

China Regional Disparities

The Causes and Impact of Chinese Regional Inequalities in Income and Well-Being

Albert Keidel*

Senior Associate, Carnegie Endowment for International Peace

www.CarnegieEndowment.org/Keidel

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Summary

Comparison of China's major regions, detailed below, shows that in official GDP per capita terms and for rural income and consumption, disparities appear large. Furthermore, both over 20 years and over the 2000-05 five-year period, Chinese rural income and consumption disparities have increased, as measured by the ratios of per-capita rural household statistics representative for major regions. In other words, regional rural household income and consumption levels in China are diverging (at least through 2005) and have been, whether measured since 1985 or 2000.

Although disparities are growing, the extraordinarily rapid improvement in rural household income and consumption levels in all regions over both longer-term (1985-2005) and more recent (2000-2005) periods is notable. Average annual real growth in rural household income was at least 6.0 percent for all seven regions over the period 1985-2005, and for consumption the corresponding average growth rate was at least 6.5 percent over all regions.

Compared to the most obvious static measure of differences in regional well being, average consumption levels, the sustained speed of improvement in income and consumption in all regions and provinces is a dynamic indicator of well being that argues for less severe regional disparities in well being and weaker divergence in well being from one region to another. In other words, to the degree that well being is more than absolute consumption levels but is linked

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to satisfaction of citizen expectations, comparably rapid increases in static measures arguably convey similar subjective benefits to different regions, despite their persistent gaps by static measures. Giving significant weight to this dynamic indicator of well being must influence the overall evaluation of both the causes and consequences of observed levels and trends in China's inter-regional inequality in recent decades.

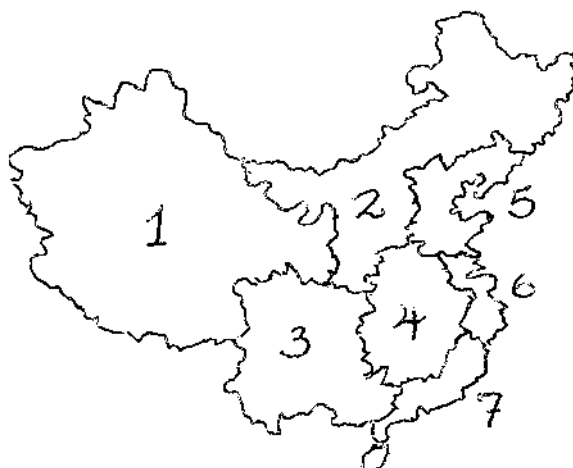
In a third dimension, poverty incidence comparisons between coastal and interior provinces reveal clear differences in well-being in this context, especially when poverty incidence calculations use an appropriate poverty-line standard. Revisions to the World Bank's "dollar-a-day" poverty standard consistent with the December 2007 release of revised Chinese purchasing power parity statistics (World Bank 2007b, 2007c) makes this traditional poverty standard more useful for this purpose than its unrevised predecessor.

Finally, the analysis presented below concludes that the levels and trends in regional inequality are healthy parts of China's successful economic reform program. They furthermore provide essential incentives for voluntary labor migration from low-productivity areas to high-productivity and higher income work opportunities in other regions. The inequality trends also indicate that China's high internal migration period is not over and that equilibrating convergence must be a long time away. In the meantime, China should continue to provide the essential complementary investments and reforms needed to facilitate migration set in motion in part by the very inequalities themselves.

Regional Inequalities

Meaningful analysis of China's regional disparities requires a degree of aggregation over provincial-level entities. China has 31 provincial-level administrative units (hereafter "provinces"), four of which are "municipalities." Three of these municipalities (Beijing, Tianjin,

Map 1. China's Seven Economic Regions and their Constituent Entities



1	2	3	4	5	6	7
Far West	North Hinterland	South Hinterland	Central Core	North Coast	East Coast	South Coast
Xinjiang	Heilongjiang	Sichuan	Henan	Liaoning	Jiangsu	Fujian
Tibet	Jilin	Chongqing	Anhui	Hebei	Shanghai	Guangdong
Qinghai	Inner Mongolia	Guizhou	Jiangxi	Beijing	Zhejiang	Hainan
Gansu	Shanxi	Yunnan	Hubei	Tianjin		
Ningxia	Shaanxi	Guangxi	Hunan	Shandong		

and Shanghai) have limited rural economies, making meaningful comparison with other entities especially difficult. Conversely, a province like Hebei, out of which both Beijing and Tianjin have been carved, has no real major urban area comparable to those of other provinces, undermining meaningful relevant comparisons. Consequently, for this paper, provinces are aggregated – first into “greater” provinces for Hebei, Jiangsu, Sichuan and Guangdong (see note to Table 12 in the appendix) and then for seven regions (see Map 1).

An overview of disparities in GDP per-capita (see Table 1) shows significant inequality between the seven regions as well as between the 26 individual “greater” provinces (see Table 11 in the appendix). The overriding gap is between coastal and interior regions. On the large seven-region level, with all but one region larger than 140 million persons, the highest-to-lowest GDP per capita ratio is over 3½. At the “greater” provincial level, i.e., provinces combined with their

Table 1. Regional Population and GDP Comparisons, 2005

	Population (million)	Total GDP (Bil.US\$*)	GDP Per Capita (US\$*)	GDP Sector Shares (%)		
				Primary	Secondary	Tertiary
China Total	1,308	2,246	1,717	12.5	47.3	40.2
Far West	60	72	1,204	16.9	44.0	39.1
N. Hinterland	160	255	1,594	12.4	50.4	37.2
S. Hinterland	239	244	1,023	19.5	40.5	40.0
Central Core	318	403	1,267	18.0	45.6	36.4
North Coast	229	576	2,516	9.7	50.6	39.7
East Coast	142	499	3,528	6.0	53.8	40.3
South Coast	236	648	2,749	4.8	27.8	23.5

* US\$ figures at 2005 average commercial exchange rate of 8.1917 Yuan/\$.

Source: China National Bureau of Statistics (NBS) 2006 Statistical Yearbook, with calculations

constituent provincial-level municipalities, it is more than 5½ (between Greater Jiangsu and Guizhou).

But at least two factors qualify the usefulness of per-capita GDP comparisons for the purposes of this paper. First, GDP includes investment, which in China is such a high share of GDP and varies so much over time that its usefulness for gauging inequalities in income and well-being is limited. Second, the accuracy of inter-regional comparisons based on GDP per capita statistics is suspect. The denominator, population, used for calculating per-capita statistics, has questionable accuracy due to the reported scale and documented direction of actual migration flows that might not be fully included in official regional population data.

The scale of inter-provincial migration in China is the subject of numerous surveys at all levels, but discussions with specialists in Beijing confirm that there is still considerable disagreement about the overall scale – whether it is 100 million persons working away from home or 150 million or even 200 million.

The definition of what one means by “migrant” is also important. Given the absolute decline in China’s rural population over more than twenty years, amidst resurgence in the natural rural population increase rate, all of what would have been increases in the rural population must now be reported as living in urban areas. One calculation shows that more than half of China’s

current urban residents must originally be in families whose members migrated from rural areas at some point since China’s economic reforms began in 1978—either recently or in the persons of parents or grandparents (Keidel 2007b). In other words, by this calculation, most of today’s urban residents in China are rural in origin. This requires an adjustment in thinking about the urban-rural distinction.

If the scale and meaning of migration in China are open to discussion, the direction is not. Chinese have been moving from interior to coastal provinces in significant numbers. Official census-frame-based survey results to this effect were clear as early as 1990 (Keidel 1996). The one-percent sample survey from the census frame for 2005 shows similar results (see Table 2). It is highly unlikely that the respondents to this survey represent all the “migrants” living in China’s various provinces, because Table 2 shows this figure to amount to only 35 million persons. But the movement is unquestionably from interior to coastal regions. There is movement of migrants in all directions, but on a *net* basis as found in this survey, coastal regions had roughly 24 million persons who had moved from interior regions during the five years through 2005. Consideration of the scale and direction of migration in China must also figure heavily in evaluation of the causes and consequences of China’s regional inequality.

