and (2) the relatively comprehensive coverage of the NBS surveys, though it is impossible to sort out precisely how these factors contribute to differences in the various estimates.

In short, there is broad agreement that China's income distribution has worsened markedly since the 1990s and that increases in urban inequality have been particularly large. There is also general agreement that urban incomes have been distributed more equally than urban ones and most sources suggest national inequality was greater than inequality within urban and rural areas, reflecting the urban-rural gap. On the other hand, there is substantial disagreement over the size of the urban-rural gap and the degree of inequality.

### **3b. The *Hukou* System, Migration, and Inequality**

China's system of collecting household information on the basis of *hukou*, combined with large rural-to-urban migration and the difficulty of obtaining residence permits for urban areas, complicates data collection for both the national accounts and the official household

surveys. Urban residence permits are coveted by migrants because they facilitate access to social benefits not accorded those without permits. However, many urban authorities are hesitant to issue urban residence permits for fear of the budgetary pressure that could result from increases in poor residents eligible for social benefits. As a result, there are now a large number of rural-to-urban migrants who have been unable to acquire urban resident permits and are counted as rural residents or simply ignored. The scale of this problem is large with Hertel and Fan (2006, p. 77) reporting that 90 million workers or 19 percent of the rural labor force fell into this category in 2001 while Dai's (2005, p. 19) figures suggest that migrant households accounted for between 14 and 25 percent of the urban households in the 13 cities examined in that study.

Because most household surveys and related studies exclude migrant households, actual urban inequality is likely to be greater than generally reported. Recent CASS surveys explicitly include migrants and allow additional perspectives on the size of the problem. For example, Dai (2005) uses the 1999 CASS survey to estimate inequality for Beijing including 100 migrant households and 670 permanent resident households. The resulting Gini coefficient was 0.33, compared to an estimate of 0.20 from official sources. His decomposition analysis further suggests that 53 percent of Beijing's inequality resulted from inequality within migrant households, 46 percent from inequality within permanent residents, but only 1 percent from inequality between migrants and permanent residents. Income inequality was greater among migrants than permanent residents (Gini coefficients of 0.49 and 0.24, respectively), but mean incomes were actually 12 percent higher in migrant households than in permanent resident households.<sup>22</sup>

In addition, to complicating the measurement of inequality, the *hukou* system also

---

<sup>22</sup> Dai (2005, p. 11) attributes the finding of relatively high incomes among migrants to the fact that this sample of 100 migrant households is "mainly composed of young laborers, and their average household size is smaller than that of the permanent resident households".

contributes to inequality, especially inequality within urban areas, by withholding social benefits from urban migrants. These aspects of inequality are often not captured in existing measures of income. For example, Démurger, et al (2001) and Liu (2005) highlight how the *hukou* system is a major contributor to urban-rural gaps and how it denies migrants access to education and formal sector jobs in urban areas. Likewise, other recent studies have highlighted the importance of regional inequalities in education and health care (Hannum and Wang 2006; Zhang and Kanbur 2005). CGE simulations by Hertel and Zhai (2006) also suggest that potential reforms in the rural land rent market and the household registration system would increase off-farm mobility and reduce urban-rural income gaps differentially dramatically. These and other dimensions of inequality are also important and generally exacerbate income or consumption inequality, if accurately measured.

### **3c. Decomposition Analyses of Inequality's Sources**

Many of the articles in the literature also try to identify sources of inequality. For example, NBS-based estimates by Wu and Perloff (2004) suggest that greater intra-rural and intra-urban inequality as well as increases in the urban-rural gap have been equally responsible for long-term increases in overall inequality, but that the urban-rural gap accounts for an increasing portion of overall inequality in recent years. However, if urban and rural households are reclassified as Benjamin, et al (2005b) suggest, the urban-rural gap becomes a smaller contributor to overall inequality. Likewise, Ravallion and Chen (2004) argue that economic growth in rural areas and in agriculture was the most important means of national poverty reduction. They also provide evidence that taxation of farmers and inflation hurt the poor; but that external trade had little short-term impact.

Benjamin, et al (2005b) also emphasize how increased rural inequality between 1987 and 2001 was primarily related to the unequal growth of non-agricultural self-employment

income and the slow growth in agricultural income after the mid-1990s, as well as the slow growth in agricultural commodity prices. Likewise, calculations from Khan and Riskin (1998) suggest that differentials in large wage income increases was the most important source of increased inequality in rural areas between 1988 and 1995. Gustafsson and Li (2002) found that most rural inequality in 1995 was spatial and the result of uneven changes in incomes across counties.<sup>23</sup> They also highlight how rural incomes in the East, Center, and West “diverged most forcefully” in 1988-1995 (p. 198). On the other hand, Benjamin, et al (2005a) found that geography is not the largest cause of rural inequality and that more than half of observed inequality involves neighbors in the same village. Econometric results from Wan (2004) suggest that government support to rural industrial enterprises (TVEs) and education are the two most important sources inequality in rural areas.

Benjamin, et al (2005b) also show how increased urban inequality between 1987 or 1991 and 2001 has resulted from reduced subsidies and entitlements, increased wage inequality, and the layoffs. This finding is reinforced by Knight and Song (2003) who highlight the role of increasing wage inequality between 1988 and 1995, and Meng (2004), who emphasizes that increased unemployment played an important role in reducing incomes among poorer households in 1995-1999. In some contrast, Fang et al (2002) suggest that urban inequality began to rise rapidly in 1996-1998 largely because reforms led to a widening gap between urban areas in western China and the rest of the country. Meng (2004) also emphasizes the importance of increased regional disparity in 1988-1995. Meanwhile, Khan and Riskin (1988) report that the rental value of owned housing was the largest contributor to urban inequality in 1995, highlighting the effects of higher land prices. Meng et al (2005) argue that the worsening distribution has led to a rise in urban poverty, which is in turn related

---

<sup>23</sup> Wan and Zhou (2005) also highlight the importance of geography as a determinant of regional inequality in their study of representative provinces from the East (Guangdong), Center (Hubei), and West (Yunnan) in 2002.

to an increase in the relative prices of goods and services that were previously provided free or subsidized by the government (e.g., education, housing and medical care). They also point out that higher saving rates among poor households contribute a lot to greater poverty if measured in terms of expenditure. This is related to Knight and Li's (2006) finding that a large portion of the urban poor have incomes that exceed the poverty line but consumption levels which fall below it.

### **3d. Convergence among Regions**

There is now a very large literature on the convergence among China's regions, which is based primarily on estimation of growth models with provincial data. Although this literature does not examine measures of inequality directly, they do reveal whether regional equality tends to increase or decrease over time. Many of these studies have focused on whether real per capita GDP grows faster in poorer provinces and thus converges values in richer provinces or not, or so-called  $\beta$  convergence.

A common way to examine  $\beta$  convergence is to run a regression where the growth of per capita GDP or a related variable (e.g., production per worker) is viewed as a function of the level of the dependent variable at the beginning of the period.<sup>24</sup> If the initial level is the only independent variable, one can examine unconditional convergence or whether convergence is observed when the effects of other factors affecting growth are not controlled for. For example, Makino (2001, 37) provides evidence that unconditional  $\beta$  convergence was statistically significant in 1978-1998 but insignificant in earlier periods, while the calculations presented in Sakamoto (2005, 11), suggest that estimates of unconditional  $\beta$  convergence were not significant either in 1952-2003 or in 1978-2003.

