As sustainable employment is one of the best routes out of poverty, assistance in designing and implementing strategies and programmes for job creation can contribute to the objective of poverty alleviation in situations of low income and high unemployment and underemployment.

The challenge of poverty reduction is made tougher by crises of some form or the other (e.g., those resulting from economic turmoil, armed conflicts or natural calamities) which tend to aggravate the poverty situation. Special attention, therefore, needs to be devoted to countries emerging from crises of various types.

The Recovery and Reconstruction Department (EMP/RECON) of the International Labour Office has the dual function of (i) responding to the reconstruction and rehabilitation needs in various post-crisis situations, and (ii) contributing to an employment-focussed development agenda by providing direct assistance in the creation of poverty-reducing jobs. The first function is undertaken through the InFocus Programme on Crisis Response and Reconstruction which assists in formulating and implementing employment-focussed reconstruction programmes. The second function is undertaken by the Employment Intensive Investment Branch of the Department which demonstrates how employment-intensive investment in infrastructure can contribute to the objective of job creation for poverty reduction.

The work of the Department also includes analytical and policy-oriented research on employment and poverty reduction.

The main results of work in progress will be published in the Issues in Employment and Poverty Discussion Paper series. These papers disseminate the analysis and empirical information generated by ILO staff, at the Headquarters or in the field, and consultants working on development issues and are circulated in order to stimulate discussion and to elicit comments.

GROWTH, INEQUALITY AND POVERTY IN CHINA

A Comparative Study of the Experience in the Periods Before and After the Asian Crisis

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Preface

The objective of this paper is to compare the performance of poverty reduction in China before and after the Asian economic crisis of 1997. Comparison of the 'pre-Asian crisis period' (1988-1995) and 'post-Asian crisis period' (1995-2002) reveals that a high rate of economic growth during the pre-Asian crisis period was not associated with a correspondingly high rate of poverty reduction. In spite of strong economic growth prior to the Asian crisis, China's track record in reducing poverty was inferior to that of the post-Asian crisis period, a time of relatively lower economic growth and yet associated with high rates of poverty reduction.

In evaluating China's poverty performance between the two periods, the paper first critically analyses data underlying previous measurements of poverty. The author attempts to overcome the shortcomings of the official measurements by using household surveys carried out by the Economics Institute of the Chinese Academy of Social Sciences (CASS) in 1988, 1995 and 2002. Unlike published official survey data produced by the National Bureau of Statistics (NBS), CASS survey data are available for individual households (including migrant households) and include non-wage income payments such as welfare payments, subsidies and charges levied on households for services. By using and comparing pre-1995 and post-1995 CASS survey data, the author estimates new poverty thresholds to obtain a more accurate assessment of the incidence of poverty before and after the Asian crisis.

Close examination of poverty trends shows that poverty reduction gains during the post-Asian crisis period were disproportionately higher in urban areas. From the pre-crisis period to post-crisis period, poverty reduction (measured in broad poverty headcount) was nearly four times as fast in rural China and a staggering 50 times as fast in urban China despite a lower rate of growth in per capita GDP in the post-crisis period than in the pre-crisis period. Findings reveal that the difference in poverty performance was predominantly due to: (a) faster growth in personal income, albeit highly skewed in favour of urban areas and (b) more importantly, much better performance with respect to distribution of income in the post-crisis period.

The experience of China prior to and following the Asian crisis in 1997 suggests that higher, more equitable distribution of income played a greater role in poverty reduction than high rates of economic growth alone. The author explains that redistributive economic policies initiated in response to rising unemployment and poverty following the Asian crisis, substantially improved China's poverty outcome by reducing overall income inequality. Such policies which included unemployment and pension provisions to protect laid-off workers; a reduction in wasteful subsidies to the rich; promotion of small enterprises; and a broadening of home ownership, served as redistributive social protection for residents. However, as for migrants, the present paper argues that their lack of access to such benefits can explain, in part, their greater poverty relative to residents.

Following the results and analysis, the author recommends greater proactiveness on behalf of the Chinese authorities in light of regional and migrant-resident disparities. Potential strategies include the improvement of agricultural terms of trade; a programme for the rapid promotion of rural non-farm activities to improve access of the poor to such activities; and a more rapid and non-discriminatory system of migration from rural to urban areas.

The examination of growth, inequality and poverty dynamics between the pre and post Asian crisis periods reveals that successful poverty reduction was closely associated with lower inequality and higher income growth. The post-Asian crisis period demonstrated the success of identifying and investing in redistributive policies, which led to improved income distribution and thus achieved faster poverty reduction. Whether in response to an economic downturn or not, China's case has wider significance, exemplifying that economic growth, while a necessary condition for poverty reduction, is by no means a sufficient one.

March 2004   Rizwanul Islam
                                                                          Director
                                               Recovery and Reconstruction Department

Acknowledgement

I Introduction

This paper uses the household-level data to estimate trends in poverty in rural and urban China during 1995-2002 and compare China's performance in poverty reduction during this period with that in the period prior to 1995, between 1988 and 1995 to be more specific. These time periods are determined by the dates of the three household surveys – respectively for 1988, 1995 and 2002 – which provide the data on which the estimates are based. In the title of this paper the two periods have been assigned the designations of the "pre-Asian crisis period" and the "post-Asian crisis period". The Asian crisis hit a number of East Asian countries in 1997, two years after the date of the intermediate survey which separates the two time periods. The logic of the designation is that China's poverty reduction outcome in the second period is largely the consequence of economic performance and policies that took place in the period after the beginning of the Asian crisis, which was also a period of decline in the growth of the world economy. As the paper will argue, some of the economic policies initiated in response to the crisis had important effects on China's poverty outcome in the second period.

Section II of the paper summarizes the principal features of China's performance in poverty reduction during the 1990s and discusses the weakness of the data on which the measurements underlying the evaluation of such performance are made. It then discusses the data that are used in the present study. In section III the method of estimating the poverty threshold is discussed. Section IV estimates the changes in rural poverty while section V explains the factors behind the difference in China's performance in rural poverty reduction in the post-Asian crisis period as compared to that in the pre-Asian crisis period. Similarly, sections VI and VII are respectively concerned with the estimation of poverty among those who are registered as urban residents (i.e., the urban population excluding the so-called floating migrants) and the explanation of the difference in the reduction of poverty in this group between the two periods. Section VIII estimates poverty among the floating migrants in urban China while section IX explains the causes of the difference in the incidence of poverty between the urban migrants and the urban residents. The concluding section summarizes the broad features of China's performance in poverty reduction in the post-Asian crisis period and highlights the principal aspects of China's policy response to deal with the problem of poverty in this period.

II Poverty in China in the 1990s, Problems Underlying its Measurement and an Alternative Data Source

China's Poverty Performance as Measured by Official Data

China's performance in poverty reduction during the 1990s has been recognized for both its solid achievements and remaining shortcomings. The World Bank estimate, that the number of people living on less than purchasing power parity (PPP) $1 a day fell by 147 million in China between 1990 and 1998 while it increased by 70 million in the rest

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of the developing countries taken together, is a remarkable testimony to China's success in poverty reduction.[1]

And yet the World Bank's findings about China's poverty performance points out serious blemishes as well. Consider, for example, the issue of regularity and consistency of China's poverty reduction. Table 1 shows the estimates of rural, urban and national poverty made at the World Bank during 1995-99. The main findings may be summarized as follows:

1.   There was indeed some reduction in the incidence of poverty between 1995 and 1999. But the entire reduction in the incidence of poverty took place in the first year, between 1995 and 1996. Thereafter, between 1996 and 1999, there was no reduction in the proportion of population in poverty.

2.   For the same poverty threshold (e.g., PPP\$ 1 per day), and without a correction for cost-of-living difference between rural and urban areas, the incidence of urban poverty is minuscule in comparison with the incidence of rural poverty. If one uses a 75 per cent higher poverty line for urban China, the rate of poverty turns out to be significant though still only about a third of what it is for rural China for a lower nominal poverty threshold. For either poverty threshold, there has been no trend reduction in poverty during the period.