Table 2. Net Permanent Inter-provincial Movement* of Persons, 2000-2005 (millions)

Region of Destination	Region of Origin							Net all by Destination
	Far West	N. Hinterland	S. Hinterland	Central Core	N. Coast	E. Coast	S. Coast	
Far West	0.2	0.0	0.1	0.2	-0.1	-0.1	-0.1	0.0
N. Hinterland	0.0	0.4	0.0	0.1	-1.4	-0.3	-0.4	-2.0
S. Hinterland	-0.1	0.0	0.8	0.1	-0.3	-2.6	-4.8	-7.7
Central Core	-0.2	-0.1	-0.1	0.5	-1.1	-5.7	-6.8	-14.1
N. Coast	0.1	1.4	0.3	1.1	1.5	-0.2	-0.2	2.5
E. Coast	0.1	0.3	2.6	5.7	0.2	1.2	0.2	9.1
S. Coast	0.1	0.4	4.8	6.8	0.2	-0.2	0.5	12.1
Net all by Origin	0.0	2.0	7.7	14.1	-2.5	-9.1	-12.1	**35.0

* The actual statistics record the survey respondent’s current residence and usual residence five years earlier. ** This figure is the sum of all inter-provincial movement. Note: Figures in the diagonal are inter-provincial movements within each region and are arbitrarily presented as positive. Source: NBS, 2005 National 1% Population Sample Survey, with calculations.

One way of avoiding measurement complications due to migration is to make comparisons based on household survey data. Furthermore, because regional inequalities in China across regions are significantly less for urban areas than for rural areas, the clearest regional disparities are those for rural households. Analysis below, therefore, concentrates on inter-regional disparities for rural households.

Table 3. Regional Real Per Capita Rural Income*
(Constant 2000 Yuan)

	1985	1990	1995	2000	2005
China Total	943	1,306	1,700	2,253	3,556
Far West	748	1,027	1,058	1,514	2,410
N. Hinterland	846	1,228	1,405	1,867	3,062
S. Hinterland	743	1,052	1,271	1,733	2,662
Central Core	879	1,141	1,476	2,083	3,218
North Coast	1,004	1,336	1,895	2,613	4,196
East Coast	1,258	2,007	2,940	3,879	6,404
South Coast	1,113	1,764	2,628	3,411	4,901

* Income is "Net" income, or *chun shouru* (纯收入)

Source: NBS household survey data, published in *2006 China Yearbook of Rural Household Survey* (in Chinese), China Statistics Press, 2006

In income terms, rural households in China's coastal regions—especially the East Coast region centered on Shanghai—are far and away better remunerated than those in the interior. By 2005, rural households in the relatively small East Coast region, with total population of 142 million people, had at least double the rural income level of any in interior regions (see Table 3).

Undoubtedly, differences in 2005 regional prices would reduce this difference in real terms. A recent study by China's rural household survey team mad a different but related point, showing that while pay for migrants from the interior is higher on the coast than elsewhere, when living costs are factored in, migrants from the interior make less net income there (NBS 2005).

However, regional price and cost differences can only command limited significance. Price statistics frequently have difficulty accounting for quality differences in services like housing, where valuation of location in relation to amenities is a challenge. Indeed, perceived nominal income disparities can have economic significance in their own right, especially for attracting migrants considering permanent movement. Finally, price differences in China

between regions are highly unlikely to come anything close to the reported differences in household income. The only conclusion to draw is that rural household income disparities between China's regions are large, especially in the coastal-interior dimension.

Table 4. Regional Rural Income Growth* 1980-2005

Ave. annual %	1985	1990	1995	2000	2005	1985-2005
China Total	14.1	6.7	5.4	5.8	9.6	6.9
Far West	n/a	6.5	0.6	7.4	9.7	6.0
N. Hinterland	13.0	7.7	2.7	5.9	10.4	6.6
S. Hinterland	10.7	7.2	3.8	6.4	9.0	6.6
Central Core	13.6	5.3	5.3	7.1	9.1	6.7
North Coast	14.4	5.9	7.2	6.6	9.9	7.4
East Coast	16.7	9.8	7.9	5.7	10.5	8.5
South Coast	12.4	9.6	8.3	5.4	7.5	7.7

* Annual averages - except for 1985-2005, data show averages of real growth over five years, e.g., 1985 is for 1980-85. Source: See Table 3.

Not only are income disparities large, they have been growing larger over time. On average for both 1985-to-2005 and for 2000-to-2005, the regions that were already leading in terms of per-capita rural income at the outset of the period also grew faster in real terms during that period. The rankings for both levels and growth rates are the same, implying divergence (see Tables 3 and 4). What is more, the differences in growth rates are substantial. All of the interior regions sustained average growth between 6.0 and 6.7 percent over the twenty years after 1985 (see Table 4). During this same period, coastal regions averaged rural household real income growth rates between 7.4 and 8.5 percent, a growth gap that is especially large when compounded over twenty years.

Both China's regional rural income disparities and the pace of their increase appear more clearly in log-normal plots of their twenty-year trends (see Figures 1 and 2), for which the slopes of the lines represent growth rates. Figure 1 shows clearly that the highest-income regions in 1985 also grew the fastest on average to 2005.

Figure 2 shows, however, that this diverging path was not at all uniform during the four 5-year sub-periods. Indeed, there were periods of convergence between 1995 and 2000. This short-lived convergence path is also clear from the growth rates in Table 4, which show that for

the five years ending in 2000, the two highest-income regions grew more slowly than all the other regions. Regional rural income levels in the subsequent five-year period, ending in 2005, are also not uniformly divergent, with growth rates for the South Coast in particular failing to recover the way they did in the North and East Coast regions.

These varying patterns afford some clues for later analysis of the causes of China's regional disparities and their trends because of the apparent impact of macroeconomic fluctuations on rural income and consumption (Keidel 2007b). For now, however, it is important to note that the 1990s were more complicated than the overall trends indicate, with relatively poor performances in particular during 1990-1995 for the lower-income regions of the Far West and North Hinterland.

Switching from income to consumption inequality patterns and trends for rural household provides evidence of weaker divergence and of difficulties in the latter 1990s not apparent in

Figure 1. Twenty-year Income Divergence

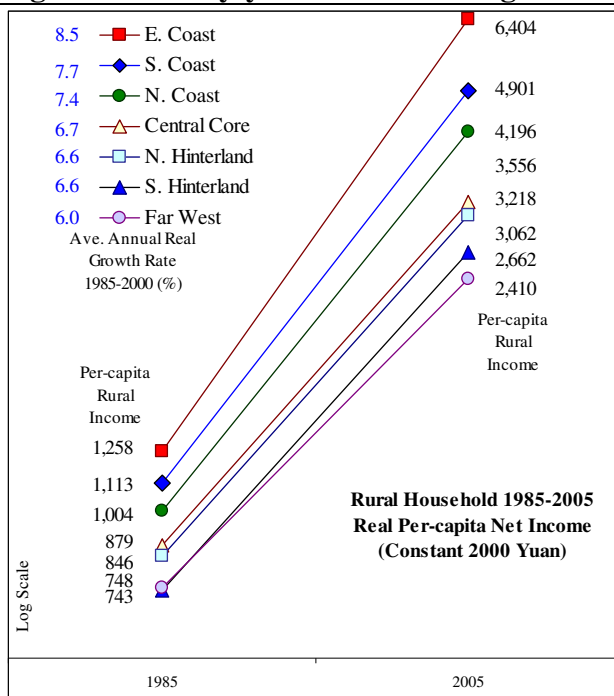
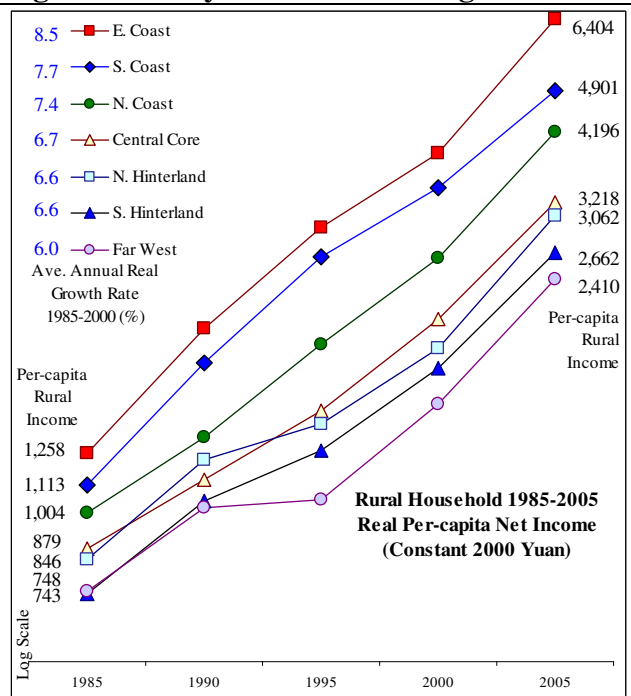