Another common unconditional measure is calculate the coefficient of variation in per

---

<sup>24</sup> There are several types of methodologies used to examine alternative types of convergence studied and in the literature. See Islam (2003, 313-316) for a comprehensive review.

capita GDP growth, which allows one to examine whether the dispersion of growth rates among regions increases or decreases over a period. If the dispersion decreases the process is called  $\sigma$  convergence. The results of Démurger, et al (2001, 148-151) suggest convergence (or at least the lack of divergence) in the initial reform period from 1978 through the 1980s, but divergence in the 1990s, which is particularly pronounced when Beijing, Shanghai, and Tianjin are excluded from their sample. Weeks and Yao (2003) obtain similar results with respect to overall  $\sigma$  convergence in the 1980s and 1990s, while Jia (1998) provides alternative evidence suggesting weak unconditional convergence in 1978-1994.

Although estimates of unconditional convergence are instructive, they can be misleading because they fail to account for the effects of other factors that affect growth. For example, econometric estimates of unconditional  $\beta$  convergence are very likely to be affected by an omitted variable bias. In order to remove this biases it is preferable to estimate convergence in the context of a growth model that includes the initial level of the dependent variable (e.g., GDP per capita) and other factors thought to affect growth as explanatory variables. The most straightforward convergence models are simple cross sections of growth over relatively long periods of time (usually a decade or more) or panels of several 5-10 year periods.<sup>25</sup> In recent years, it has also become somewhat common to use annual panels to examine growth determinants, though the use of annual data may be inappropriate in the context of growth models because they are designed to describe changes over longer periods of time.<sup>26</sup> Two striking patterns emerge from these studies. First, almost all the growth studies find evidence of conditional convergence in the early reform period from 1978 through the mid-to-late-1980s or early-1990s. In addition, Gundlach's (1997) calculations

---

<sup>25</sup> These studies include Bao et al. (2002), Brun et al. (2002), Chen and Feng (2000), Gao (2004), Gundlach (1997), Jian et al. (1996), Kanbur and Zhang (2005), Wei (1995), Yao and Zhang (2001), Zhang, K. (2001); Zhang, W. (2001), and Zhang et al (2001)

<sup>26</sup> Studies including these kinds of analyses are Chen and Fleischer (1996), Démurger (2001), Fu (2004), Pedroni and Yao (2006), and Weeks and Yao (2003).



from reduced forms that include production function parameters also suggest convergence of output per worker during 1978-1989. Second, the more limited evidence for the late 1980s and the 1990s alone suggests a failure to find convergence or divergence, which is similar to the results for  $\sigma$  convergence noted above.

Some of the panel-based results differ in important respects, however. For example, the results of Weeks and Yao (2003), who use a generalized method of moments estimator, are notably different in that they suggest a “system-wide income divergence during the reform period” (Weeks and Yao, 2003, 59). These results are similar to those of Pedroni and Yao (2006) who also use a panel of annual data and recently developed nonstationary panel techniques to test of whether differences in growth rates among pairs of provinces are stationary so that provincial growth rates are cointegrated, using this as their definition of convergence. Their results also suggest a tendency toward divergence that is pervasive nationally and within various regional and political subgroupings. A generalized entropy (GE) decomposition from Bhalla et al (2003) also indicates that China’s provinces tended to form two income clubs in 1952-1997, the rich in the East and the poor in the Central and the West. However, results for subperiods contrasted; there was no clear evidence of club formation in the pre-reform period before, while there was strong evidence of club formation after 1978. Finally, Sakamoto and Islam (2005) also use Markov chains to analyze data for 1952-2003, finding that the distribution of per capita incomes has become bi-modal over this period. However, they also suggest that eventual convergence may result because more provinces moved toward the high end of the distribution during the reform period.

In short, the preponderance of evidence suggests convergence during the early reform period, and the lack of convergence after the late 1980s or early 1990s. However, there are still lots of questions surrounding estimates of convergence. One fundamental problem relates to measurement as indicated by the inconsistency between national and regional GDP

estimates and large differences between estimates of regional distribution based on the national accounts and estimates based on the urban and rural surveys. It would thus be helpful to conduct careful analyses of the differences between regional distributions in the national accounts and in the household surveys, in an attempt to sort out the implications of using alternative definitions of regional inequality. Efforts to clarify how alternative statistical methodologies affect estimates of convergence would also be useful. Finally, the issue of timing is also important. If China has indeed been experiencing regional divergence as many studies suggest has occurred in the 1990s, is this only a temporary phenomenon that will eventually give way to convergence? What are the factors that will determine the answer to that question? Unfortunately, the existing literature is probably further away from answering these important questions than desirable.

#### **4. Conclusions**

This paper first examined recent trends in the distribution of income and consumption in China. National accounts data and household survey data from the National Bureau of Statistics both indicate a tendency for the incomes to rise faster in the East of the country than in the Center or the West, with particularly large changes in the 1990s. Similar though less pronounced trends are also observed in national accounts' estimates of household consumption. On the other hand, survey estimates indicate a relatively low level of regional inequality in both incomes and consumption, and no trend toward increased regional inequality for consumption. Official surveys also show that urban-rural gaps increased markedly in the early 1990s and then again after 1998, both nationwide and in most regions. They also indicate that incomes grew more rapidly in rich households than in poor households and that this trend accelerated after the late-1990s, both nationwide and within regions. By 2004 per capita income in the richest quintile of households was 5.5 times more than in the

poorest quintile in urban areas and 6.9 times more in rural areas. The distribution of income and consumption was generally more equal within regions than nationwide and intra-regional distribution tended to be more equal in the Center and the West than in the East.

The paper then presented a literature review designed to illustrate how more sophisticated studies have dealt with the problems existing in the published data. Several studies use alternative surveys to address shortcomings in the official survey estimates. They generally indicate that official survey estimates probably underestimate incomes but there is disagreement about the extent of urban-rural gaps. Despite the large adjustments proposed by some studies, most studies suggest generally similar trends in distribution that are broadly similar to the trends observed in official data. Namely, there appears to have been a large increase in the late 1980s and early 1990s and then again in the late 1990s and early 21<sup>st</sup> century. The literature review also highlighted how the *hukou* system and large migration has complicated the measurement of inequality in China, in addition to contributing to the increase of inequality, especially in urban areas. The review then described how alternative sources of income affected inequality in rural and urban areas and concluded with a summary suggesting that per capita GDP in Chinese provinces probably tended to converge in the early reform period but not after the late-1980s or early-1990s. Results regarding the role of regional distribution are varied, however, and there are large differences in alternative measures of regional distribution, which have yet to be analyzed carefully.

The bottom line is that the distributions of income and consumption appears have become markedly more unequal in many respects during the late-1980s and early-1990s and then again in the late-1990s and the early 21<sup>st</sup> century. However, there is still considerable uncertainty regarding the precise extent to which inequality has risen and the relative importance of inequality's various dimensions.