Table 1:   Selected Indices of Poverty Headcount (per cent of Population below the Poverty Line)

Year	Rural	Urban		National
		A	B	
1995	30.8	0.6	5.8	22.0
1996	24.1	0.5	5.4	17.2
1997	24.0	1.0	5.4	17.0
1998	24.1	1.0	5.8	17.1
1999	24.9	0.5	4.1	17.4

Note: The rural estimate, urban estimate A and the national estimate measure poverty with reference to an expenditure-poverty line of 1993 PPP\$ 1.08. The urban estimate B refers to a poverty line which is 1.75 times the urban poverty line A (see Chen and Wang 2001)

Next, consider how China's average incidence of poverty at the turn of the century, after more than two decades of unprecedented growth, compares with that in countries with comparable average level of living, i.e., similar per capita income in PPP\$. Table 2 compiles the relevant information for *all* 10 countries with per capita PPP\$ income between 3,000 and 5,000 in 2001 for which poverty estimates for PPP\$ 1 poverty line are

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[1] World Bank 2000, Table 1.1.

available.[2] In addition it shows the data for Indonesia, a large country with a significantly lower real income. Of all these countries, China has by far the highest proportion of population in poverty, way above the average rate for the entire group. This outcome is doubly surprising because the group includes countries in Latin America and former Soviet republic in transition with very poor records on distribution and poverty reduction.

Table 2: **Per cent of Population below PPP\$ 1 Per Day in Selected Countries with Comparable PPP\$ Per Capita Income**

Country	Per Capita PPP\$ Income: 2001	Per cent in Poverty
China	3,950	16.1
Egypt	3,560	3.1
Indonesia	2,830	7.2
Jamaica	3,490	<2.0
Jordan	3,880	<2.0
Morocco	3,500	<2.0
Peru	4,470	15.5
Philippines	4,070	14.6
Sri Lanka	3,260	6.6
Turkmenistan	4,240	12.1
Ukraine	4,270	2.9

Source: World Bank, *World Development Indicators 2003*. The reference year for poverty estimates is 2000 except for Morocco and Ukraine (1999); Turkmenistan (1998); Jordan (1997); and Peru and Sri Lanka (1996).

Thus, *according to the most widely-used indicators*, there are serious blemishes in China's poverty performance in the 1990s. While the incidence of poverty declined very substantially over the entire period, it remained stubbornly undiminished over relatively long periods when average income increased at very high rates; and, compared to countries with similar level of development, China stands out as the country with far higher a proportion of population below a poverty threshold that represents a comparable command over goods and services.

Limitations of Available Estimates

Whatever one might want to conclude about China's poverty performance from the above estimates must be qualified by the fact that they suffer from serious problems of

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[2] For two other countries (Albania and Syria), falling within this per capita income range according to the WDI, poverty estimates corresponding to PPP\$ 1 line are not available. Note that what popularly goes by the name of a \$ a day poverty line in reality represents 1993 PPP\$ 1.08.

measurement. Some of the important sources of deficiency may be highlighted as follows.

First, published survey data, which serve as the basis of the above estimates, are available only for highly aggregated groups and not for individual households. This not only leads to an unknown error in the measurement of poverty indicators but also makes it impossible to analyze the characteristics of the poor.[3]

Secondly, the definition employed in the official surveys by the National Bureau of Statistics (NBS) is inconsistent with standard concepts of income. It excludes a number of components that are and should be treated as parts of income. For example, it excludes rental value of owned housing and incompletely covers non-wage income payments, especially welfare payments, subsidies and charges levied on households for services. Neglect of the rental value of owned housing not only creates a problem of comparability between groups that own and rent houses but also leads to a problem of comparability over time as home ownerships spreads. Neglecting non-wage income payments, subsidies and charges also creates a serious bias in so far as these payments as a proportion of income have steadily declined as charges have increasingly replaced free services.

Thirdly, the sample for urban China systematically excludes the migrant households who do not have resident permits. The number of these migrants, as a proportion of urban population, has rapidly increased over the last decade. Their living standard is believed to be significantly lower than that of the official urban residents. Their neglect not only biases the estimate of the level of poverty but also its change over time.[4]

The Data from CASS Surveys

An earlier ILO study by the present author, analyzing the incidence and trend in poverty in China during 1988-1995 (Khan, 1998), differed from other studies of China's poverty trends in so far as it used *comprehensive* estimates of income for *individual* households. These estimates were made possible by two household surveys implemented by the collaborative effort between the Economics Institute of the Chinese Academy of Social Sciences (CASS) and an international group of economists for 1988 and 1995 as reference years (these are hereafter referred to as CASS surveys). As the findings of the 1998 ILO study revealed, conclusions about trends in China's poverty reduction over the period 1988-95 change in a number of ways once the estimates are based on the data from CASS surveys. For urban China the study found little reduction, or some increase, in the incidence of poverty, depending on the method of adjustment in the poverty threshold for the change in cost of living, during that period of extraordinarily rapid growth. For rural China the reduction in poverty was significant though at a lower rate than suggested by most other estimates, especially the official ones.

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[3] Official Chinese estimates of poverty may actually have used the household level data. But they too suffer from the inadequacy of income definition discussed below. Furthermore they suffer from numerous additional problems concerning the adjustment of the poverty line over time (see Park and Wang 2001).

[4] These issues have been discussed in greater detail in Khan, 1998.

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The third round of the CASS survey was implemented for 2002 as the reference year. This has created an opportunity to update the earlier ILO study and analyze the trends in poverty in China between the years 1995 and 2002. Also the 2002 survey for the first time included a separate sample of the "floating migrants", the migrant households without official urban residence permits, a group that has hitherto been neglected in official and unofficial estimates of poverty.

Table 3 summarizes the basic features of the CASS surveys for 1995 and 2002. The rural sample in 2002 includes two additional provinces, Guangxi and Xinjiang. The urban residents sample includes the same 11 provinces in both years. The urban migrant survey of 2002 covers the same 11 provinces as does the urban resident survey.

Table 3:   Comparison of the Surveys for 1995 and 2002

	The 1995 Round	The 2002 Round
Rural Sample		
Number of Households	7,998	9,200
Number of Persons	34,739	37,969
Average Household Size	4.343	4.127
Number of Provinces	19	21
Provinces Included in 2003 but not in 1995		Guangxi Xinjiang
Urban Residents Sample		
Number of Households	6,931	6,835
Number of Persons	21,694	20,628
Average Household Size	3.131	2.018
Number of Provinces	11	11
Urban Migrants Sample		
Number of Households	-	2,000
Number of Persons	-	5,318
Average Household Size	-	2.659
Number of Provinces	-	11 (Same as Urban Residents Survey)

Note: Comparable information for the 1988 survey can be found in Khan 1998. Prior to the 2002 survey the former province of Sichuan was divided into two separate entities: Chongqing (with the same metropolitan area status as enjoyed by cities like Beijing, Tianjin and Shanghai) and Sichuan (comprising the rest of the former Sichuan). In the present study Sichuan consists of both Sichuan and Chongqing to make it comparable with the past. The 2002 urban sample enumerated 7,000 households of which 165 had to be rejected due to a variety of problems. *Throughout the paper the tables for which no source is cited are the work of the author based on the data of the CASS survey(s).*

III   The Poverty Threshold

The method of estimating the poverty threshold – the per capita income below which the members of a household are considered poor – involves three steps: (a) setting a normative minimum of food energy requirement in kilocalories per person per day; (b) obtaining the value of the minimum food requirement by multiplying the energy requirement by the estimated cost of food energy consumed by the income group that is closest to the poverty threshold; and (c) making a further allowance for non-food consumption expenditure on the basis of the consumption pattern of the group that seems to be closest to the poverty threshold. Recognizing that, despite the anchoring of the poverty threshold to a minimum food energy requirement, the procedure is not free of arbitrary judgments, not the least due to the lack of agreement among nutritional scientists about what a minimum food energy requirement is, two alternative poverty thresholds are used.[5]

For rural China per capita food energy requirement of 2,150 kilocalories was used. The average unit cost of food energy for the rural population was used to estimate the food expenditure at the poverty threshold. Non-food expenditure was estimated to be 40 per cent of the expenditure at poverty threshold.