Figure 2. Five-year Income Divergence Paths



* Both income levels and growth are in real terms. Sources: for both figures, see Tables 3 and 4.

income statistics. Overall, regional rural household consumption disparities are in many ways similar to the income patterns already described, except that the disparities and

Table 5. Regional Real Per Capita Rural Consumption*
(Constant 2000 Yuan)

	1985	1990	1995	2000	2005
China Total	753	1,112	1,412	1,670	2,792
Far West	n/a	800	1,007	1,174	2,059
N. Hinterland	675	1,003	1,238	1,384	2,369
S. Hinterland	641	942	1,154	1,374	2,248
Central Core	717	1,016	1,230	1,524	2,495
North Coast	787	1,059	1,407	1,658	2,840
East Coast	1,084	1,734	2,337	2,697	4,749
South Coast	897	1,576	2,211	2,485	3,763

Source: See Table 3.

rates of divergence are somewhat lower, the North Coast region's levels are more like those in interior regions, and the 5-year growth patterns show substantially more difficulties for all regions in the latter half of the 1990s.

Despite the less dramatic disparities and speeds of divergence, the rankings of the regions are, not surprisingly, the same as those for income. The East Coast and South Coast have average levels of rural household consumption too much higher than those in other regions to be accounted for by regional price differences (see Table 5). Furthermore, even though the North Coast's household consumption levels are much closer to levels in the interior, they are still higher, so that as a general conclusion the data show that all coastal regions enjoy rural household consumption levels higher than those in the interior.

The striking pattern in regional rural household consumption, however, is for growth rates (see Table 6). In particular,

while on average over 20 years real consumption growth rates are highest on the coast, confirming some degree of long-term divergence, the 1990s exhibit

Table 6. Rural Consumption Growth* 1980-2005

Ave. annual %	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	1985-2005
China Total	n/a	8.1	4.9	3.4	10.8	6.8
Far West	n/a	6.6	4.7	3.1	11.9	6.5
N. Hinterland	10.8	8.2	4.3	2.3	11.4	6.5
S. Hinterland	11.0	8.0	4.1	3.6	10.3	6.5
Central Core	12.1	7.2	3.9	4.4	10.4	6.4
North Coast	14.0	6.1	5.9	3.3	11.4	6.6
East Coast	16.2	9.8	6.1	2.9	12.0	7.7
South Coast	11.7	11.9	7.0	2.4	8.7	7.4

* Annual averages; except for 1985-2005, data show averages of real growth over five years, e.g., 1985 is for 1980-85. Source: See Table 3.

Figure 3. Rural Consumption* Divergence

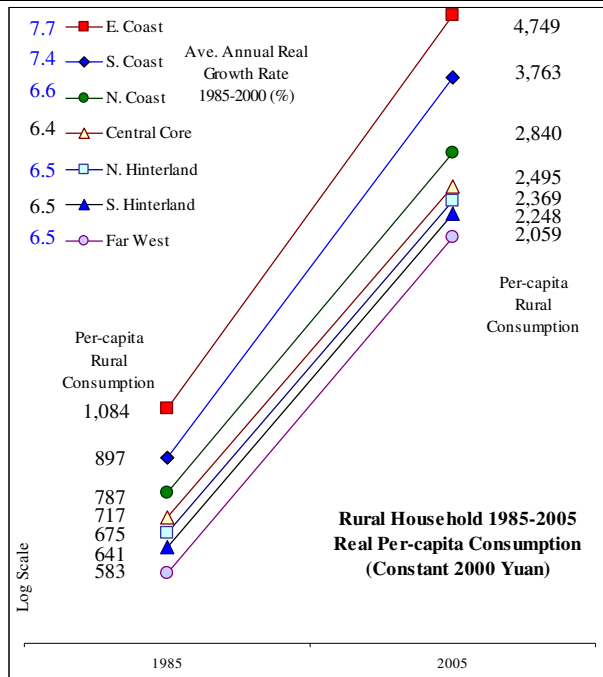
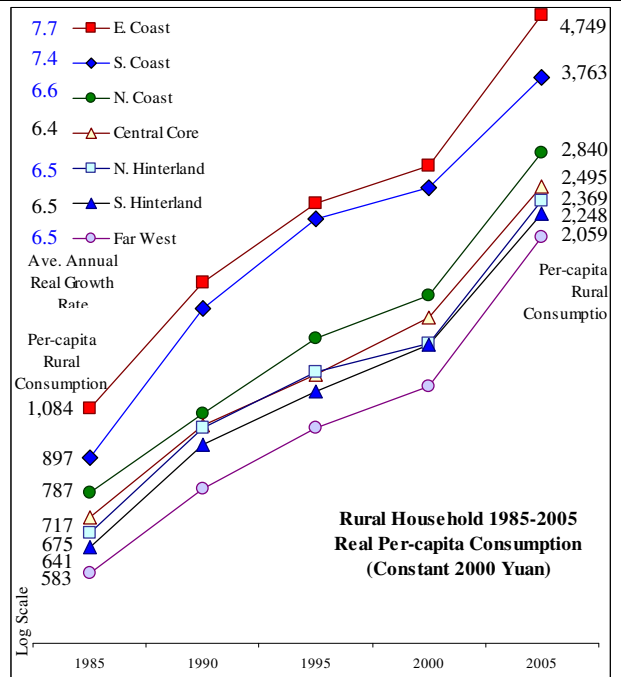


Figure 4. Consumption Divergence Paths



* Both consumption levels and growth are in real terms. Sources: for both figures, see Tables 3 and 4.

dramatic slowing in the interior during the first half of the decade and in all regions during the second half. Secondly, while all regions recovered rapid growth of rural consumption during 2000-2005, recovery in the South Coast region was weaker, while growth in the interior basically matched rates in the North Coast and East Coast regions.

The levels, trends and variations in growth rates for household consumption by regions are clearest in Figures 3 and 4. Long-term divergence is less than for income, and in the period 2000-2005, except for the South Coast, there is essentially neither divergence nor convergence.

Considering both income and consumption, however, real growth rates are so high, both over twenty years and for the most recent five-year period, that issues of convergence or divergence are less important than they otherwise would be. All of rural China appears to have improved dramatically its well being, as measured by consumption, since economic reforms in the early 1980s broke up Maoist-era communes in favor of family farming.

These data for rural household income and consumption disparities raise questions about the usefulness of basing inequality and poverty analysis on consumption in countries where there are rapid changes over time in

Table 7. Regional Rural Household Savings Rates , 1980-2005

	1980	1985	1990	1995	2000	2005
China Total #1	n/a	20.2	14.8	16.9	25.9	21.5
China Total #2*	n/a	16.5	13.6	12.7	22.6	17.1
Far West	n/a	22.2	22.1	4.8	22.5	14.5
N. Hinterland	11.9	20.2	18.4	11.9	25.9	22.6
S. Hinterland	14.8	13.7	10.5	9.2	20.7	15.5
Central Core	12.9	18.5	11.0	16.7	26.8	22.4
North Coast	20.5	21.7	20.7	25.7	36.5	32.3
East Coast	12.1	13.8	13.6	20.5	30.5	25.8
South Coast	16.7	19.4	10.7	15.9	27.1	23.2

* Two different national savings rate calculations give substantially different answers. Total #1 is the ratio of national total rural household savings to national total rural household income; it gives greater weight to regional savings rates in the highest-income regions; Total #2 is a population-weighted average of individual provincial savings rates and hence is a better average of nationwide household savings *behavior* patterns. Sources: See Table 3.

household savings rates. Indeed, these data show just such changes and interregional differences for all of China's regions since the 1980s. Table 7 shows the decline in savings rates from the early 1980s to the early 1990s (from the period ending in 1985 to that ending in 1995).