## References

- Bao, Shuming, Gene Hsin Chang, Jeffrey D. Sachs, and Wing Thye Wood (2002) "Geographic factors and China's regional development under market reforms, 1978-1998", *China Economic Review*, 13(1), 89-111.
- Benjamin, Dwayne, Loren Brandt, and John Giles (2005a), "The Evolution of Income Inequality in Rural China", *Economic Development and Cultural Change*, 53(4), 769-824.
- Benjamin, Dwayne, Loren Brandt, John Giles, and Sangu Wang (2005b) "Income Inequality during China's Economic Transition", draft prepared for Loren Brandt and Thomas Rawski, eds., *China's Economic Transition: Origin, Mechanisms, and Consequences*, forthcoming (July draft).
- Bhalla, Ajit, Shujie Yao, and Zongyi Zhang (2003) "Regional economic performance in China", *Economics of Transition*, 11(1), 25-39
- Brun, J. F., J. L. Combes, and M. F. Renard. (2002) "Are there spillover effects between coastal and non coastal regions in China?" *China Economic Review*, 13(2-3), pp.161-169
- Chen Shaohua and Wang Yang (2001) *China's Growth and Poverty Reduction: Recent Trends between 1990 and 1999*, Working Paper, No. 2651, World Bank, Washington DC.
- China Development Research Foundation, ed. (2005) *China Human Development Report 2005*, Beijing: United Nations Development Program (China Country Office; <http://www.undp.org.cn/modules.php?op=modload&name=News&file=article&topic=40&sid=228>).
- Dai, Erbiao (2005) "Income Inequality in Urban China: a Case Study of Beijing", Working Paper Series 2005-04, Kitakyushu: International Centre for the Study of East Asian Development.
- Démurger, Sylvie, Jeffery D. Sachs, Wing Thye Woo, Shuming Bao, and Gene Chang (2001) "Geography, Economic Policy, and Regional Development in China", *Asian Economic Papers* 1(1), 146-197.
- Diao, Xinshen, Shenggen Fan, and Xiaobo Zhang (2003) "China's WTO accession: impacts on regional agricultural income--a multi-region, general equilibrium analysis", *Journal of Comparative Economics*, 31(2), 332-351.
- Fang, Cheng, Zhang, Xiobo, Fan, Shenggen (2002) Emergence of urban poverty and inequality in China: Evidence from household survey. *China Economic Review* 13(4), 430-443.
- Fu, Xiaolan (2004) "Limited linkages from growth engines and regional disparities in China", *Journal of Comparative Economics*, 32(1), 148-164.
- Gundlach, Eric (1997) "Regional Convergence of Output per Worker in China: A Neoclassical Interpretation," *Asian Economic Journal*, 11( 4), pp. 423-442
- Gustafsson, Bjorn and Li Shi (2002) "Income inequality within and across counties in rural China 1988 and 1995", *Journal of Development Economics*, 69(1), 179-204.
- Han, Wenxiu (2004), "The Evolution of Income Distribution Disparities in China since the Reform and Opening Up", in Organisation for Economic Co-operation and Development, ed., *Income Disparities in China: An OECD Perspective*, pp. 9-26.
- Hannum, Emily and Meiyang Wang (2006) "Geography and Educational Inequality in China", *China Economic Review*, 17(3), 253-265.

- Hertel, Thomas and Fan Zhai (2006), "Labor market distortions, rural urban inequality and the opening of China's economy", *Economic Modelling*, 23(1), 76-109.
- Holz, Carsten A. (2004a), "China's Statistical System in Transition", *Review of Income and Wealth*, 50(3), 381-409.
- Holz, Carsten A. (2004b), "Deconstructing China's GDP Statistics", *China Economic Review*, 15(2), 164-202.
- Islam, Nazrul (2003), "What Have We Learnt from the Convergence Debate? A Review of the Convergence Literature," *Journal of Economic Surveys*, 17(3), 309-62.
- Jia, Liqun (1998), "Regional catching up and productivity growth in Chinese reform period", *Journal of Social Economics*, 25(6/7/8), 1160-1177.
- Jian, T. L., J. D. Sachs., and A. M. Warner (1996), "Trends in regional inequality in China," *China Economic Review*, 7(1), pp. 1-21
- Khan, Azizur Rahman and Carl Riskin (1998) "Income and Inequality in China: Composition, Distribution and Growth of Household Income, 1988 to 1995." *China Quarterly*, 0(154), 221-53.
- Kanbur, Ravi and Xiaobo Zhang (2005) "Fifty Years of Regional Inequality in China: a Journey Through Central Planning, Reform, and Openness", *Review of Development Economics*, 9(1), 87-106.
- Knight, John and Lina Song (2003). "Increasing urban wage inequality in China, Extent, elements and evaluation", *The Economics of Transition*, 11(4), 597-619.
- Knight, John and Li Shi (2006) "Three Poverties in Urban China", *Review of Development Economics*, 10(3), 367-387.
- Liu, Zhiqiang (2005), "Institution and inequality: the hukou system in China", *Journal of Comparative Economics*, 33(1), 133-157.
- Makino, Matsuyo (2001), *Kaihatsu Tojou Daikoku Chugoku no Chiiki Kaihatsu—Keizai Seichou, Chiiki Kakusa, Hinkon— [Regional Development in the Developing Giant China—Economic Growth, Regional Disparities, Poverty—]*, Tokyo: Daigaku Kyoiku Shuppan.
- Meng, Xin (2004), Economic restructuring and income inequality in urban China. *Review of Income and Wealth* 50(3), 357-379.
- Meng, Xin (2005), "Introduction: Poverty and labor markets in China", *Journal of Comparative Economics*, 33(4), 641-643.
- Meng, Xin, Robert Gregory, and Youjuan Wang (2004), "Poverty, inequality, and growth in urban China, 1986-2000", paper presented at the Interational Research Conference on Poverty, Inequality, Labour Market and Welfare Reform in China, 25-27 August, Australian National University (<http://econrsss.anu.edu.au/chinaconfabstracts.htm>).
- Meng, Xin, Robert Gregory, and Youjuan Wang (2005), "Poverty, inequality, and growth in urban China, 1986-2000", *Journal of Comparative Economics*, 33(4), 710-729.
- Movshuk, Oleksandr (2002). "The Reliability of China's Growth Figures: A Survey of Recent Statistical Controversies", *The Journal of Econometric Study of Northeast Asia*, 4(1), 31-45.