For urban China the procedure was a little different. A minimum food energy requirement of 2100 kilocalories was used along with the food energy costs and the ratio of food to non-food expenditure for the poorest decile of the urban population. The result is a poverty threshold that is nearly twice as high as the rural poverty threshold, a reflection of the higher unit cost of food energy and a lower food/non-food expenditure ratio in urban areas than in rural areas. A lower poverty threshold for both rural and urban areas is set at 70 per cent of the higher threshold. The benchmark year for the estimates is 1995.

The use of a higher poverty threshold despite a lower food energy standard for urban areas has been elaborately defended in the 1998 report and in Khan and Riskin, 2001. The principal justification for using a higher poverty threshold for urban China is that per capita urban income is about three times as high as per capita rural income. The consequence of using the same poverty threshold for the two areas is to find that urban poverty is virtually non-existent (see Table 1). The view that China does not have a significant problem of urban poverty, held both by the official Chinese policy makers and the leading international development agencies,[6] is the direct consequence of using for urban China, which has more than three times the per capita income as rural China, the same poverty threshold as for the latter. A negligible proportion of the urban population is below the PPP$ 1 poverty line while a substantial proportion of the rural population is

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[5] In the 1998 study a third, intermediate, threshold was also used.

[6] World Bank 2001. The exclusive pre-occupation of this report – the only comprehensive World Bank poverty assessment for the 1990s - with rural poverty implies a presumption on its part that urban poverty is not a problem in China especially in view of an absence of any work on the urban poor.

below this level of income.[7] But serious questions have been raised about the appropriateness of this measure as an acceptable living standard for urban China for which, in official discussions, a higher poverty line is commonly used. Perhaps the most careful study of urban poverty in China, prepared for the Asian Development Bank and based on far more detailed data than the estimates in Table 1 above are based on, finds that in 1998 the incidence of absolute poverty, for a rather stringent threshold, was quite significant: 4.7 per cent for income measure and 11.9 per cent for expenditure measure.[8] It finds that small increases in the poverty line lead to large increases in the proportion of population in poverty.

The justification for a lower food energy requirement in urban than in rural areas could be based on the lower labor force participation per capita indicating a possible lower intensity of work in urban China as compared to rural China. It is also dictated by the practical consideration that it would further magnify the already large difference between the urban and the rural poverty thresholds. A final word on the large difference between the urban and the rural poverty thresholds might be useful. No claim is being made that the actual difference in "purchasing power parity" between the urban and the rural poverty threshold is as high as is indicated by the ratio of the two thresholds. The large value of the latter is partly due to difference in consumption preference between the two groups of consumers. Those who are uneasy about this may choose to combine the low urban threshold with the high rural threshold in order to compare poverty incidence in two locations. Their ratio, at about 1.39, may be much closer to the purchasing power parity difference between two locations.

The next step is to update the poverty threshold for price change between 1995 and 2002. The 1998 report gives an account of the excruciatingly difficult task of making cost-of-living adjustment in the poverty threshold between 1988 and 1995, a period of both a high rate of inflation and a tumultuous change in relative prices. Fortunately, the period between 1995 and 2002 has been a period of rather extreme price stability. There

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[7] The purpose of using the common PPP$ poverty line is to make poverty lines internationally comparable. The national average conversion factor between domestic currency value and PPP$ value of consumption is used to arrive at the domestic currency equivalent of PPP$ 1 (more recently PPP$ 1.08 which is estimated to be the approximate equivalent of the "national", nutrition-based, poverty line for a set of ten poor countries for which direct PPP$ national accounts estimates are available) for some benchmark year (1993 in recent estimates). There is however no mention in Chen and Wang 2001, the principal document reporting these estimates, that adjustment between urban and rural poverty lines is made to reflect cost-of-living difference. Indeed the procedure does not make any adjustment for the difference between the PPP$ conversion factor for the expenditure bundles of different income/expenditure groups. The method uses the average adjustment factor for all income/expenditure groups. It is highly doubtful that the average PPP$ conversion factor is the same as the one for the expenditure bundle of the poor. It has also been reported that recent research at the NBS has shown that the PPP$ conversion rate used by the Bank diverges by a wide margin from the rate estimated by using recent price data.

[8] The study – ADB 2002 by Athar Hussain and others – is yet to be published. It uses the household level data from the 1998 Urban Household Survey by the NBS. It calculates the food-poverty line for each of the 31 provinces by using the consumption pattern of the poorest quintile of population to obtain the "cost efficient" value of 2100 kilocalories and, to arrive at the poverty line, adds to it the proportion of non-food expenditure of the typical household that barely attains the minimum food consumption.

is some evidence that the prices of food grains, with a higher weight in the consumption bundle of the poor, increased at a lower rate than overall cost of living so that the application of the same method that was used to adjust for the change in cost of living between 1988 and 1995 would mean a lower rate of adjustment than is warranted by the rate of change in the consumer price index (CPI). This paper however simply uses the rate of change in the rural and urban CPIs to update the 1995 poverty thresholds. The reasons for this are: (a) the difference would be minimal, possibly insignificant, if the CPI for the poor were adjusted for the difference in the weight of food and food grains in their budget; and (b) the NBS no longer publishes the data that were used in the 1998 study to make the adjustment. As a result, between 1995 and 2002, this study has only one set of poverty comparison for each poverty threshold, unlike two between 1988 and 1995, one for unadjusted CPI and the other for the adjusted CPI. There are questions about the accuracy of the official CPIs in measuring the change in cost of living, a subject extensively dealt with in the 1998 report. But this is of far less consequence during a period when annual change in cost of living was only of the order of one per cent.

Table 4 summarizes poverty thresholds for 1995 and 2002. How do these poverty thresholds compare with the ones that are used by the others? A simple comparison between the levels of our poverty lines and the levels of the poverty lines used by the others would be inappropriate because our income estimates are substantially higher due to the use of a more comprehensive definition. What one should compare are the ratios between poverty lines and the average of the income estimates to the distribution of which they are applied.

Table 4: Poverty Thresholds (Values in RMB Yuan)

| | | 1995 | | 2002 | |
		Value	Per Cent of Per Capita Income	Value	Per Cent of Per Capita Income
Rural					
	Low	810	35	876	27
	High	1157	50	1252	38
Urban					
	Low	1604	28	1774	18
	High	2291	40	2534	26

Memo Items: Per cent change in official CPIs between 1995 and 2002:
      Rural: 8.17
      Urban: 10.59

For the benchmark year 1995, the official poverty threshold was 34 per cent of official income for rural China which is about the same ratio as that between our low poverty threshold and income. As for the World Bank's "PPP$ 1" poverty threshold, it appears to represent approximately 45 per cent of official average income for 1995. As a proportion of income this is closer to our high poverty threshold than the low poverty

threshold for rural areas.[9] For urban China, the World Bank's "PPP$ 1" poverty line translates to less than 13 per cent of average income for 1995, a phenomenon to which attention has already been drawn. For Urban China, there is no official poverty line comparable to the rural poverty line in so far as there is no comparable recognition of the problem of urban poverty. An official urban poverty line used in the mid 1990s was however higher than our high poverty line as a proportion of per capita income.[10]

IV   Changes in Rural Poverty Between 1995 and 2002

Table 5 shows the three standard Foster-Greer-Thorbecke indices of poverty – the headcount rate, the proportionate poverty gap and the "weighted" (squared) poverty gap – for rural China and for the rural areas of the provinces in the sample for 1995 and 2002 for the *upper poverty line*.[11] Table 6 shows the same for the *lower poverty line*.