Nationwide, the population-weighted average of provincial savings rates (Total #2 in Table 7) dropped from an average of roughly 17 percent in 1980-85 to under 13 percent in 1990-95. But the decline was especially sharp in the deep interior—the Hinterland and Far West regions—while savings rates actually increased in coastal provinces during 1990-95.

Under such circumstances, how useful is it to compare household well-being based in consumption—when consumption levels may be maintained under income stress? Conversely, when savings rates soar, as they did for China's rural households in the latter 1990s (1995-2000), are resulting lower-than-otherwise consumption levels an accurate measure of the change in relative well-being? This may be the case, if higher savings rates resulted from a sudden increase in uncertainty over costs of education, healthcare and other necessities and such anxieties are considered important. In general, however, when savings rates differ so much over time and

between regions for the same period, such patterns introduce doubts about interpretations of interregional gaps in household consumption and their trends over time.

A final consideration regarding regional inequality is the incidence of poverty in different regions, and in particular differences in the incidence of poverty in coastal and interior areas. Comparisons between the seven aggregated regions introduced earlier are beyond the scope of this research, in part because not all provinces publish household income size distribution statistics. Comparisons for five representative provinces, however, illustrate both the level of differences and the importance of using a relevant poverty line for measuring inequality and informing policy making.

In December 2007 the World Bank's released revised purchasing power parity (PPP) conversion factors for the world, including China (World Bank 2007b and 2007c). An appropriate poverty line for regional comparisons within China is potentially one of three choices: the domestic Chinese poverty line, the newly revised PPP one-dollar-a-day poverty line, and the newly revised two-dollar-a-day line. These three poverty line standards for 2005, along with the old dollar-a-day poverty line for comparison, are presented in Table 8. Analysis below shows that of the three, the revised one-dollar-a-day standard is best.

Traditionally, The World Bank uses the dollar-a-day standard to measure poverty by a consumption measure, estimating the number of persons with consumption expenditures below the daily PPP poverty line. China, however, has not made consumption size distribution data available for analysis by the general research public. China has allowed the World Bank to post on its web site a statistical query facility called PovCal.net, to allow approximation of China's

Table 8. 2005 China Poverty Lines

(Annual levels)	US\$*	Yuan*
Chinese Poverty Line	83	683
Old PPP \$1/day Line	117	955
New PPP \$1/day Line	201	1,649
New PPP \$2/day Line	403	3,298

* US\$ at 2005 average commercial exchange rate; Yuan are 2005 yuan.

Sources: World Bank 2007a, 2007b, NBS 2007, with calculations

Table 9. Income Poverty Comparisons, Selected Chinese Provinces, 2005 (% of rural population)

	Jiangsu	Liaoning	Hunan	Sichuan	Shaanxi	Total*	All China*
Chinese Poverty Line	0.7	4.2	1.1	7.6	5.6	4.2	2.9
Old PPP \$1/day Line	1.8	5.9	4.8	13.4	11.7	8.2	4.0
New PPP \$1/day Line	6.1	18.1	14.9	28.9	45.1	22.1	13.7
New PPP \$2/day Line	33.4	55.4	59.7	75.8	87.6	63.1	47.1

* "Total" is for the five provinces; "All China" is for China's 2005 rural population

Sources: NBS 2006 Provincial yearbooks for each province, NBS China Statistical Yearbook 2007, Dikhanov 1999, and calculations. Note: Results are rough approximations because of the likelihood that PPP price comparisons for China as a whole are not accurately representative of price comparisons and income weights of poor household budget patterns. Nevertheless, the general orders of magnitude are almost certain to reflect actual provincial poverty differences.

consumption distribution for the national rural population. Using this facility and based on estimates of the new PPP dollar-a-day poverty standard consistent with the new World Bank PPP statistics, China's consumption-based dollar-a-day poverty incidence is roughly 300 million rural persons, compared to roughly 100 million using the old dollar-a-day standard (Keidel 2007c).

There are, however, no available consumption-based distribution data for individual provinces, limiting poverty comparisons to those based on distribution data for income rather than consumption. Given China's relatively high household savings rates, most households have significantly higher incomes than consumption levels, so many fewer households fall under an income dollar-a-day standard than under a dollar-a-day consumption standard. For China as a whole, the difference for 2005 is roughly between 300 million poor by a consumption dollar-a-day poverty standard and 100 million poor by an income dollar-a-day standard. Nevertheless, for measuring differences in poverty between provinces, and between coastal and interior regions, the income poverty standard is instructive.

Table 9 shows poverty incidence comparisons between five provinces for four different poverty-line standards. Jiangsu and Liaoning are both coastal provinces, but while Jiangsu is part of greater Shanghai and the dynamic East Coast region, Liaoning is part of Manchuria and has a significant portion of its rural population living on difficult interior terrains with long winters. Hunan is a quintessential grain-base province in China's Central Core region, while Sichuan

(representing the South Hinterland region) and Shaanxi (in the North Hinterland region) are even more isolated. It is clear that the new dollar-a-day poverty standard reveals higher poverty levels across the board, but the percentage-point gap it reveals between Jiangsu and all the other provinces shown is substantial. This poverty-based measure of regional disparities is arguably the most accurate gauge of inter-regional differences in well-being, because regardless of the speed of improvement in income and consumption in a poorer region, the scale of those left in absolute poverty is an irreducible index of the degree to which the most basic household expectations remain unmet.

Table 10 presents the same comparisons of provincial poverty in terms of millions of rural citizens. This head-count comparison supports conclusions similar to the incidence data in Table 9 – the thriving coastal provinces, represented by Jiangsu, have substantially lower numbers of poor people, especially by the new dollar-a-day measure. It is important to emphasize, therefore, that the choice of an appropriate poverty-line standard is crucial for using poverty data to assess inter-regional differences in well being. Too high a poverty line, like the new two-dollar-a-day standard, tends to hide meaningful interregional disparities. These points are reinforced by review of the different provincial distributions presented in Figure 5.

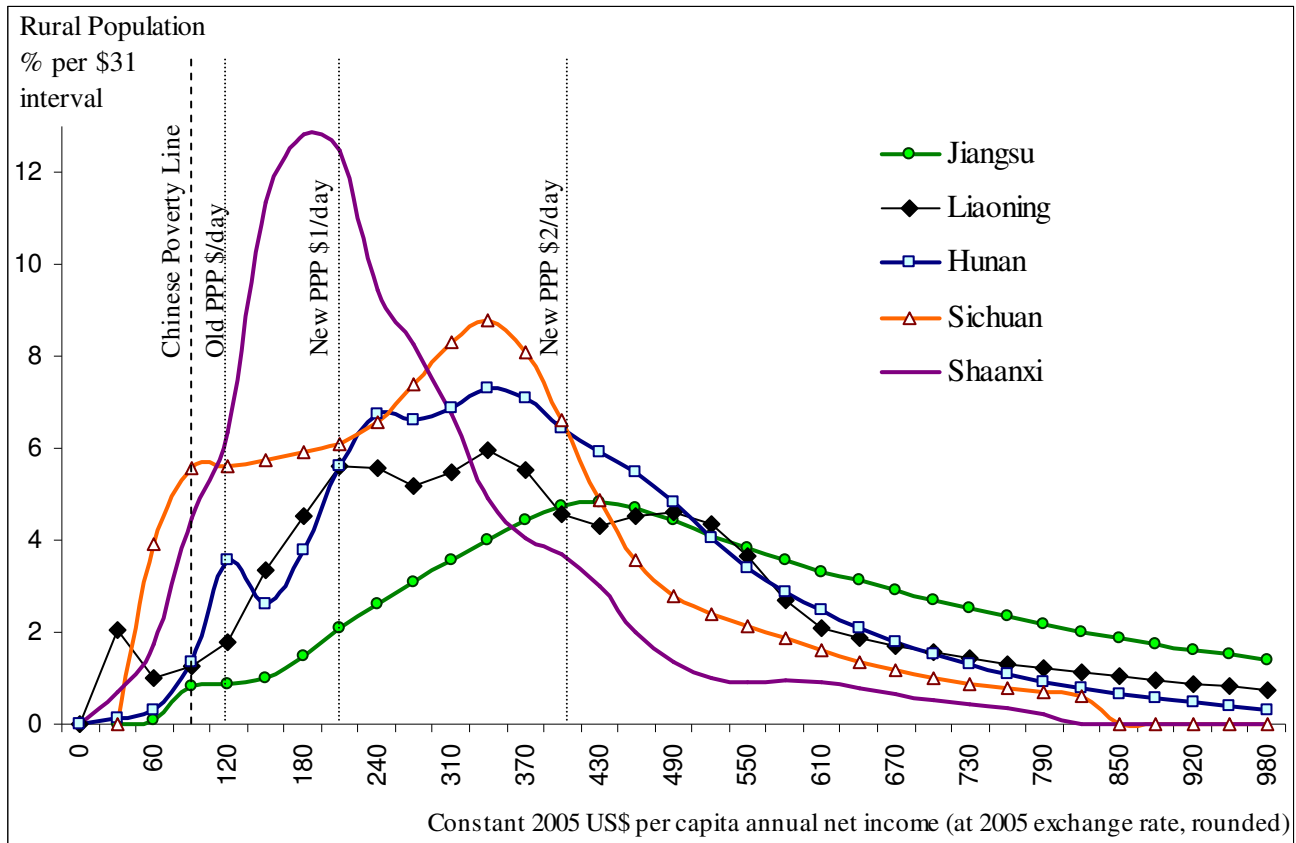
This concludes the brief introduction to regional inequality in rural China. To summarize, disparities are large, with rural household income and consumption on average much higher in coastal provinces than in the interior. What is more, the gap is widening—especially for