- National Bureau of Statistics, 2000. *Comprehensive Statistical Data and Materials on 50 Years of New China*, and electronic data on accompanying CD-ROM. Beijing: China Statistical Publishing House.
- National Bureau of Statistics (2005a). *China Compendium of Statistics 1949-2004*. Beijing: China Statistics Press.
- National Bureau of Statistics (2005b). \_\_\_\_\_ *Statistical Yearbook 2005* (2005 Statistical yearbooks for China's 31 provinces, autonomous regions, and municipalities). Beijing: China Statistics Press.
- National Bureau of Statistics, 2006. "Announcement on Revised Result about Historical Data of China's Gross Domestic Products", 10 January release downloaded from NBS website ([http://www.stats.gov.cn/english/newsandcomingevents/t20060110\\_402300302.htm](http://www.stats.gov.cn/english/newsandcomingevents/t20060110_402300302.htm)).
- National Bureau of Statistics, various years. *China Statistical Yearbook*, 1999-2005 issues and electronic data on accompanying CD-ROMs. Beijing: China Statistics Press.
- Park, Albert, Xiaoqing Song, Junsen Zhang, and Yaohui Zhao (2003), "The Growth of Wage Inequality in Urban China, 1988 to 1999," mimeo ([http://poverty2.forumone.com/files/13933\\_inequality\\_Yaohui\\_Zhao.pdf](http://poverty2.forumone.com/files/13933_inequality_Yaohui_Zhao.pdf)).
- Pedroni, Peter and James Yudong Yao (2006), "Regional Income Divergence in China," *Journal of Asian Economics*, 17(2), 294-315.
- Phillips, Kerk L. and Shen Kunrong (2005), "What effect does the size of the state-owned sector have on regional growth in China?", *Journal of Asian Economics*, 16(6), 1079-1102.
- Rawski, Thomas G. (2001), What's Happening to China's GDP Statistics? *China Economic Review*, 12(4), 347-354
- Rawski, Thomas G. (2002). "Measuring China's Recent GDP Growth: Where Do We Stand?", mimeo, Department of Economics, University of Pittsburg, <http://www.pitt.edu/~tgrawski/papers2002/measuring.pdf>.
- Ravallion, Martin and Shaohua Chen (2004), "China's (Uneven) Progress Against Poverty." World Bank Policy Research Working Paper 3408. Washington, D.C.: World Bank.
- Sakamoto, Hiroshi (2005), "Chugoku no Shokan Shotoku Kakusa: Doukou wo Shiru [Income Distribution among China's Provinces: Knowing the Trends]", Working Paper Series 2005-09, Kitakyushu: International Centre for the Study of East Asian Development.
- Sakamoto, Hiroshi (2006), "Convergence in China's Provinces: A Time Series Approach", mimeo, Kitakyushu: International Centre for the Study of East Asian Development.
- Sakamoto, Hiroshi and Nazrul Islam (2005), "Convergence across Chinese Provinces: An Analysis using Markov Transition Matrix", Working Paper Series 2005-14, Kitakyushu: International Centre for the Study of East Asian Development.
- State Statistical Bureau (various years) *China Statistical Yearbook*, 1987-1998 issues and electronic data on CD-ROMs accompanying 1997-1998 issues. Beijing: China Statistical Publishing House.
- Yao, S. and Zhang, Z. (2001), "On regional inequality and diverging clubs: a case study of contemporary China," *Journal of Comparative Economics*, 29 (3), 466-84.
- Wan, Guanghua (2004), "Accounting for Income Inequality in Rural China: a regression-based approach", *Journal of Comparative Economics*, 32(2), 348-363.

- Wan, Guanghua and Zhangyue Zhou (2005) "Income Inequality in Rural China: Regression-based Decomposition Using Household Data", *Review of Development Economics*, 9(1), 107-120.
- Weeks, Mevlen, and James Yudong Yao (2003). "Provincial Conditional Income Convergence in China", *Econometric Reviews*, 22(1), 59-77.
- Wei, Shang-Jin (1995) "The Open Door Policy and China's Rapid Growth: Evidence from City-Level Data", in Takatoshi Ito and Anne O. Krueger (eds.), *Growth Theories in Light of the East Asian Experience*, Chicago: University of Chicago Press, pp. 73-104.
- Wu, Ximing and Jeffrey M. Perloff (2004), "China's Income Distribution over Time: Reasons for Rising Inequality", CUDARE Working Papers, Paper 977, University of California, Berkeley.
- Zhang, Kevin Honglin (2001) "How Does Foreign Direct Investment Affect Economic Growth in China?", *Economics of Transition*, 9(3), 679-693.
- Zhang, Wei (2001) "Rethinking regional disparity in China," *Economics of Planning*, 34(1-2), 113-138.
- Zhang, Xiaobo and Kevin H. Zhang (2003) "How Does Globalisation Affect Regional Inequality Within a Developing Country? Evidence from China", *Journal of Developing Areas*, 39(4), 47-67.
- Zhang, Xiaobo and Ravi Kanbur (2005) "Spatial inequality in education and health care in China", *China Economic Review*, 16(2), 189-204.
- Zhang, Zongyi, Aying Liu, and Shujie Yao (2001) "Convergence of China's regional incomes: 1952-1997, 12(2-3) 243-258" *China Economic Review*, 13(2-3), pp.161-169

**Table 1: Per Capita GDP and Per Capita Disposable Income by Regional Group  
(national data in current yuan; regional figures are ratios to national estimates)**

Indicator	1988	1993	1998	2000	2002	2004
<b>GDP PER CAPITA, PRECISE CALCULATIONS</b>						
National, New Series	-	2,998	6,796	7,858	9,398	12,336
National, Old Series	1,355	2,939	6,308	7,086	8,214	10,561
National, Old Region-based Series	1,337	2,937	6,744	7,823	9,382	13,006
East (11 provinces)	1.40	1.49	1.50	1.53	1.53	1.53
Beijing, Shanghai, Tianjin	3.20	3.08	3.16	3.33	3.37	3.29
Center (8 provinces)	0.83	0.75	0.77	0.76	0.75	0.74
West (12 provinces)	0.68	0.65	0.62	0.59	0.60	0.59
<b>GDP PER CAPITA, ARITHMETIC MEANS OF PROVINCIAL GROUPS</b>						
National, arithmetic means	1,512	3,255	7,337	8,589	10,354	14,098
East (11 provinces)	1.54	1.63	1.66	1.69	1.69	1.69
Beijing, Shanghai, Tianjin	2.73	2.66	2.80	2.91	2.94	2.93
Center (8 provinces)	0.78	0.71	0.73	0.71	0.70	0.70
West (12 provinces)	0.66	0.61	0.58	0.56	0.57	0.57
<b>URBAN DISPOSABLE INCOME, ARITHMETIC MEANS OF PROVINCIAL GROUPS</b>						
National, sample means	1,181	2,577	5,425	6,280	7,703	9,422
National, arithmetic means	1,171	2,572	5,404	6,271	7,527	9,159
East (11 provinces)	1.14	1.22	1.24	1.25	1.24	1.26
Beijing, Shanghai, Tianjin	1.28	1.34	1.50	1.61	1.55	1.59
Center (8 provinces)	0.87	0.84	0.83	0.82	0.85	0.85
West (12 provinces)	0.96	0.91	0.89	0.89	0.88	0.86
<b>RURAL DISPOSABLE INCOME, ARITHMETIC MEANS OF PROVINCIAL GROUPS</b>						
National, sample means	545	922	2,162	2,253	2,476	2,936
National, arithmetic means	591	1,010	2,320	2,429	2,730	3,265
East (11 provinces)	1.36	1.47	1.43	1.46	1.49	1.48
Beijing, Shanghai, Tianjin	1.84	2.04	1.91	2.01	2.13	2.15
Center (8 provinces)	0.85	0.81	0.89	0.85	0.84	0.85
West (12 provinces)	0.85	0.76	0.74	0.73	0.72	0.72

Note: The East is Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan; the Center is Shanxi, Jilin, Heilongjiang, Anhui, Henan, Hubei, and Hunan; the West is Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang.

Sources: National Bureau of Statistics Office (2000, 2005a; various years).



**Table 2: Real Per Capita GDP and Implicit Deflators for GDP by Regional Group  
(national data in 1993 yuan; regional figures are ratios to national estimates)**

Indicator	1988	1993	1998	2000	2002	2004
<b>REAL GDP PER CAPITA, PRECISE CALCULATIONS</b>						
(national data in 1993 yuan; regional figures are ratios to national estimates)						
National, New Series	-	2,998	4,625	5,306	6,183	7,397
National, Old Series	2,055	2,939	4,460	5,075	5,826	6,901
National, Old Region-based Series	1,949	2,937	4,924	5,779	6,908	8,805
East (11 provinces)	1.39	1.49	1.55	1.57	1.57	1.57
Beijing, Shanghai, Tianjin	3.25	3.08	3.20	3.30	3.35	3.30
Center (8 provinces)	0.83	0.75	0.74	0.73	0.72	0.71
West (12 provinces)	0.69	0.65	0.59	0.58	0.58	0.57
<b>GDP DEFLATORS (1993=100)</b>						
National, New Series	-	100	147	148	152	167
National, Old Series	66	100	141	140	141	153
National, Old Region-based Series	69	100	137	135	136	148
East (11 provinces)	69	100	133	132	133	144
Beijing, Shanghai, Tianjin	67	100	135	137	137	147
Center (8 provinces)	69	100	143	141	140	154
West (12 provinces)	67	100	142	139	140	153

Notes and Sources: See Table 1.