During the period under review rural China achieved a rapid rate of poverty reduction. There was a 57 per cent reduction in the headcount rate according to the upper poverty line (hereafter *broad poverty*) and an even faster, 64 per cent, reduction according to the lower poverty line (hereafter *ultra poverty*). During the period China's rural population declined absolutely. According to official estimates, 1995 was the year of peak absolute size of China's rural population, 859.5 million. By 2002 it declined to 782.4 million, by almost 9 per cent. The proportion of population resident in rural areas declined from 71 per cent in 1995 to 61 per cent in 2002.

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[9] This is estimated as follows. For 1993 the PPP$ exchange rate for China was about 1.25. Using this, the PPP$ 1.08 translates to 1.35 Yuan per day or 493 Yuan per year. Between 1993 and 1995, the increase in the official CPI was 45 per cent for rural and 46 per cent for urban China. Using these, the 1995 RMB value of the World Bank's poverty line turns out to be 715 for rural China and 720 for urban China.

[10] See Khan and Riskin, 2001, page 61.

[11] The headcount index shows the proportion of population with income below the poverty threshold. The proportionate poverty gap shows the average, over the entire population, of the income shortfall from poverty threshold where the shortfall for the non-poor is defined to be zero. It is the product of the headcount rate of poverty and the average income shortfall of those who are in poverty. The weighted (squared) poverty gap is the average, over the entire population, of the squares of the proportion of income shortfall of the poor, in which the shortfall for the non-poor is defined to be zero. For further explanation see the Khan 1998 or Khan and Riskin 2001.

Table 5:   Indices of Rural Poverty: The Upper Poverty Line

	1995			2002		
	HC	PPG	WPG	HC	PPG	WPG
Rural China	28.6	8.2	3.5	12.3	3.2	1.4
Gansu	69.0	26.4	13.0	34.9	9.1	3.4
Guizhou	61.8	19.1	8.3	42.2	10.9	4.0
Shanxi	49.5	16.3	7.7	15.5	5.5	3.1
Shaanxi	58.0	18.5	7.8	22.7	5.5	2.1
Yunnan	45.6	10.6	3.7	27.8	9.2	4.6
Hunan	37.5	12.0	5.1	12.0	2.8	1.0
Sichuan	43.1	12.1	5.0	5.9	1.1	0.4
Jiangxi	27.0	5.9	2.2	10.3	2.7	0.8
Anhui	19.8	4.9	1.8	9.9	2.1	0.7
Henan	20.1	4.2	1.6	6.6	1.2	0.4
Hubei	25.0	8.6	4.3	8.8	2.2	0.9
Hebei	22.7	6.1	2.5	9.0	2.0	0.7
Liaoning	21.9	5.2	1.9	11.7	3.0	1.4
Jilin	18.3	4.4	1.7	5.6	2.2	1.8
Shandong	19.3	4.6	2.0	5.2	1.2	1.2
Zhejiang	4.0	0.7	0.3	4.5	1.8	0.9
Jiangsu	4.7	1.1	0.6	0.5	0.0	0.0
Guangdong	5.2	1.3	0.5	0.9	0.3	0.1
Beijing	1.3	0.8	0.5	0.0	0.0	0.0
Guangxi	-	-	-	16.0	3.2	1.0
Xinjiang	-	-	-	17.7	4.6	2.0

Note: HC = Headcount Rate; PPG = Proportionate Poverty Gap; WPG = Weighted Poverty Gap.

Table 6: **Indices of Rural Poverty: The Lower Poverty Line**

	1995			2002		
	HC	PPG	WPG	HC	PPG	WPG
Rural China	12.1	3.1	1.3	4.4	1.1	0.6
Gansu	43.9	12.8	5.6	14.0	2.6	0.9
Guizhou	28.5	7.5	2.9	15.9	3.1	0.9
Shanxi	24.3	7.3	3.3	8.1	3.1	1.8
Shaanxi	28.9	7.0	2.5	7.2	1.6	0.7
Yunnan	12.7	2.6	0.9	14.2	4.7	2.1
Hunan	19.2	4.7	1.6	3.9	0.6	0.2
Sichuan	18.5	4.3	1.7	1.4	0.3	0.1
Jiangxi	8.3	1.8	0.7	4.0	0.5	0.1
Anhui	6.4	1.3	0.5	2.6	0.4	0.1
Henan	5.0	1.2	0.6	1.2	0.2	0.1
Hubei	14.1	4.3	1.8	3.0	0.7	0.3
Hebei	7.7	2.0	1.0	3.2	0.4	0.1
Liaoning	7.3	1.4	0.5	3.5	1.3	0.8
Jilin	6.5	1.4	0.6	2.5	1.4	1.9
Shandong	5.9	1.8	0.9	1.0	0.6	1.4
Zhejiang	0.2	0.2	0.2	3.1	0.9	0.4
Jiangsu	1.2	0.6	0.5	0.0	0.0	0.0
Guangdong	2.2	0.4	0.2	0.4	0.1	0.0
Beijing	1.3	0.5	0.2	0.0	0.0	0.0
Guangxi	-	-	-	3.7	0.5	0.1
Xinjiang	-	-	-	5.8	1.8	0.8

Note: WPG should usually be no higher than PPG. The exception in the case of Jilin and Shandong is due to a few cases of negative income.

Applying the estimates of poverty headcount rates to the official population figures, one gets an even more impressive reduction in the *absolute number of the rural poor*: the number in broad poverty declined from 246 million to 96 million – a 61 per cent decline – and the number in ultra poverty declined from 104 million to 34 million – a 67 per cent decline.

The rate of reduction in the proportionate poverty gap (PPG) was only slightly faster (61 per cent) than the rate of reduction in the headcount index (57 per cent) for broad poverty. This means that there was an insignificant reduction in the average income gap of the broad poor. For the ultra poor the rates of reduction in the headcount index and the PPG are even closer, indicating no improvement in the average income gap of the poor. The rate of decline in the weighted poverty gap (WPG) in each case was about the same as the rate of decline in PPG, signifying that there was no appreciable change in the distribution of income among the poor.

The relationship among growth in income, distribution of income and poverty reduction for rural China as a whole is brought out in Table 7 which compares growth in income, change in inequality, and reduction in poverty between two time periods - the period between 1988 and 1995 ("the pre-1995 period`) and the period between 1995 and 2002 (the "post-1995 period").

The annual rate of increase in per capita income was somewhat slower during the post-1995 period than the pre-1995 period. But the rate of poverty reduction, measured by all three indicators, was a great deal faster during the post-1995 period than during the pre-1995 period. The explanation clearly lies in the fact that inequality increased sharply during the pre-1995 period while it fell significantly during the post-1995 period. Inequality, as measured by the Gini ratio, went up by 23 per cent during the earlier period while it fell by 10 per cent during the later period.

Table 7:   A Comparison of Growth, Inequality and Poverty Reduction in Rural China between Pre-1995 and Post-1995 Period

	Pre-1995 (Between 1988 and 1995)	Post-1995 (Between 1995 and 2002)
Annual Increase in Per Capita Income (%)	4.71	4.07
Change in Gini over the Entire Period (%)	+23.08	-9.86
Annual Reduction in Head-count Poverty Rate (%)		
High Threshold	2.88	11.36
Low Threshold	4.66	13.46
Gross Elasticity of Headcount Poverty		
High Threshold	0.61	2.79
Low Threshold	0.99	3.31
Annual Reduction in PPG Index (%)		
High Threshold	4.72	12.58
Low Threshold	7.62	13.76
Gross Elasticity of PPG Index		
High Threshold	1.00	3.09
Low Threshold	1.62	3.38

Note: Gross Elasticity of poverty reduction is defined as the per cent reduction in the relevant poverty indicator divided by the per cent increase in per capita income.