Table 10. Income Poverty Comparisons, Selected Chinese Provinces, 2005 (million rural persons)

	Jiangsu	Liaoning	Hunan	Sichuan	Shaanxi	Total*	All China*
Chinese Poverty Line	0.3	0.9	0.5	5.0	1.3	8.0	21.8
Old PPP \$1/day Line	0.7	1.3	2.0	8.9	2.7	15.6	29.9
New PPP \$1/day Line	2.3	3.9	6.3	19.1	10.5	42.2	103.0
New PPP \$2/day Line	12.3	12.0	25.3	50.2	20.5	120.3	354.0
Rural Population	37.0	21.6	42.4	66.3	23.4	190.6	751.2

Sources and notes: see Table 9.

Figure 5. Rural Income Poverty Incidence for selected Provinces, 2005



Note: for discussion of the “New PPP \$1/day and \$2/day poverty lines, see note for Figure 9. Sources: see Table 10.

incomes. These gaps in income and well being, however, lose significance for general well-being comparisons because of the sustained high rates of improvement in all regions over twenty years. The more serious disparity is arguably in the incidence of absolute poverty, especially when measured with a policy line appropriate for China in the first decade of the twenty-first century.

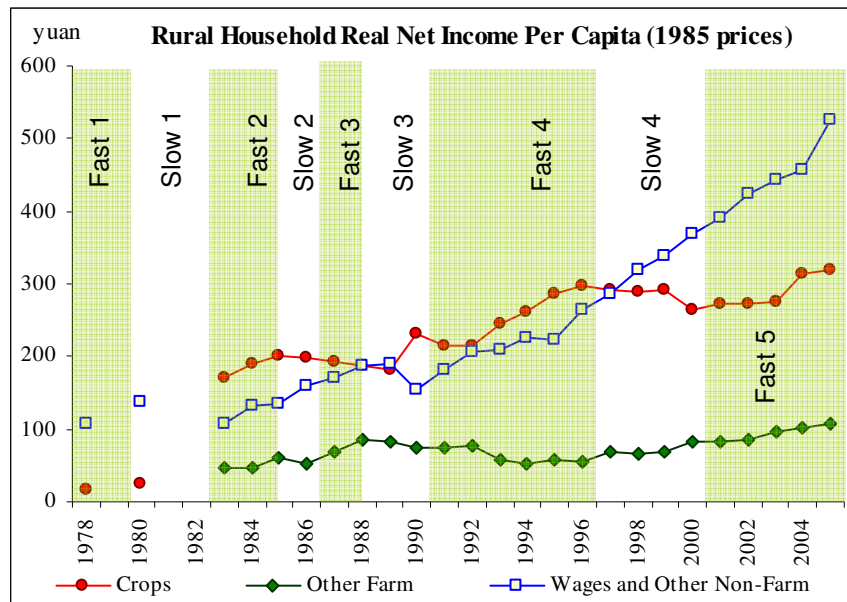
Causes and Impact of Regional Inequality

The causes and impact of regional inequality in China are interrelated. These assessments both depend on fundamental perspectives and overall findings. Are the degrees and trends of regional inequality natural and healthy consequences of successful rapid development? Or are they a measure of inadequate government policies? Has Beijing, through errors of commission or omission, unfairly treated one set of regions, the interior, as a backwater while concentrating on

supporting coastal regions to “get rich first?” Or was the initial priority given to coastal development justified by its natural advantages for global transport and communication?

More fundamentally, the choice of preferred policies and ultimate appraisal must oscillate between considering inequalities as measures of relative poverty or as indicators of useful incentives for voluntary labor force movement to more productive locations and vocations. The critical factor is whether other matching and facilitating policies and achievements are in place to support inequality’s role for enhancing labor-force mobility to higher productivity pursuits. If an economy has failed to create large numbers of better-paying jobs in emerging centers of modern employment, and if it lacks the transport, educational, and infrastructural supports for such labor-force transformations, then regional inequalities appear as debilitating shortcomings. Migration resulting from regional inequalities in such failed settings might be seen as dysfunctional and

Figure 6. Rural Income – Farm and Non-farm Components



* Note: “Fast” and “Slow” panels identify periods of fast and slow GDP growth. Before 1983, rural China was organized in communes, where farm and non-farm labor were mostly paid as wages. Hence, statistics for these years are not comparable with survey data from the family farming era beginning in 1983. Also, crop output income was unusually high in 1990 because of excellent weather, followed by drought in 1991.

Source: Keidel (2007), with data originally from National Bureau of Statistics and Ministry of Agriculture, rural household survey reports, various years.

used as justification for purely poverty alleviating transfers to poorer regions.

If however, an economy has found a successful formula for sustained rapid growth generating well-paid employment expansion in modern centers located at transport and communication hubs, then regional inequalities between traditional farming areas and such hubs play an essential role in raising labor productivity by encouraging voluntary movement of qualified labor. An important corollary is that such an economy must at the same time have successfully financed and accomplished a range of public investments complementing the inequality-born incentive to migrate.

This latter scenario, of significant regional inequality matched by rapid job creation and speedy expansion of complementary public investments, describes China's situation in recent decades. GDP growth has averaged nearly 10 percent in real terms since 1985. As shown in Table 1, this output is disproportionately concentrated in coastal regions, where industrial value added is also a significantly larger share of output. Similarly, the rapid growth in both rural incomes and consumption levels in all regions of China supports the hypothesis that sustained growth in rural well-being has been transmitted nationwide. Household statistics on the rapidly increasing share of rural income from non-farm sources, including remittances from migrant family members, also supports this conclusion (see Figure 6).

One of the most vital complementary factors enhancing a positive interpretation of China's regional inequalities is the Chinese success in sustained financing for infrastructure and other critical public investments. The expansion of limited access highways, ports, airports, mass transit systems, urban water and sewer, and other physical public investments has been extraordinarily rapid since the 1980s, made possible by China's well-functioning financial system—which is particularly suited to the financial requirements of an economic transition such

as China's. China has a successfully operating dual-track financial sector that introduces reforms in its severely immature market-based financial institutions while simultaneously improving its large scale directed-credit system allocating major portions of bank and postal savings to public investments such as infrastructure (see Keidel 2007a).

Other public investments similarly support productivity-enhancing labor-force restructuring—most importantly, education. Compulsory 9-grades of education for all children, rural and urban, boy and girl, has been implemented nationwide since the latter 1990s. In another dimension, household registration reforms are dismantling the residency barriers facing rural persons moving to towns. In many cities these reforms have allowed rural residents with an urban job not only to shift their administrative registration but also to bring their families to cities with them. Previously, urban schooling was not available for children of rural migrants.