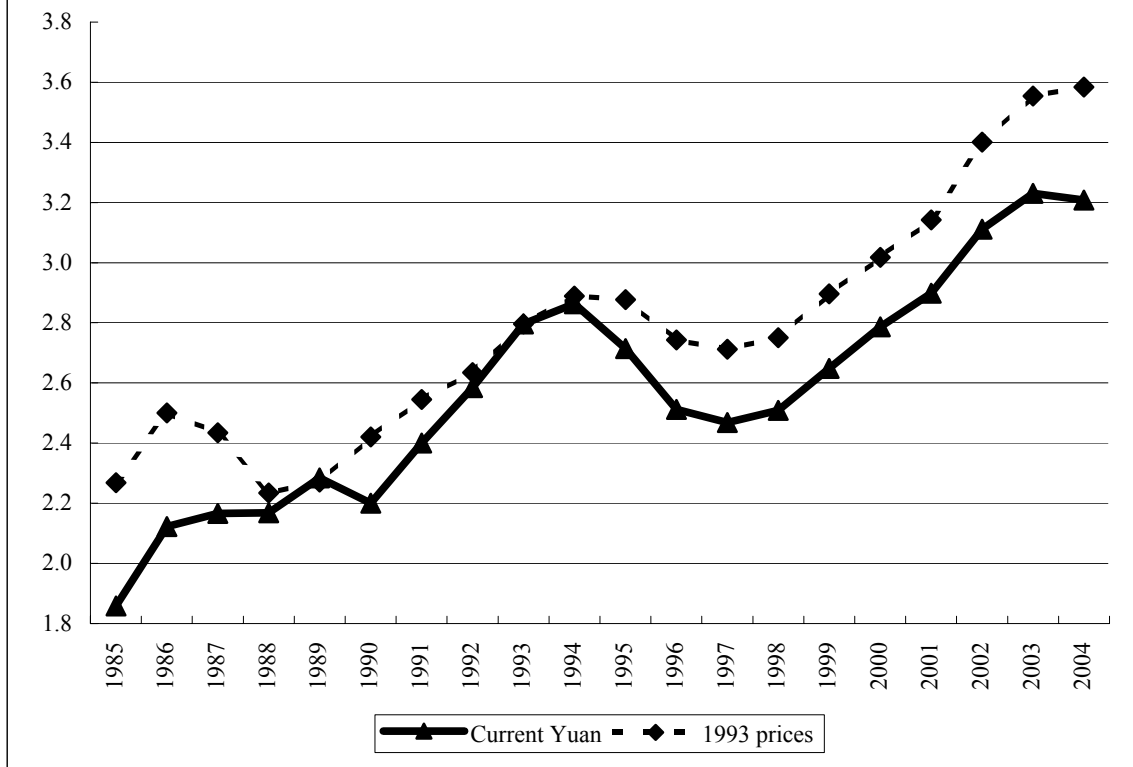
**Table 3: Per Capita Household Consumption by Regional Group**  
**(national data in current yuan; regional figures are ratios to national estimates)**

Indicator	1988	1993	1998	2000	2002	2004
<b>NATIONAL ACCOUNTS' ESTIMATES, PRECISE CALCULATIONS</b>						
National, Old Series	704	1,344	3,022	3,452	3,884	4,696
National, Old Region-based Series	675	1,266	2,755	3,130	3,650	4,638
East (11 provinces)	1.26	1.28	1.34	1.36	1.37	1.36
Beijing, Shanghai, Tianjin	2.11	2.28	2.46	2.77	2.93	2.91
Center (8 provinces)	0.88	0.86	0.86	0.85	0.85	0.86
West (10-12 provinces)	0.78	0.78	0.73	0.71	0.69	0.68
<b>NATIONAL ACCOUNTS' ESTIMATES, ARITHMETIC MEANS</b>						
National, arithmetic means	741	1,373	2,907	3,364	3,971	4,974
East (11 provinces)	1.31	1.37	1.47	1.51	1.53	1.52
Beijing, Shanghai, Tianjin	1.88	2.00	2.25	2.48	2.58	2.60
Center (8 provinces)	0.85	0.85	0.84	0.81	0.80	0.83
West (10-12 provinces)	0.78	0.74	0.68	0.65	0.65	0.64
<b>SURVEY ESTIMATES, URBAN HOUSEHOLDS</b>						
National, sample means	-	2,111	4,332	4,998	6,030	7,182
National, arithmetic means	-	2,112	4,342	5,034	5,953	7,078
East (11 provinces)	-	1.22	1.22	1.22	1.22	1.22
Beijing, Shanghai, Tianjin	-	1.39	1.48	1.55	1.56	1.58
Center (8 provinces)	-	0.83	0.83	0.83	0.82	0.83
West (10-12 provinces)	-	0.90	0.90	0.92	0.92	0.91
<b>SURVEY ESTIMATES, RURAL HOUSEHOLDS</b>						
National, sample means	-	770	1,590	1,670	1,834	2,185
National, arithmetic means	-	819	1,659	1,750	1,930	2,313
East (11 provinces)	-	1.36	1.36	1.38	1.40	1.40
Beijing, Shanghai, Tianjin	-	1.79	1.82	1.82	1.93	1.96
Center (8 provinces)	-	0.83	0.88	0.86	0.86	0.84
West (10-12 provinces)	-	0.76	0.75	0.75	0.73	0.74

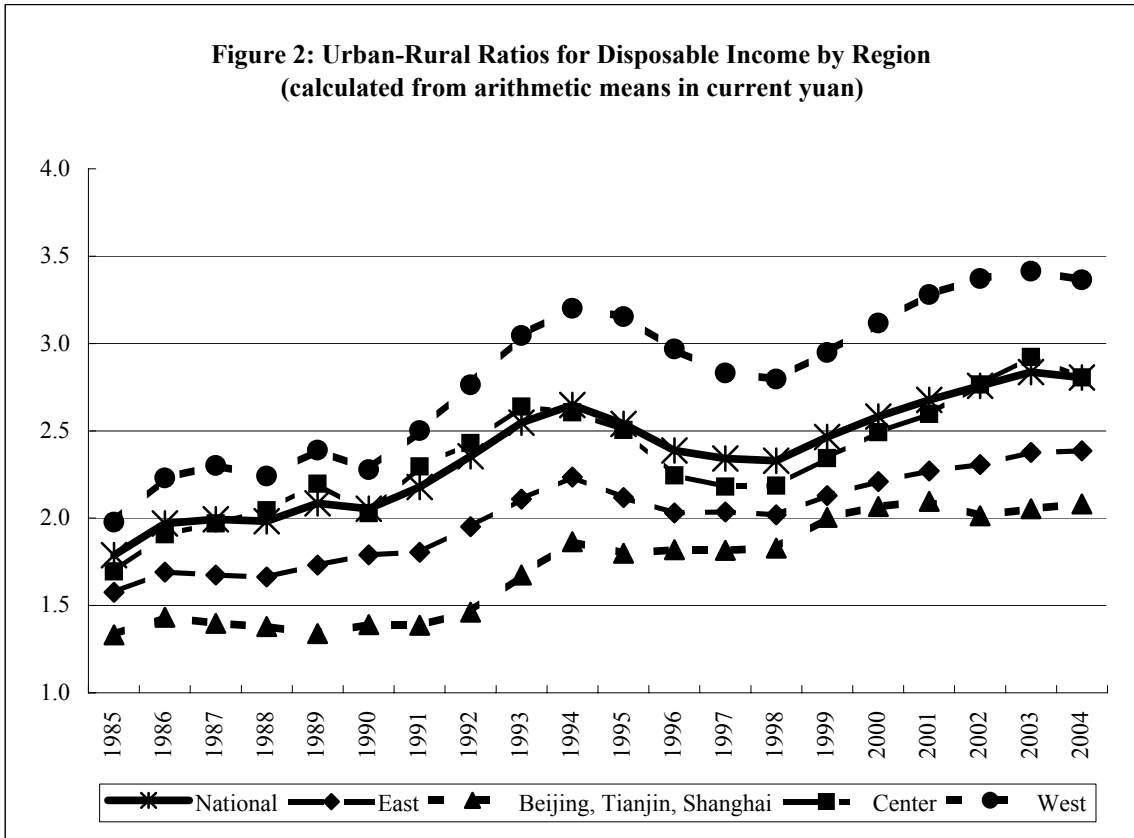
Note: See Table 1 for definition of regions; all estimates exclude Chongqing in 1988 and 1993; urban household estimates exclude Tibet in 1993 and 1998.