Gross elasticity of poverty with respect to per capita income, as reported in the table, is simply the ratio of the observed percentage change in an indicator of poverty to the actual percentage change in per capita income. It does not measure the extent of change in an indicator of poverty *due to* a per cent change in income. The latter is measured by the *net* elasticity of poverty reduction which is based on the separation of the effect of income growth from the effect of other factors on the change in an indicator of poverty.[12] A higher gross elasticity of poverty reduction represents a greater

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[12] Consider the following equation explaining the change in poverty headcount rate: $d(HC)/HC = a_o + a_1(dY)/Y + a_2(dG/G) + a_3H + \ldots$ in which $d(HC)/HC$ is the proportionate change in the headcount index, dY/Y is the proportionate change in income, dG/G is the proportionate in the Gini ratio, and H etc are other factors having effects on headcount rate of poverty. The net elasticity of headcount poverty with respect to income is a_1 whereas the gross elasticity is $[d(HC)/HC]/(dY/Y)$. Gross elasticity captures the change in the

effectiveness of economic growth in reducing the incidence of poverty due to favourable changes in the determinants of poverty other than income growth. As shown in Table 7, the gross elasticity of headcount-poverty reduction is respectively 4.5 times and 3.3 times as high in the post-1995 period as in the pre-1995 period respectively for broad poverty and ultra poverty. The gross elasticity of PPG reduction is similarly 3.1 and 2.1 times as high for the later period than for the earlier period. Income growth was greatly more beneficial to the poor in the later period than in the earlier period. The immediate explanation of this lies in the fact that growth was inequality reducing in the later period while it was inequality inducing in the earlier period. Reduction in poverty is caused by an *increase in the average income of the poor* and *an improvement in the distribution of income among the poor*. Given the overall rate of income growth, these changes are generally captured by the change in the Gini ratio. Unfortunately, a simple indicator like the Gini ratio does not always capture these changes: a change in the Gini ratio caused by a change in income distribution at the upper end of the income scale leaves the welfare of the poor unchanged just as an unchanged Gini ratio may hide an unfavorable change in distribution affecting the poor which is offset by a favorable change in distribution at the upper end of the income scale. But, hopefully, in most cases the change in the Gini ratio captures at least a good part of the change in the distribution affecting the welfare of the poor.

In extending the relationship among income growth, income distribution and poverty reduction to the provincial data one could either explain provincial differences in the *level* of poverty incidence with reference to *levels* of income and inequality of distribution in any given year (2002 in the present case) or explain provincial differences in the *rate of poverty reduction between 1995 and 2002* with reference to provincial differences in growth rate and change in distribution over the same period. This paper does both, but focuses on the latter exercise for analytical insights into the determinants of poverty reduction. One reason is that the interaction among changes in these variables between time periods is what one is ideally interested in. To try to read this from cross sectional differences in variables at a point of time suffers from the problem that the observed variation between provinces in income levels is far greater than the observed variation in the Gini ratio at any particular time. Thus the coefficient of variation and the ratio of the highest to the lowest value for the two variables for 2002 for the 19 common rural provinces that feature in the surveys for both years have been as follows:

	Coefficient of Variation	Ratio of Highest to Lowest
Per capita income	0.47	4.02
Gini ratio	0.13	1.60

In this situation, cross-sectional estimates of levels are likely to exaggerate the effect of variation in income than in inequality on poverty reduction.[13] Table 8 shows

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headcount index due not only to the change in income, but also to the other determinants of headcount poverty. Note that a_2 is the net elasticity of head count poverty with respect to the Gini ratio.

[13] A linear regression to explain provincial headcount poverty (upper poverty line) by provincial per capita income and provincial Gini for 2002 gives the following fit: HC = -12.80 -0.0076Y +165.78Gini in which both the coefficients are significant at 1 per cent level and adjusted R^2 is 0.62. The double logarithmic fit is

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that this problem does not exist in the case of rates of change in the variables between 1995 and 2002.

In discussing the pattern of poverty reduction in the provinces, it is useful to distinguish those provinces which had substantial incidence of poverty in 1995 from the four high-income provinces (Zhejiang, Jiangsu, Guangdong and Beijing) where in 1995 there was very little poverty, 5.2 (2.2) per cent in broad (ultra) poverty in Guangdong and less in the other three. Their per capita rural income in 2002 was 58 per cent (Guangdong) to 128 per cent (Zhejiang) higher than the per capita income for rural China. Because of the low benchmark poverty in these provinces, small absolute change in poverty performance becomes magnified in terms of the percentage change in the poverty indicators. Of these provinces, Zhejiang had a much higher than average growth in per capita income but a modest increase in inequality. The result was a small absolute rise in the headcount rate of broad poverty but a more substantial increase in the headcount rate of ultra poverty, which translates into a massive percentage increase in poverty. Guangdong and Jiangsu each attained very high *rates* of poverty reduction with only modest absolute fall in poverty, thanks again to the very low base poverty rates. Both these provinces had very low rates of income growth. But both of them had high rates of reduction in the Gini ratio of income distribution. Beijing's negligible headcount rate of 1.3 per cent poverty was wiped out with the help of a low rate of income growth despite a sharp rise in inequality.

Beijing is clearly a special case in view of its virtually non-existent initial poverty. In the other three high-income provinces the change in income distribution seems to have acted as a stronger determinant of the poverty outcome than the rate of income growth. In Zhejiang poverty increased despite a high rate of income growth which seems to have been offset by the increase in inequality. In Jiangsu and Guangdong poverty declined despite low rates of income growth; an obvious reason seems to be the significant reduction in inequality.

Guangxi and Xinjiang were not included in the 1995 survey. In the remaining 15 provinces the headcount rate of broad poverty ranged between 18 per cent in Jilin and 69 per cent in Gansu. Of these provinces, Sichuan achieved the fastest rate of reduction in poverty. It had a rate of income growth that was two-thirds faster than rural China as a whole and a reduction in the Gini ratio that was two and a half times as fast as the reduction of the Gini ratio for rural China. Thus a combination of high growth and a large reduction in inequality resulted in the finest performance in poverty reduction. Next most impressive reduction in poverty occurred in Shandong and Jilin both of which had significantly lower rates of income growth than the national average but a significantly faster reduction in inequality. Hunan and Hebei represent a different combination of growth rates and changes in inequality. Both of them experienced moderate increase in inequality which appears to have weakened the effect of their very high rates of income growth - more than twice as high as the national average for Hunan and more than fifty per cent higher for Hebei – on poverty reduction, which was at about the same, or only a

however log HC = 31.10 -3.60 log Y +0.28 log Gini in which the coefficient of income is significant at 1 per cent level but the coefficient of Gini is not significant at any reasonable level. The adjusted R^2 is 0.59.

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little faster, rate than the national average. The headcount rate of broad poverty declined in all provinces and the headcount rate of ultra poverty declined in all provinces except Yunnan, where it increased a little. Yunnan had little growth in per capita income and no improvement in income distribution.