The fact that incomes and consumption are increasing rapidly in all regions implies that some equilibrating forces are at work eroding disparities as they appear. These take the form of investment flows within and to poor regions as well as movements of labor out of poor regions to new jobs in better-off locations. At the same time, to the degree that divergence continues, as the data show it does, growth and job creation in coastal regions are still increasing at rates too fast for migration and countervailing investments to eliminate differences. If anything, this state of affairs indicates that regional inequalities may not be high enough to meet the needs of labor-force restructuring.

Indeed, this issue of how attractive coastal jobs are to interior workers touches on the controversy about whether China's surplus rural labor supply will be "drying up" sometime soon (see Cai 2007). Reports of shortages of migrant labor in southern China have appeared in western mass media (see, *inter alia*, Barboza 2006). The implication is that the impact of

regional inequality patterns and trends is that wages will have to rise in coastal regions. Hence, it is not that diverging regional disparities are continuing to underpin low-cost Chinese manufacturing. Instead, the rapid pace of improvements in rural household circumstances in interior regions, despite a mild degree of continuing divergence, is forcing wage and cost increases on the coast.

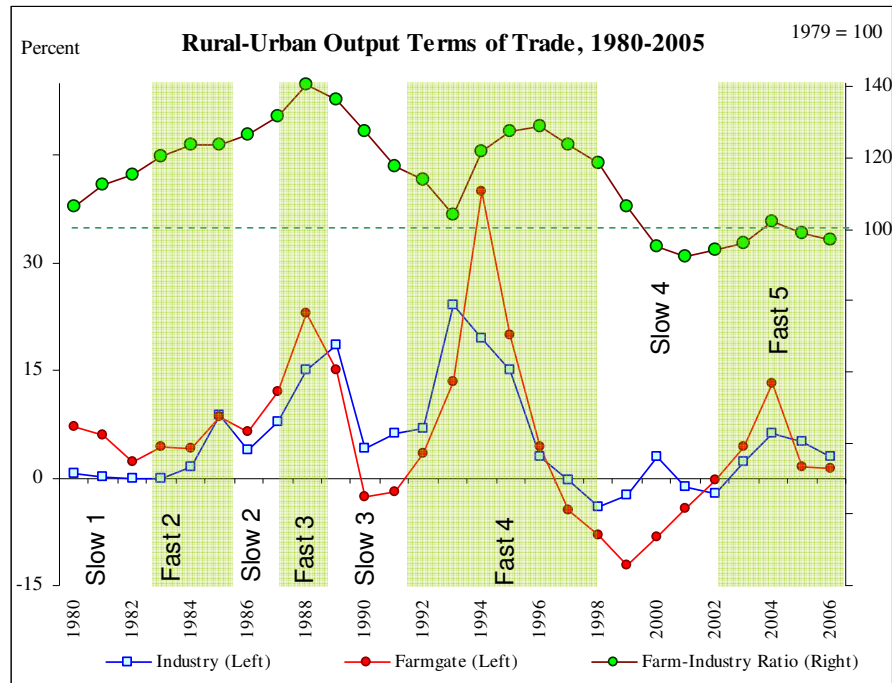
This combination of mild rural income regional divergence and labor market tightening does not mean that migration has equilibrated regional market differences. On the contrary, continued divergence means that better income-earning opportunities continue to strengthen on the coast, so that as incomes and well-being improve nationwide, the movement to the coast will continue. Will this push up China's cost of labor and make its exports less competitive, for example? Probably not, because so many labor-saving techniques are still available for Chinese manufacturers to implement. What is more, to the degree that higher wages are accompanied by improved skill levels and discipline, China will be able to move up the product sophistication scale to make more components currently imported and more products currently produced by higher per-capita-GDP competitors.

In considering the causes of China's regional inequalities, it is important to note the impact of specific economic policies in the 1990s that in fact made disparities larger than they otherwise would have been and sped up divergence in these years more than was necessary. These policies help explain the obvious difficulties for interior regions apparent in Figures 2 and 4.

In a nutshell, to fight inflation that had become quite serious by the middle 1990s, Beijing in 1996 implemented a special "responsibility system" to encourage farmers to plant grain and help bring down food rice inflation. The policy was too successful, however, and farm prices

suffered for many years, causing rural household consumption to decline absolutely for three years, 1997, 1998 and 1999. This is just one instance of the strong fluctuations in rural pricing during periods of high and low

Figure 7. Rural-Urban Price Fluctuations & Terms of Trade



* Note: “Slow” and “Fast” refer to periods of relatively slow and fast GDP growth. Industry and farm-gate price indices are deflators implicit in the respective GDP sector real and nominal growth rates. Source: Keidel 2007b, data from National Bureau of Statistics GDP production series.

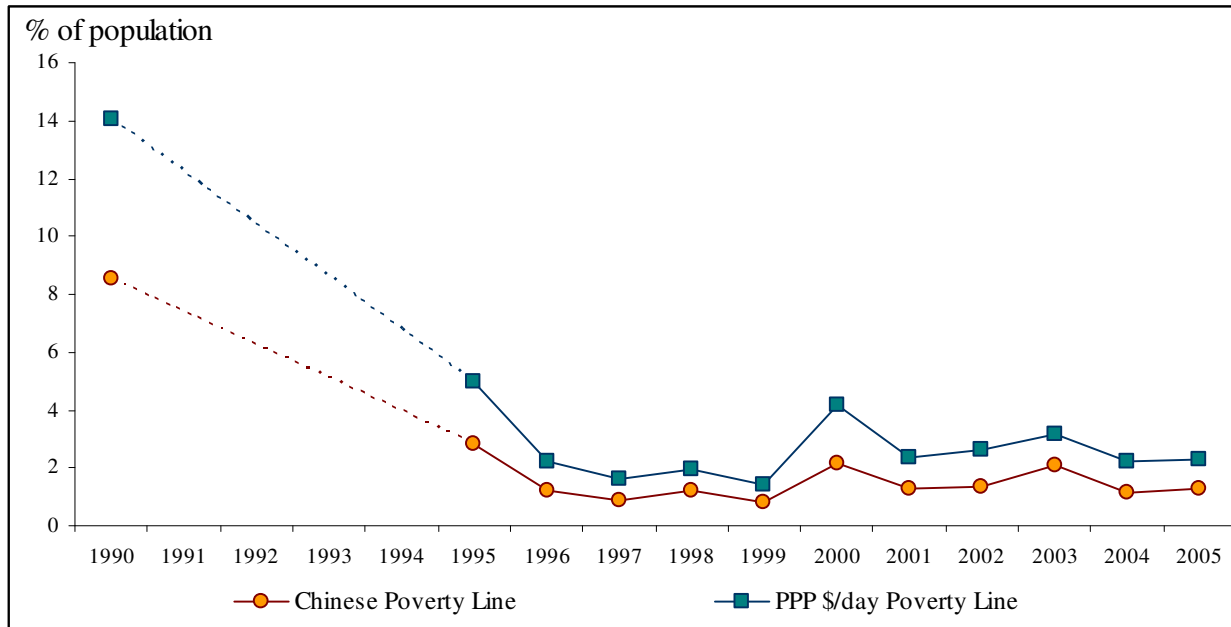
inflation matching
China’s cyclical
macroeconomic

experience since reforms began in 1978 (see Figure 7).

The impact of price movements on real rural income and consumption worked in two ways in the 1990s. First, in the inflationary early years, farm-gate prices rose faster than industrial prices, while in deflationary periods they slowed more sharply than industrial prices. Hence, terms of trade fluctuations for rural areas were severe. Both halves of the 1990s experienced several difficult years for farmers. Regionally, these factors were felt most in areas that relied more on agriculture—that is, the interior regions.