Sources: National Bureau of Statistics (2005a; various years); State Statistica Bureau (various years).

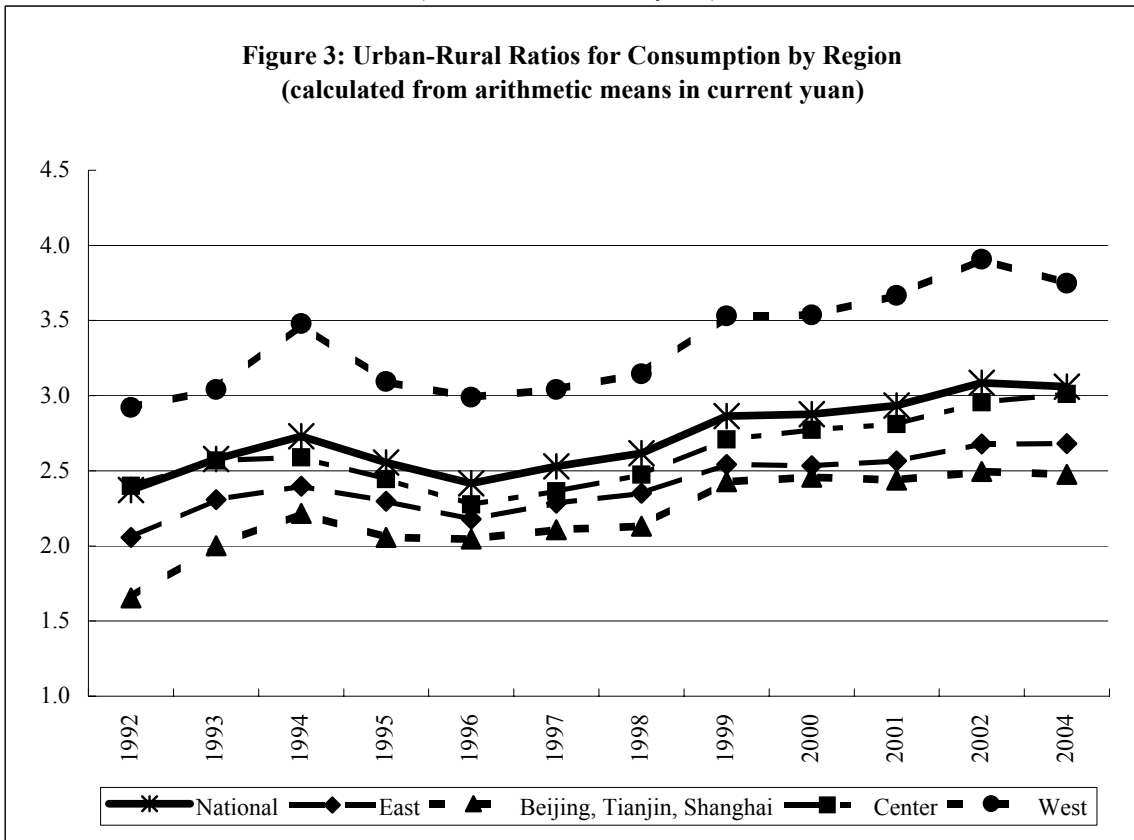
**Figure 1: National Urban-Rural Ratios for Disposable Income  
(sample means)**



Sources: National Bureau of Statistics (2000, 2005a; various years).

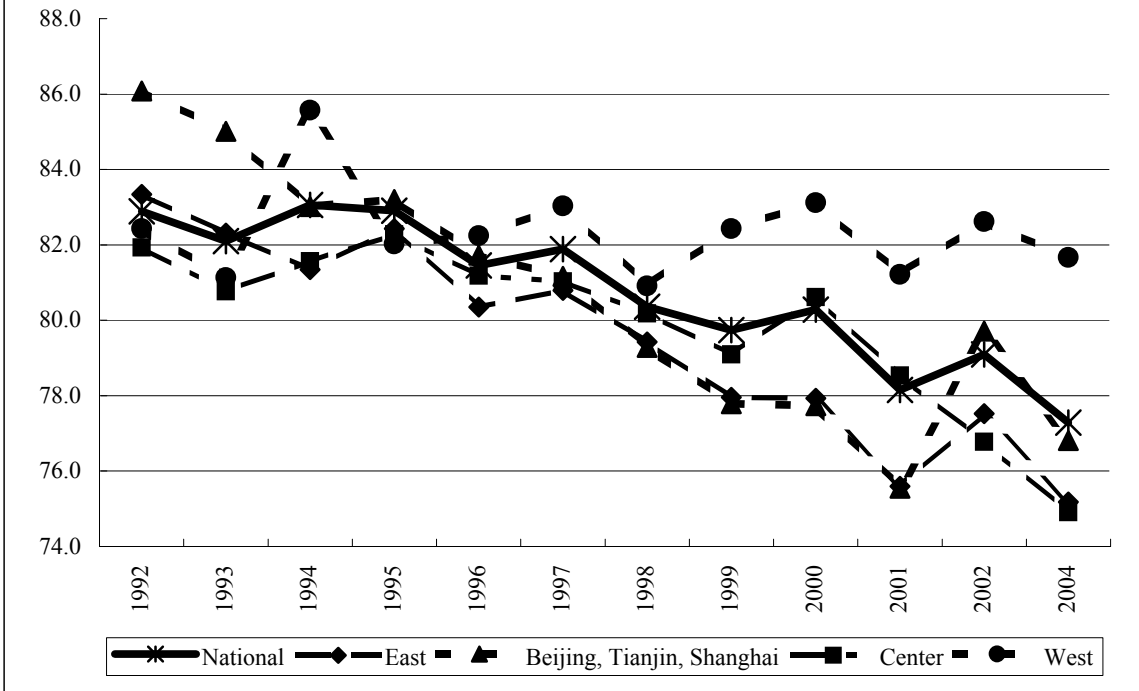


Sources: National Bureau of Statistics (2000, 2005a; various years).