Table 8:   Gross Elasticity of Poverty Reduction: Rural China

	% Change in Gini 1995-2002	Annual % Change in Per Cap Income	Annual % Reduction in Poverty HC		Gross Elasticity of HC Poverty Red.	
			Upper	Lower	Upper	Lower
Rural China	-9.86	4.09	11.36	13.46	2.78	3.29
Gansu	-6.69	7.23	9.28	15.06	1.28	2.08
Guizhou	-0.99	3.51	5.30	8.00	1.51	2.28
Shanxi	-3.40	8.59	15.28	14.52	1.78	1.69
Shaanxi	-23.12	4.26	12.54	18.01	2.94	4.23
Yunnan	+0.33	1.93	6.83	-1.61	3.54	-0.83
Hunan	+9.27	9.34	15.02	20.36	1.61	2.18
Sichuan	-24.71	6.89	24.73	30.84	3.59	4.48
Jiangxi	-1.74	5.04	12.86	9.90	2.55	1.96
Anhui	-2.57	3.61	9.43	12.07	2.61	3.34
Henan	-5.45	4.64	14.71	18.44	3.17	3.97
Hubei	-7.72	5.30	13.86	19.83	2.62	3.74
Hebei	+7.09	6.36	12.38	11.79	1.95	1.85
Liaoning	-2.67	4.67	8.57	9.97	1.84	2.13
Jilin	-18.34	2.56	15.56	12.76	6.08	4.98
Shandong	-21.30	3.61	17.08	22.40	4.73	6.20
Zhejiang	+6.08	7.22	-1.70	-47.93	-0.24	-6.64
Jiangsu	*-16.27*	*2.17*	*27.39*	*63.68*	*12.62*	*29.35*
Guangdong	-17.44	0.93	22.16	21.61	23.83	23.24
Beijing	*+ 34.10*	*2.45*	*64.10*	*64.10*	*26.16*	*26.16*

Note: In the last four columns, the heading "Upper" refers to the upper poverty line and the heading "Lower" refers to the lower poverty line. Jiangsu and Beijing, for which the entries are italicized, reduced poverty to zero, from very low initial poverty levels, for the given poverty thresholds. The rates of poverty reduction for these provinces have been calculated by making the assumption that the headcount rate in 2002 was 0.001. Their high rates of poverty reduction and elasticities of poverty reduction should be viewed in this context.

Table 8 shows the gross elasticities of headcount poverty reduction for the provinces. Discounting the high-income provinces with little initial poverty, the highest elasticities are observed for Shandong and Jilin, provinces with low growth but large reduction in inequality. Some of the most rapidly growing provinces with rising inequality or very low reduction in inequality – e.g., Hunan, Hebei and Shanxi – on the other hand had relatively low gross elasticities of poverty reduction.

Table 9: **Regression Results: Rural Poverty Reduction (15 Provinces)**
(Dependent Variable: Annual Per Cent Reduction in Poverty)

Regressor	(1)	(2)	(3)	(4)
Change in Gini	-0.247		-0.324	-0.484
	(-2.344)		(-3.819)	(-6.292)
Income Growth		0.861	1.312	1.835
		(1.512)	(3.158)	(6.613)
Gini				-59.076
				(-3.405)
Income				0.005
				(3.802)
Intercept	11.212	8.443	3.911	10.307
	(8.700)	(2.662)	(1.555)	(1.896)
R^2	0.297	0.149	0.616	0.881
Adjusted R^2	0.247	0.084	0.552	0.833

Notes:
Change in Gini = Per cent change in provincial Gini ratio between 1995 and 2002
Income growth = Annual per cent growth in per capita provincial income
Gini = Initial (1995) level of provincial Gini ratio
Income = Initial (1995) level of provincial per capita income
Dependent Variable = Annual per cent reduction in provincial headcount poverty   (upper poverty line)
Figures in parentheses are t-values

Table 9 shows the results of the regressions explaining the differences in provincial rates in poverty reduction. Regressions have been limited to the 15 provinces with significant rates of benchmark poverty. The four high-income provinces with insignificant benchmark poverty have been excluded for reasons discussed earlier.[14]

The dependent variable in the equations reported in Table 9 is the annual rate of reduction in broad headcount poverty during 1995-2002. The explanatory variables are: (a) per cent change in the Gini ratio – reported as ratios, not indices, with values well below one – between 1995 and 2002; (b) annual per cent change in per capita income; (c) the initial, 1995, level of the Gini ratio; and (d) the initial, 1995, level of per capita income. The equation that best explains the variation in the rate of poverty reduction includes all the above four explanatory variables. More than 83 per cent of the variation

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[14] Their inclusion in the regressions weakens the results that are reported below.

in the rates of poverty reduction is explained. The signs of the coefficients are all as expected. A rise in inequality (Gini ratio) reduces the rate of poverty reduction. A high initial level of inequality (high benchmark Gini ratio) slows down the rate of poverty reduction. Faster income growth accelerates the rate of poverty reduction. High initial income facilitates poverty reduction. All the coefficients are significant at one per cent level.

Net elasticity of poverty with respect to income is 1.835 while the *net* elasticity of poverty with respect to inequality is -0.484. In judging the relative magnitudes of these elasticities it is however necessary to consider the units in which variables are specified: income growth is shown as per cent change *per year* whereas change in inequality is shown as per cent change in the benchmark Gini ratio (average in 1995 for the provinces was 0.324) over the *seven-year* period ending in 2002. A 5 per cent fall in the Gini ratio over the seven-year period – from the average value of 0.324 to 0.308 – would reduce the headcount rate of broad poverty by 2.42 per cent per year (about 18 per cent over the seven-year period) and bring down the average of the provincial headcount rates of broad poverty from 36 per cent in 1995 to 29.5 per cent in 2002. Thus, controlling for other variables, a relatively modest absolute fall in the Gini ratio would bring about a substantial reduction in poverty. A 5 per cent growth in income over the seven-year period means a 0.7 per cent income growth per year which would lead to 1.28 per cent annual reduction in poverty, or just over 9 per cent reduction in poverty over the seven-year period. Once again, the return to growth in terms of reduction in poverty is very substantial although a 5 per cent faster income growth would not result in as much a reduction in poverty as a five per cent reduction in inequality. A high initial value of the Gini ratio makes it more difficult to reduce poverty. The rate of poverty reduction would be higher by 0.95 per cent per year, or a total of 6.8 per cent over the seven-year period, if initial Gini ratio were 5 per cent lower, say 0.308 instead of the average of 0.324. Higher initial per capita income helps poverty reduction. In 1995 the (unweighted) average of the 15 provincial per capita incomes was 1776 Yuan. Comparing the effect of a five per cent higher initial income, with that of this average, shows that the rate of poverty reduction would be higher by 0.09 per cent per year, a total of 3.5 per cent over the seven-year period. Comparing a given percent change in different explanatory variables is arbitrary: it does not signify the equality in the magnitude of effort in bringing those changes about, nor the relative desirability of those changes. But the ranking of a 5 per cent change in each of the explanatory variables in the *right* direction, in terms of the magnitude of their effect on poverty reduction, puts the reduction in inequality at the top followed by income growth, initial inequality and initial income, in that order.

V   An Explanation of the Faster Rate of Reduction
in Rural Poverty in the Post-Asian Crisis Period

The above clearly brings out the two principal sources of rapid poverty reduction in rural China during 1995-2002, the post-Asian crisis period: a moderately rapid rate of growth in per capita income and a significant reduction in the inequality of income distribution. Although the rate of income growth was somewhat slower than in the pre-Asian crisis period, the vastly improved performance in the distribution of income made the rate of reduction in poverty much faster during the later period. This section analyzes the factors behind the performance in the growth of income and the reduction of inequality.

Growth in Income

During the period under review the growth in per capita personal income in rural China was just over 4 per cent per year, somewhat lower than in the preceding seven-year period and low by the standard of the rate of growth in urban per capita income (6.7 per cent per year) and per capita GDP (7.2 per cent per year). And yet this growth in income should be judged high by any absolute and international standard. What have been the sources of this income growth?

Table 10:   Contribution of Different Sources to Rural Income Growth (%)

	Incremental Share	Annual Growth
Wages	50.4	8.9
Farm Income	19.1	1.2
Non-Farm Enterprise	16.0	6.7
Property & House Ownership	18.9	6.8
Transfer & Miscellaneous	-4.3	-4.2

The incremental shares in the change in personal income (in per cent of total) and annual per cent rates of real growth of different income sources between 1995 and 2002 are shown in Table 10. The most important source of income growth was due to wages, which accounted for more than half of the increase in personal income as well as achieved a nearly nine percent annual real rate of growth, the highest of all components of income. This was due to a reasonably rapid growth in *per capita* employment in rural China (Table 11).