In most general terms, the way that Beijing has managed its macroeconomic fluctuations since the early 1980s, with delays in suppressing inflationary outbreaks and then harsh anti-inflation measures targeting farmers, repeatedly undermined incomes and well-being in rural

Figure 8. Hunan Province Income Poverty Incidence by Traditional* Poverty Lines, 1990-2005



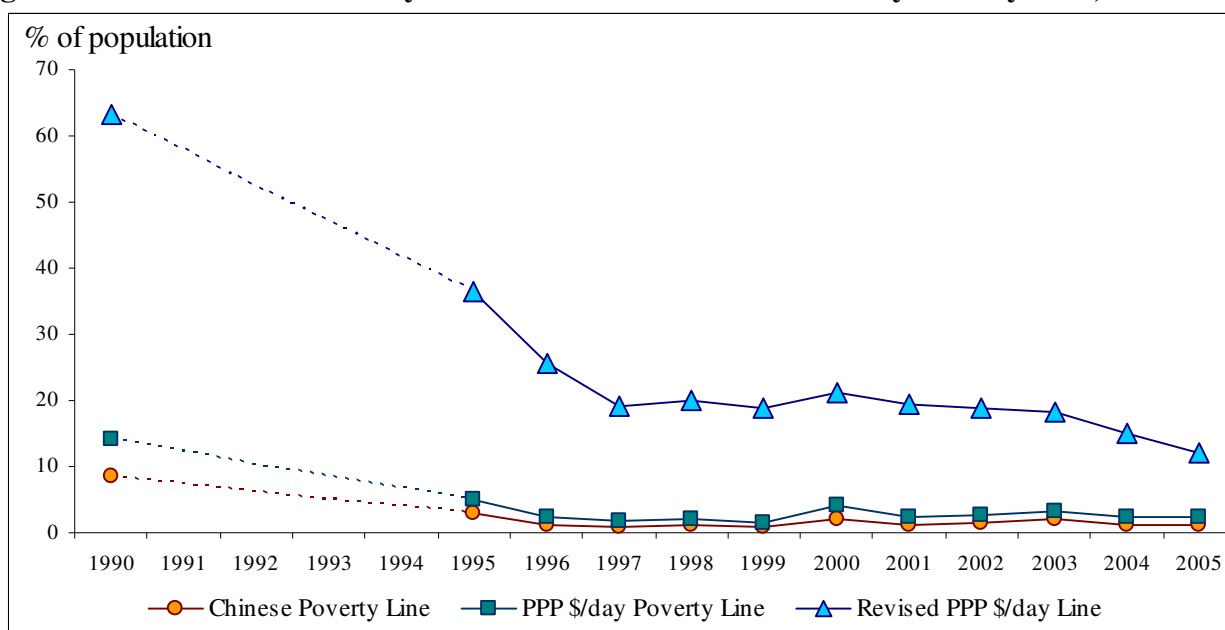
* “Traditional” refers to China’s domestic poverty line and the “old” World Bank PPP dollar-a-day poverty standard, revised in December 2007. See Table 8 and related discussion in the text.

Sources: NBS, [Hunan Statistical Yearbook](#), various issues and Dikhanov 1999, with calculations.

areas (Keidel 2007b). The regional income and consumption patterns presented in Tables 3 through 6, and especially the fluctuations in the 1990s, do not match perfectly the cyclical variations shown in Figure 7, but the correspondence is close enough to indicate government policy as one important cause of the increases in divergence observed in the early 1990s as well as the slowing in consumption gains and the rising savings rates in the latter 1990s.

These same government policies in the latter 1990s, pushing up grain supplies and pushing down prices, also arguably affected the pace of rural poverty reduction in interior regions where grain output is important. This paper draft can only offer one illustration to test this hypothesis—income distribution in Hunan Province. Figure 8 shows that by standard poverty line measures—that is China’s official poverty line and the World Bank dollar-per-day line—applied to income, progress in poverty reduction stopped beginning in 1997 and actually worsened beginning in 2000. The small percentage of the population below these two poverty lines, however, makes it difficult to see if poverty reduction success ever resumed.

Figure 9. Hunan Income Poverty Incidence with Revised* PPP \$/day Poverty Line, 1990-2005



* “Revised” PPP dollar-a-day poverty standard refers to a higher Chinese yuan denominated poverty line consistent with the new (and still preliminary) World Bank PPP statistics for China released in December 2007 and assumptions about its likely adjustment before its base year of 2005. Sources: NBS, [Hunan Statistical Yearbook](#), various issues, World Bank 2007a, 2007b, and Dikhanov 1999, with calculations.

Using the revised dollar-per-day line introduced earlier in Table 8 and described in the related text, it is clear that poverty reduction in Hunan resumed again in 2003, when grain prices finally completed their recovery (see Figure 9 to view this recovery). But by this measure also, poverty levels remained stable from 1997 to 2001, declining only slightly to 2003. These results, summarized in Figure 9, emphasize that assessing inter-regional inequality as differences in the incidence of poverty depends critically on the choice of poverty line. China’s traditional poverty line, originally prepared for identifying poor counties in the 1980s, appears to have lost its relevance for poverty-reduction policy making that reflects interregional poverty differences.

Finally, it is also important to note that timely government policy intervention appears to have reversed what looked like serious divergence between the Far West region and the rest of the economy in the early 1990s. Table 4’s data on regional income growth shows that income

levels on average for the whole Far West region essentially stagnated, averaging 0.6 percent, during 1990-1995. These years provide the single clearest example of income divergence.

Beijing's policy response to this obvious hardship in the Far West was to implement a major "Go West" campaign of public investments for the Far West. The success of the "Go West" program in creating construction jobs and stimulating economic activity seems to be reflected in the recovery of Far West regional income growth in the subsequent 1995-2000 period.

This completes the paper's discussion of the causes and impact of regional inequality in China. Inequality levels and trends over time are arguably signs of a successful economic development strategy. At the same time, regional inequalities, like other inequalities, arguably make an important contribution to development success by stimulating voluntary migration to higher productivity and better-paying employment.

Statistical Appendix

Table 11 – Regional Population and GDP Comparisons, 2005

	Population (million)	Total GDP (Bil.US\$*)	Per capita GDP (\$)	Sector Shares (%)		
				Primary	Secondary	Tertiary
China Total	1,308	2,246	1,717	12.5	47.3	40.2
Far West	60	72	1,204	16.9	44.0	39.1
Xinjiang	20	32	1,582	19.6	44.7	35.7
Tibet	3	3	1,107	19.1	25.3	55.6
Qinghai	5	7	1,221	12.0	48.7	39.3
Gansu	26	24	910	15.9	43.4	40.7
Ningxia	6	7	1,241	11.9	46.4	41.7
N. Hinterland	160	255	1,594	12.4	50.4	37.2
Heilongjiang	38	67	1,761	12.4	53.9	33.7
Jilin	27	44	1,627	17.3	43.6	39.1
Inner Mongolia	24	48	1,993	15.1	45.5	39.4
Shanxi	34	51	1,521	6.3	56.3	37.4
Shaanxi	37	45	1,206	11.9	50.3	37.8
S. Hinterland	239	244	1,023	19.5	40.5	40.0
Greater Sichuan	110	128	1,159	18.6	41.4	40.0
Guizhou	37	24	648	18.6	41.8	39.6
Yunnan	45	42	953	19.3	41.2	39.5
Guangxi	47	50	1,068	22.4	37.1	40.5
Central Core	318	403	1,267	18.0	45.6	36.4
Henan	94	129	1,378	17.9	52.1	30.0
Anhui	61	66	1,072	18.0	41.3	40.7
Jiangxi	43	50	1,149	17.9	47.3	34.8
Hubei	57	80	1,394	16.6	43.1	40.3
Hunan	63	79	1,257	19.6	39.9	40.5
North Coast	229	576	2,516	9.7	50.6	39.7
Liaoning	42	98	2,316	11.0	49.4	39.6
Greater Hebei	94	252	2,677	8.3	45.0	46.7
Shandong	92	226	2,444	10.6	57.4	32.0
East Coast	142	499	3,528	6.0	53.8	40.3
Greater Jiangsu	93	335	3,623	5.6	53.9	40.4
Zhejiang	49	164	3,349	6.6	53.4	40.0
South Coast	236	648	2,749	8.6	49.5	41.9
Fujian	35	80	2,268	12.8	48.7	38.5
Greater Guangdong	100	284	2,833	7.4	49.7	42.9

* US\$ figures at 2005 average commercial exchange rate of 8.1917 Yuan/\$.