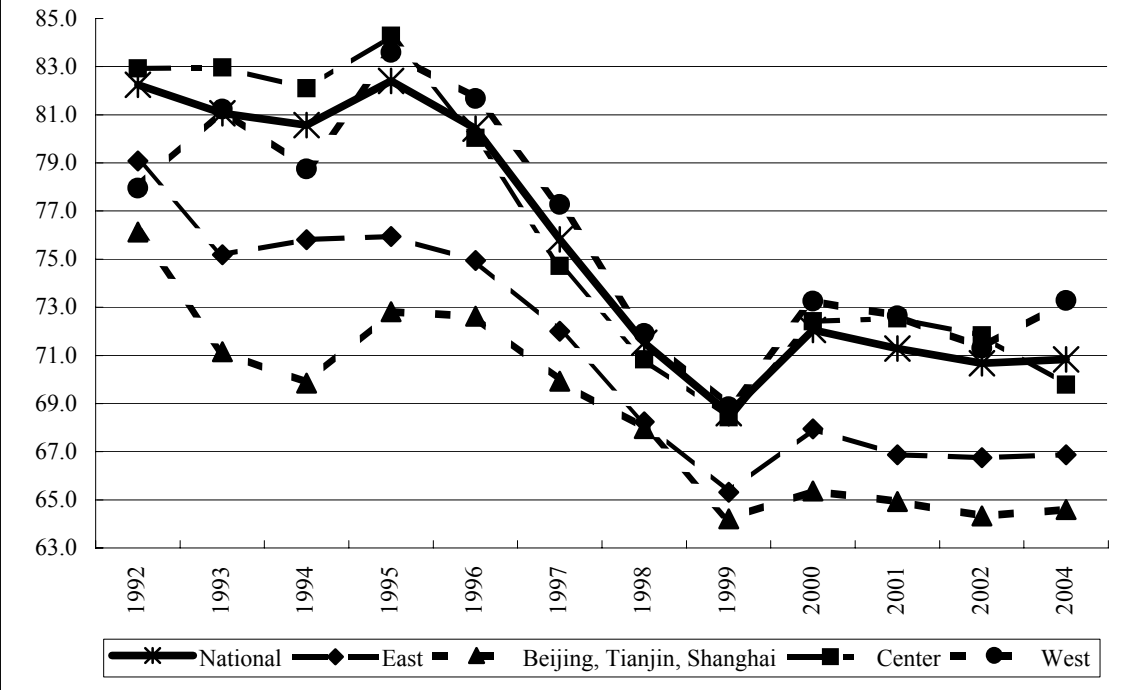
Sources: National Bureau of Statistics (various years); State Statistica Bureau (various years).

**Figure 4: Consumption-Income Ratios for Urban Households by Region**  
(calculated from arithmetic means in current yuan)



Sources: National Bureau of Statistics (2000, 2005a; various years); State Statistica Bureau (various years).

**Figure 5: Consumption-Income Ratios for Rural Households by Region**  
(calculated from arithmetic means in current yuan)



Sources: National Bureau of Statistics (2000, 2005a; various years); State Statistica Bureau (various years).

**Table 4: Distribution of Disposable Income and Consumption among Urban and Rural Households by Income Quintile**

Indicator	Urban Households						Rural		Urban/Rural	
	1988	1993	1998	2000	2002	2004	2002	2004	2002	2004
PER CAPITA DISPOSABLE INCOME (yuan)										
Quintile 1	759	1,525	2,890	3,143	3,029	3,646	857	1,007	3.53	3.62
Quintile 2	985	2,029	4,107	4,624	4,932	6,024	1,548	1,842	3.19	3.27
Quintile 3	1,159	2,440	5,119	5,898	6,657	8,167	2,164	2,578	3.08	3.17
Quintile 4	1,367	2,971	6,371	7,487	8,870	11,051	3,030	3,608	2.93	3.06
Quintile 5	1,847	4,245	9,420	11,373	15,384	20,174	5,896	6,931	2.61	2.91
RATIOS										
Quintile 5/quintile 1	2.43	2.78	3.26	3.62	5.08	5.53	6.88	6.88	0.74	0.80
Quintile 5/quintile 2	1.87	2.09	2.29	2.46	3.12	3.35	3.81	3.76	0.82	0.89
Quintile 5/quintile 3	1.59	1.74	1.84	1.93	2.31	2.47	2.72	2.69	0.85	0.92
Quintile 5/quintile 4	1.35	1.43	1.48	1.52	1.73	1.83	1.95	1.92	0.89	0.95
Quintile 3/quintile 1	1.53	1.60	1.77	1.88	2.20	2.24	2.52	2.56	0.87	0.87
Quintile 3/quintile 2	1.18	1.20	1.25	1.28	1.35	1.36	1.40	1.40	0.97	0.97
PER CAPITA CONSUMPTION (yuan)										
Quintile 1	735	1,395	2,688	2,908	2,824	3,399	1,006	1,248	2.81	2.72
Quintile 2	931	1,770	3,503	3,948	4,206	5,096	1,310	1,581	3.21	3.22
Quintile 3	1,092	2,056	4,180	4,795	5,453	6,498	1,645	1,951	3.31	3.33
Quintile 4	1,270	2,404	4,981	5,895	6,940	8,346	2,087	2,460	3.33	3.39
Quintile 5	1,655	3,172	6,799	8,176	10,980	13,796	3,500	4,129	3.14	3.34
RATIOS										
Quintile 5/quintile 1	2.25	2.27	2.53	2.81	3.89	4.06	3.48	3.31	1.12	1.23
Quintile 5/quintile 2	1.78	1.79	1.94	2.07	2.61	2.71	2.67	2.61	0.98	1.04
Quintile 5/quintile 3	1.51	1.54	1.63	1.71	2.01	2.12	2.13	2.12	0.95	1.00
Quintile 5/quintile 4	1.30	1.32	1.36	1.39	1.58	1.65	1.68	1.68	0.94	0.98
Quintile 3/quintile 1	1.49	1.47	1.55	1.65	1.93	1.91	1.63	1.56	1.18	1.22
Quintile 3/quintile 2	1.17	1.16	1.19	1.21	1.30	1.28	1.26	1.23	1.03	1.03
CONSUMPTION/DISPOSABLE INCOME RATIOS (percent)										
Quintile 1	97	91	93	93	93	93	117	124	0.79	0.75
Quintile 2	95	87	85	85	85	85	85	86	1.01	0.99
Quintile 3	94	84	82	81	82	80	76	76	1.08	1.05
Quintile 4	93	81	78	79	78	76	69	68	1.14	1.11
Quintile 5	90	75	72	72	71	68	59	60	1.20	1.15

Note: For urban data, quintiles 1 and 5 are estimated as the averages of deciles 1 and 2, and deciles 9 and 10, respectively; disposable income for 1988 and 1993 is estimated as total income in each year times the average ratio of disposable income to total income because revised, consistent data on disposable income are not available before 1997.