Table 11:   Changes in Rural Employment

	1995	2002
Rural Population (Million)	859.5	782.4
Total Rural Employment (Million)	490.3	489.6
Employment per Person	0.57	0.63
Non-Farm Wage Employment (Million)	133.3	147.0
TVE	(128.6)	(132.9)
Private	(4.7)	(14.1)
Non-Farm Wage Employment per Person	0.155	0.188

Note: Data have been obtained from NBS *2003*.

The accuracy of the numerical estimate and the conceptual basis of total rural employment, reported from NBS estimates, are uncertain. The largest component of employment is employment in family farms,[15] which appears to have declined modestly over the period. Per capita rural employment however increased by as much as 11 per cent.[16] This was due to a decline in the absolute size of the rural population. The year 1995 marks a watershed in China's demographic transition in that the absolute size of the rural population peaked in that year and started declining rapidly thereafter, at an annual rate of 1.33 per cent.

More remarkable, and helpful in explaining the sharp rise in wage income, is the increase in non-farm wage employment. After several years of stagnation, employment in Township and Village Enterprises (TVEs) started increasing in the late 1990s. Private wage employment in rural China, still a small component of total employment, increased at an extraordinarily rapid annual rate of 17 per cent. Together these sources of wage employment increased by 21 per cent on a *per capita basis* over the period. In line with the increase in non-farm wage employment there was a fairly rapid increase in income from non-farm enterprises.

Income from family farming constitutes the second largest share of incremental income. The annual rate of growth of this source of income was however very small. This deserves a closer look. Per capita real agricultural value added, defined as value added in agriculture at constant prices divided by the rural population, increased at an annual rate of 4.7 per cent, representing a 3.3 per cent growth in real value added in agricultural and -

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[15] This is not shown separately in Table 12. But this probably accounts for almost the entire difference between total employment and non-farm wage employment.

[16] Change in employment per member of the labour force, rather than per capita, is a more accurate indicator of an improvement in the demand-supply balance for labour. Unfortunately, labour force estimates are not separately available for rural and urban China. NBS 2003 shows that the economically active population, as a proportion of total population in China, increased from 56.8 per cent in 1995 to 58.7 per cent in 2002. If the ratio of rural labour force to rural population increased at about the same rate, then there was a fairly rapid increase in employment per member of the labour force.

1.33 per cent growth in rural population.[17] Per capita real personal income of rural households from farming however increased at only 1.2 per cent per year. This suggests a decline in agriculture's terms of trade over the period under review.[18] Note that the meager increase in per capita income from farming, despite the erosion due to the decline in terms of trade, was made possible by the fall in rural population. With an unchanged or increasing population, per capita income from farming might even have fallen due both to diminishing returns from scarce land and a larger number of persons among which to share the income.

Public intermediation through taxes and subsidies tended to slow down the rate of increase in disposable income. Per capita net taxes increased at nearly 33 per cent per year.

Change in Inequality

As argued above, much of the accelerated reduction in poverty was due to the reduction in inequality of the distribution of income. Table 12 shows the sources of change in inequality between 1995 and 2002. Only three of the income components – wages, farm income and net subsidies (taxes) – became less disequalizing or more equalizing over this period.[19] All other sources of income became more disequalizing.

Wages were a very strongly disequalizing source of income in 1995. In 2002 they remain a disequalizing source of income, but much less strongly so. The concentration ratio of its distribution fell sharply but is still above the Gini ratio. The evidence for 2002 suggests that the unequal distribution of wage income is largely attributable to the high

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[17] The growth rate in agricultural value added is calculated from Table 3-4 in NBS, 2003.

[18] Until recently it was possible to make a more direct estimate of agriculture's terms of trade as the ratio of the "General Purchasing Price Index of Farm Products" to the "General Rural Retail Price Index of Industrial Products". Both these indices are shown in NBS 2000, p. 290. The index of terms of trade for agriculture, thus calculated, had the following values for selected years: 1978: 100; 1988: 177 (steady increase in the intervening period, the index peaking in 1988); 1993: 154 (steady fall between 1988 and 1993, the year in which the index bottomed out); 1994: 184; 1995: 192 (sharp rise for two years which was followed by only a small decline in 1996); 1999: 151 (steady fall since 1996). After 2000 the NBS stopped publishing the two indices on which these terms of trade estimates are based. The comparison of the change in real growth in value added and the real growth in personal income suggests that this decline has continued until 2002.

[19] For the *i-th* component of income, one can derive a "pseudo-Lorenz distribution" in which cumulative shares of the *i-th* source of income are plotted against the cumulative deciles of population in which the latter is obtained from a ranking of individuals according to *per capita overall income* rather than per capita income from the *i-th* source. As the Gini ratio is estimated from the Lorenz distribution of income, so is the "pseudo-Gini ratio" or the "concentration ratio" for the i-th source of income estimated from the pseudo-Lorenz distribution of the i-th income component. The Gini ratio is the weighted average of the concentration ratios of the components of income where the weights are the shares of the respective components in total income. A component of income is considered equalizing (disequalizing) if its concentration ratio is lower (higher) than the Gini ratio; a rise in its income share reduces (increases) the Gini ratio.

regional inequality in the distribution of income rather than to the inequality of the distribution of wage income within a given region. The simple average of the concentration ratios of wage income for the 21 provinces is just 0.310 as compared to the concentration ratio of wage income for entire rural China of 0.455, a clear indication that inter-provincial inequality dominates inequality within the provinces. Direct comparison of provincial concentration ratios between 1995 and 2002 is not possible because of the absence of comparable estimates for 1995. It however appears that much of the impetus for reduced concentration of wage income was provided by the reduced regional inequality of income – and wage income – among provinces.

Table 12:   Sources and Distribution of Rural Income: 1995 and 2002

	Per cent of Income		Gini/Concentration Ratios	
	1995	2002	1995	2002
Individual wages	22.38	29.46	0.738	0.455
Net farm income	46.44	38.97	0.238	0.202
Net income from household non-farm activities	9.71	11.82	0.484	0.558
Property income	0.43	0.60	0.543	0.777
Rental value of owned housing	11.61	13.77	0.321	0.377
Net transfer from state and collective	-0.48	-2.62	-1.759	0.106
Other income (including private transfer)	9.91	8.01	0.463	0.515
TOTAL	100.00	100.00	0.416	0.375

There are two kinds of evidence for a reduction in regional inequality in the distribution of rural income. Spearman's rank correlation coefficient between provincial rank in per capita rural income in 1995 and the provincial rank in the rate of growth in rural income between 1995 and 2002 is -0.44 for the 19 provinces that are common in the two samples, indicating a negative relationship between initial income level and the growth rate of income. The coefficient is not significant at 5 per cent level, but is significant at 10 per cent level. Secondly, largely as a result of this negative relationship between the initial level and the rate of growth of income, the coefficient of variation of per capita rural income among the 19 common provinces fell from 0.53 in 1995 to 0.47 in

2002. This may reflect the early results of the recent policy of the government to shift the focus of poverty reduction towards the promotion of a greater regional balance in development.

Farm income was a strongly equalizing source of income distribution in 1995. By 2002 it became even more strongly equalizing. Its concentration ratio fell absolutely and as a proportion of the Gini ratio. The strongly equalizing distribution of farm income must be attributed primarily to the highly egalitarian system of peasant farming established and perpetuated by China's egalitarian distribution of land. Table 13 shows land distribution and its association with inequality in China in 1988, 1995 and 2002.