Source: China National Bureau of Statistics (NBS) 2006 Statistical Yearbook, with calculations

Table 12. “Greater” Provincial Real Rural Household Per-capita Income Levels, 1980-2005

2000 Constant Yuan	1980	1985	1990	1995	2000	2005
China Total	488	943	1,306	1,700	2,253	3,556
Far West	<i>n/a</i>	748	1,027	1,058	1,514	2,410
Xinjiang	505	935	1,300	1,224	1,618	2,712
Tibet	<i>n/a</i>	837	1,236	1,293	1,331	2,270
Qinghai	<i>n/a</i>	814	1,065	1,110	1,491	2,351
Gansu	391	605	820	948	1,429	2,163
Ningxia	455	762	1,100	1,076	1,724	2,741
N. Hinterland	459	846	1,228	1,405	1,867	3,062
Heilongjiang	524	943	1,446	1,903	2,148	3,519
Jilin	603	981	1,529	1,734	2,023	3,566
Inner Mongolia	463	855	1,155	1,302	2,038	3,265
Shanxi	398	850	1,148	1,302	1,906	3,158
Shaanxi	364	700	1,010	1,037	1,444	2,242
S. Hinterland	447	743	1,052	1,271	1,733	2,662
Greater Sichuan	480	747	1,061	1,248	1,901	3,064
Guizhou	412	683	828	1,171	1,374	2,051
Yunnan	383	802	1,029	1,089	1,479	2,231
Guangxi	443	719	1,217	1,558	1,865	2,725
Central Core	464	879	1,141	1,476	2,083	3,218
Henan	410	781	1,003	1,327	1,986	3,136
Anhui	472	876	1,026	1,404	1,935	2,885
Jiangxi	462	895	1,274	1,656	2,135	3,418
Hubei	434	999	1,276	1,628	2,269	3,386
Hunan	561	938	1,264	1,536	2,197	3,406
North Coast	513	1,004	1,336	1,895	2,613	4,196
Liaoning	697	1,110	1,591	1,892	2,356	4,032
Greater Hebei	487	1,005	1,293	1,952	2,655	4,151
Shandong	496	968	1,294	1,848	2,659	4,294
East Coast	582	1,258	2,007	2,940	3,879	6,404
Greater Jiangsu	595	1,237	1,966	2,779	3,681	5,925
Zhejiang	559	1,301	2,091	3,196	4,254	7,276
South Coast	621	1,113	1,764	2,628	3,411	4,901
Fujian	438	940	1,454	2,207	3,231	4,862
Greater Guangdong	700	1,175	1,928	2,809	3,495	4,919

Note: Greater Sichuan combines Sichuan and Chongqing; Greater Hebei combines Hebei, Beijing and Tianjin; Greater Guangdong combines Guangdong and Hainan.

Table 13. “Greater” Provincial Real Rural Household Per-capita Consumption Levels, 1980-2005

2000 Constant Yuan	1980	1985	1990	1995	2000	2005
China Total	<i>n/a</i>	753	1,112	1,412	1,670	2,792
Far West	<i>n/a</i>	583	800	1,007	1,174	2,059
Xinjiang	384	689	964	1,014	1,236	2,102
Tibet	<i>n/a</i>	639	934	966	1,117	1,883
Qinghai	<i>n/a</i>	652	903	985	1,218	2,159
Gansu	323	485	646	986	1,084	1,988
Ningxia	346	629	920	1,146	1,417	2,288
N. Hinterland	405	675	1,003	1,238	1,384	2,369
Heilongjiang	419	727	1,114	1,594	1,540	2,780
Jilin	552	865	1,204	1,610	1,553	2,519
Inner Mongolia	400	691	936	1,272	1,615	2,673
Shanxi	343	647	928	1,000	1,149	2,051
Shaanxi	357	554	908	984	1,251	2,072
S. Hinterland	381	641	942	1,154	1,374	2,248
Greater Sichuan	407	655	969	1,178	1,462	2,453
Guizhou	357	604	767	1,003	1,097	1,696
Yunnan	318	633	924	1,057	1,271	1,955
Guangxi	386	636	1,022	1,296	1,488	2,567
Central Core	404	717	1,016	1,230	1,524	2,495
Henan	346	616	833	1,001	1,316	2,067
Anhui	416	709	980	1,153	1,322	2,399
Jiangxi	398	719	1,098	1,353	1,643	2,713
Hubei	390	794	1,156	1,341	1,556	2,655
Hunan	492	827	1,158	1,473	1,943	3,011
North Coast	408	787	1,059	1,407	1,658	2,840
Liaoning	582	953	1,292	1,586	1,754	3,065
Greater Hebei	394	760	997	1,302	1,512	2,599
Shandong	372	764	1,041	1,442	1,771	2,989
East Coast	512	1,084	1,734	2,337	2,697	4,749
Greater Jiangsu	525	1,065	1,702	2,195	2,415	4,098
Zhejiang	490	1,124	1,800	2,563	3,231	5,936
South Coast	517	897	1,576	2,211	2,485	3,763
Fujian	402	832	1,347	1,933	2,410	3,597
Greater Guangdong	567	920	1,697	2,331	2,520	3,839

Note: Greater Sichuan combines Sichuan and Chongqing; Greater Hebei combines Hebei, Beijing and Tianjin; Greater Guangdong combines Guangdong and Hainan.

Table 14 – “Greater” Provincial Rural Household Savings Rates, 1980-2005

2000 Constant Yuan	1980	1985	1990	1995	2000	2005
China Total		20.2	14.8	16.9	25.9	21.5
Far West		22.2	22.1	4.8	22.5	14.5
Xinjiang	23.9	26.4	25.9	17.1	23.6	22.5
Tibet		23.6	24.5	25.3	16.1	17.0
Qinghai		19.9	15.2	11.3	18.3	8.2
Gansu	17.4	19.8	21.3	-4.0	24.1	8.1
Ningxia	23.9	17.4	16.3	-6.4	17.8	16.5
N. Hinterland	11.9	20.2	18.4	11.9	25.9	22.6
Heilongjiang	20.1	22.9	22.9	16.2	28.3	21.0
Jilin	8.5	11.9	21.2	7.1	23.2	29.4
Inner Mongolia	13.6	19.2	19.0	2.3	20.8	18.2
Shanxi	13.7	23.9	19.2	23.2	39.7	35.0
Shaanxi	1.9	21.0	10.1	5.1	13.3	7.6
S. Hinterland	14.8	13.7	10.5	9.2	20.7	15.5
Greater Sichuan	15.2	12.3	8.7	5.6	23.1	19.9
Guizhou	13.4	11.5	7.3	14.4	20.2	17.3
Yunnan	17.0	21.1	10.2	3.0	14.1	12.4
Guangxi	13.0	11.5	16.0	16.8	20.2	5.8
Central Core	12.9	18.5	11.0	16.7	26.8	22.4
Henan	15.7	21.2	16.9	24.6	33.7	34.1
Anhui	11.9	19.1	4.5	17.8	31.7	16.8
Jiangxi	13.8	19.7	13.8	18.3	23.1	20.6
Hubei	10.1	20.6	9.4	17.6	31.4	21.6
Hunan	12.2	11.8	8.4	4.1	11.6	11.6
North Coast	20.5	21.7	20.7	25.7	36.5	32.3
Liaoning	16.4	14.2	18.8	16.2	25.6	24.0
Greater Hebei	19.1	24.4	22.9	33.3	43.1	37.4
Shandong	24.9	21.1	19.6	22.0	33.4	30.4
East Coast	12.1	13.8	13.6	20.5	30.5	25.8
Greater Jiangsu	11.9	13.9	13.4	21.0	34.4	30.8
Zhejiang	12.5	13.6	13.9	19.8	24.0	18.4
South Coast	16.7	19.4	10.7	15.9	27.1	23.2
Fujian	8.2	11.6	7.4	12.4	25.4	26.0
Greater Guangdong	19.0	21.7	12.0	17.0	27.9	22.0

Note: Greater Sichuan combines Sichuan and Chongqing; Greater Hebei combines Hebei, Beijing and Tianjin; Greater Guangdong combines Guangdong and Hainan.

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