Sources: National Bureau of Statistics (various years); State Statistical Bureau (various years)

**Table 5: Distribution of Disposable Income and Consumption among Urban and Rural Households by Income Quintile and Regional Group, 2004**

Indicator	Urban Households				Rural Households			
	East (10 prov.)		Center (8 provinces)	West (12 provinces)	East (6 prov.)		Center (1 province)	West (4 provinces)
	Group Average	Beijing, Shang- hai, Tianjin			Group Average	Beijing, Shang- hai		
PER CAPITA DISPOSABLE INCOME (yuan)								
Quintile 1	4,871	6,422	3,527	3,505	2,115	2,868	1,242	1,034
Quintile 2	7,703	9,736	5,583	5,767	3,673	4,832	2,180	1,642
Quintile 3	10,409	12,834	7,356	7,669	5,025	6,573	2,827	2,150
Quintile 4	14,120	17,097	9,550	9,836	6,705	8,571	3,641	2,807
Quintile 5	24,419	29,186	15,423	15,392	11,779	14,519	5,429	4,482
RATIOS								
Quintile 5/quintile 1	5.01	4.54	4.37	4.39	5.57	5.06	4.37	4.33
Quintile 5/quintile 2	3.17	3.00	2.76	2.67	3.21	3.00	2.49	2.73
Quintile 5/quintile 3	2.35	2.27	2.10	2.01	2.34	2.21	1.92	2.08
Quintile 5/quintile 4	1.73	1.71	1.61	1.56	1.76	1.69	1.49	1.60
Quintile 3/quintile 1	2.14	2.00	2.09	2.19	2.38	2.29	2.28	2.08
Quintile 3/quintile 2	1.35	1.32	1.32	1.33	1.37	1.36	1.30	1.31
PER CAPITA CONSUMPTION (yuan)								
Quintile 1	4,635	6,350	3,171	3,210	2,505	3,351	1,389	1,265
Quintile 2	6,589	8,542	4,600	4,900	3,153	4,297	1,840	1,480
Quintile 3	8,252	10,319	5,707	6,198	3,743	4,855	2,136	1,758
Quintile 4	10,310	12,573	6,974	7,677	4,761	6,337	2,394	2,110
Quintile 5	16,195	19,575	10,213	11,083	7,385	9,781	3,095	2,916
RATIOS								
Quintile 5/quintile 1	3.49	3.08	3.22	3.45	2.95	2.92	2.23	2.31
Quintile 5/quintile 2	2.46	2.29	2.22	2.26	2.34	2.28	1.68	1.97
Quintile 5/quintile 3	1.96	1.90	1.79	1.79	1.97	2.01	1.45	1.66
Quintile 5/quintile 4	1.57	1.56	1.46	1.44	1.55	1.54	1.29	1.38
Quintile 3/quintile 1	1.78	1.63	1.80	1.93	1.49	1.45	1.54	1.39
Quintile 3/quintile 2	1.25	1.21	1.24	1.26	1.19	1.13	1.16	1.19
CONSUMPTION/DISPOSABLE INCOME RATIOS (percent)								
Quintile 1	95	99	90	92	118	117	112	122
Quintile 2	86	88	82	85	86	89	84	90
Quintile 3	79	80	78	81	74	74	76	82
Quintile 4	73	74	73	78	71	74	66	75
Quintile 5	66	67	66	72	63	67	57	65

Note: For urban households the East excludes Hebei. For rural households the East excludes Hainan, Hebei, Liaoning, Shandong, and Tianjin, the Center includes only Jiangxi, and the West includes only Chongqing, Guangxi, Shaanxi, and Sichuan.

Source: National Bureau of Statistics (2005b).

**Table 6: Some Recent Estimates of Trends in Gini Coefficients for China (cost of living differential assumed to be zero unless noted)**

Sources, region, sample	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
ESTIMATES BASED ON THE NBS SURVEYS OF URBAN AND RURAL HOUSEHOLDS																
Chen and Wang (2001), national microdata				0.35		0.39	0.42	0.43	0.42	0.40	0.40	0.40	0.42			
national (cost of living differential=20%)				0.32		0.36	0.39	0.40	0.38	0.37	0.37	0.37	0.39			
urban				0.23		0.24	0.27	0.29	0.28	0.29	0.29	0.30	0.30			
rural				0.30		0.32	0.34	0.34	0.34	0.33	0.33	0.33	0.34			
Han (2004), national microdata		0.34		0.39					0.39	0.38	0.38	0.39	0.40	0.42		
urban	0.20	0.23	0.23	0.23	0.24	0.25	0.27	0.30	0.28	0.28	0.29	0.30	0.29	0.32		
rural	0.30	0.30	0.31	0.31	0.31	0.31	0.33	0.32	0.34	0.32	0.33	0.34	0.34	0.35		
Ravallion and Chen (2004), national microdata	0.32	0.33	0.35	0.35	0.37	0.39	0.42	0.43	0.42	0.40	0.40	0.40	0.42	0.44	0.45	
national (cost of living differential>0%)	0.29	0.30	0.32	0.32	0.33	0.34	0.37	0.38	0.37	0.35	0.35	0.35	0.36	0.38	0.39	
urban	0.20	0.21	0.24	0.23	0.23	0.24	0.27	0.29	0.28	0.29	0.29	0.30	0.30	0.32	0.32	0.33
rural	0.29	0.30	0.31	0.30	0.31	0.32	0.34	0.34	0.34	0.33	0.33	0.33	0.34	0.36	0.36	
Wu and Perloff (2004), national aggregates	0.32	0.34	0.34	0.33	0.35	0.36	0.38	0.38	0.38	0.35	0.38	0.38	0.39	0.41	0.42	
urban	0.19	0.20	0.20	0.20	0.18	0.20	0.22	0.23	0.22	0.22	0.23	0.24	0.25	0.26	0.27	
rural	0.28	0.30	0.31	0.29	0.32	0.32	0.32	0.30	0.34	0.32	0.32	0.32	0.33	0.34	0.34	
ESTIMATES BASED ON THE CASS SURVEYS OF URBAN AND RURAL HOUSEHOLDS IN SELECTED PROVINCES (microdata)																
China Development Research Foundation (2005)		0.38														0.46
urban		0.23									0.29					0.34
rural		0.30									0.33					0.37
Kahn and Riskin (1998)		0.38							0.45							
urban		0.22							0.33							
rural		0.34							0.42							
ESTIMATES BASED ON THE CHNS SURVEYS OF URBAN AND RURAL HOUSEHOLDS IN SELECTED PROVINCES (microdata)																
Benjamin, et al (2005b), national					0.37		0.42				0.40			0.44		
urban					0.29		0.35				0.35			0.38		
rural					0.39		0.43				0.41			0.46		



**Appendix Table 1: Characteristics of Households Covered in the Urban and Rural Surveys (number of households and persons per household)**

Year	Urban Households			Rural Households		
	Number	Average Size	Average Employment	Number	Average Size	Average Employment
1985	24,338	3.89	2.15	66,642	5.12	2.95
1990	35,660	3.50	1.98	66,960	4.80	2.92
1991	36,730	3.43	1.96	67,410	4.71	2.83
1992	36,290	3.37	1.95	67,490	4.67	2.83
1993	35,390	3.31	1.92	67,570	4.59	2.87
1994	34,940	3.28	1.88	67,420	4.54	2.89
1995	35,520	3.23	1.87	67,340	4.48	2.88
1996	36,370	3.20	1.86	67,610	4.42	2.84
1997	37,890	3.19	1.83	67,680	4.35	2.79
1998	39,080	3.16	1.80	68,300	4.30	2.78
1999	40,044	3.14	1.77	67,430	4.25	2.77
2000	42,220	3.13	1.68	68,116	4.20	2.76
2001	43,840	3.10	1.65	68,190	4.15	2.73
2002	45,317	3.04	1.58	68,190	4.13	2.76
2003	48,028	3.01	1.58	68,190	4.10	2.80
2004	50,430	2.98	1.56	68,190	4.08	2.82

Notes: until 2001, the urban household survey covered only non-agricultural households; from 2002, it covers all households; for rural households, size refers to the number of permanent residents per household.

Sources: National Bureau of Statistics (various years); State Statistical Bureau (various years)