Table 13:   Distribution of Per Capita Landholdings

	1988	1995	2002
Gini Ratio			
Unadjusted Land	0.499	0.431	0.488 (0.478)
Adjusted Land	0.465	0.414	0.458 (0.443)
"Concentration Ratio"			
Unadjusted Land	0.021	0.001	-0.013 (-0.019)
Adjusted Land	0.063	0.051	0.018 (0.012)

Note: "Unadjusted" Land is total land area irrespective of the proportion irrigated, while "adjusted" land counts an irrigated hectare as equivalent of two hectares of unirrigated land. The Gini ratio is estimated from the Lorenz distribution of per capita land, in which individuals are ranked according to per capita landholding. The "concentration ratio" is estimated from the Lorenz distribution of per capita land, in which individuals are ranked according to per capita income. Figures in parentheses for 2002 are estimates based on the same 19 provinces that were in the 1995 sample (i.e., excluding Xinjiang and Guangxi). For the sources of 1988 and 1995 estimates see Khan and Riskin 2001, p.108.

Gini ratio of land distribution is remarkably low by the standard of all available international estimates. Even this low inequality is almost certainly due to regional differences in land endowment rather than inequality in any region with a given land endowment per rural household. Over the period as a whole, there has been some reduction in the Gini ratio. By 2002 the "concentration" ratio of adjusted land had fallen close to zero, indicating that land in irrigated unit was absolutely equally accessible to all income groups. The "concentration" ratio for unadjusted land had turned slightly negative, indicating that the amount of land, unadjusted for the proportion irrigated, was a little more accessible to the lower income groups than to the higher income groups. Equality of access to land has assured an egalitarian distribution of income from farming and has constituted a strong source of basic income security in rural China.

Net taxes continued to be disequalizing in 2002 but not as massively as in 1995. In 1995 its concentration ratio was negative: the poorest income groups paid more than the entire net taxes while the richest income groups received a net subsidy. By 2002 the tax-subsidy system had become less disequalizing. But its concentration ratio remained way

below the Gini ratio, indicating that taxes are highly regressive. There is still a long way that the tax-subsidy system has to go before it begins to improve the distribution of income.

Rural Urban Migration

In the above the important role of declining rural population in helping both the growth and the favorable change in the distribution of rural income has been emphasized. China's actual rural population in 2002 would have been 911.5 million if it had grown at the same rate as national population, 0.843 per cent per year, since 1995. This means that a total of 129 million people moved out of rural China to urban areas during this period.[20] They have moved to existing or newly-created urban locations. This has been made possible by the de-facto flexibility in China's rigid system of residence permits (*houkou*).

VI   Changes in Urban Residents' Poverty in the Post-Asian Crisis Period

Table 14 shows the poverty indices both for the urban residents for the sample as a whole and for the eleven provinces. Between the two years poverty declined for every entity and for every indicator with the freakish exception of ultra poverty headcount in Beijing.[21] The rate of decline has often been quite dramatic in the provinces in which the incidence of urban poverty was significant. This is in sharp contrast with China's performance in poverty reduction in the period between 1988 and 1995 when urban poverty showed little decline and, indeed, some increase according to certain indicators.

Because of the very low incidence of ultra poverty in the benchmark year, the discussion of change in poverty in what follows is carried out with reference to broad poverty, measured in terms of the upper poverty line. The difference between the pre-1995 period (the period between 1988 and 1995) and the post-1995 period (the period between 1995 and 2002) for the residents of urban China as a whole is summarized in Table 15.

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[20] This is far in excess of the estimated increase in the number of floating migrants over the period. The total level of floating migrants is estimated to have increased from about 60 million in 1995 to about 80 million in 2000 (Zai Liang, and Zhongdong Ma 2003). It seems that for a large proportion of those who have ceased to remain rural residents, the formerly rural location of their residence have been converted into new urban locations. Be that as it may, they have ceased to claim land and employment resources of the rural economy.

[21] In Beijing five individuals, out of a total of 1456, fell below the lower poverty line in 2002 while none was below the lower poverty line in 1995. In several cases very low poverty rates according to certain indicators remained the same in 2002 as in 1995 due to what appears to be rounding error.

Growth in per capita income was faster in the post-1995 period than in the pre-1995 period: 6.44 per cent per year as compared to 4.48 per cent.[22] But the truly remarkable change occurred in the distribution of income. In the pre-1995 period the Gini ratio increased by more than 42 per cent while in the post-1995 period it fell by a modest 4 per cent. The poverty outcome – measured as the change in headcount rate for the upper poverty line – was a tiny reduction of a third of a per cent per year in the pre-1995 period and a dramatic fall of 17 per cent per year in the post-1995 period.

Table 14:   Indices of Urban Poverty

	1995			2002		
	HC	PPG	WPG	HC	PPG	WPG
		The upper Poverty Line				
Urban China	8.0	2.0	0.8	2.2	0.5	0.2
Shanxi	20.7	5.3	2.1	5.3	1.3	0.5
Henan	21.1	5.8	2.3	2.9	0.7	0.3
Anhui	6.9	1.3	0.4	1.9	0.3	0.1
Yunnan	6.1	0.9	0.3	1.2	0.3	0.1
Hubei	5.3	1.3	0.8	2.1	0.5	0.2
Sichuan	7.3	1.8	0.7	4.1	0.9	0.3
Liaoning	5.7	1.1	0.3	1.6	0.3	0.1
Gansu	12.9	3.4	1.2	2.3	0.5	0.2
Jiangsu	1.8	0.5	0.2	1.0	0.1	0.0
Beijing	0.6	0.1	0.0	0.3	0.1	0.1
Guangdong	0.9	0.2	0.0	0.3	0.1	0.0
		The Lower Poverty Line				
Urban China	2.7	0.6	0.3	0.8	0.1	0.0
Shanxi	7.9	1.8	0.7	2.3	0.3	0.1
Henan	9.0	1.9	0.7	1.2	0.2	0.1
Anhui	1.7	0.2	0.1	0.2	0.1	0.0
Yunnan	0.9	0.2	0.1	0.3	0.1	0.0
Hubei	1.6	0.7	0.6	1.0	0.2	0.1
Sichuan	2.1	0.6	0.3	1.1	0.3	0.1
Liaoning	1.2	0.1	0.0	0.6	0.0	0.0
Gansu	4.4	0.9	0.3	0.6	0.2	0.1
Jiangsu	0.8	0.2	0.1	0.2	0.0	0.0
Beijing	0.0	0.0	0.0	0.3	0.0	0.0
Guangdong	0.3	0.0	0.0	0.2	0.0	0.0

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[22] It is worth noting that the rate of growth in personal income does not have a stable relationship with the rate of GNP or GDP growth. Annual growth in per capita GNP for China was 8.1 per cent during 1988-1995 and a lower 7.3 per cent between 1995 and 2002 according to official data. Growth in per capita personal income, for China as a whole, as measured by the CASS surveys, was 5.1 per cent in the first period and a *higher7*.1 per cent during the second period. Clearly, public policy with respect to distribution of income among households, business and the government changed in favor of the households in the second period. The faster growth in personal income in the second period was partly due to the rising share of the urban population whose personal income has been higher and increasing faster than that of the rural population.

Table 15: A Comparison of Growth, Inequality and Poverty Reduction in Urban China between Pre-1995 and Post-1995 Period

	Pre-1995 (Between 1988 and 1995)	Post-1995 (Between 1995 and 2002)
Annual Increase in Per Capita Income (%)	4.48	6.44
Change in Gini over the Entire Period (%)	+42.49	-4.22
Annual Reduction in Headcount Poverty Rate High Threshold (%)	0.35	16.84
Gross Elasticity of Headcount Poverty: High Threshold	0.08	2.61

Note: Gross elasticity of poverty reduction is defined as the percent reduction in the relevant poverty indicator divided by the percent increase in per capita income.

The difference was due to the very different outcome with respect to the change in inequality. In the pre-1995 period the *gross* elasticity of poverty reduction – per cent change in poverty divided by the per cent change in per capita income – was an insignificant 0.08. In the post-1995 period it rose to 2.61. In the first period the potential poverty-reduction effect of income growth was largely offset by the increase in inequality. In the second period the poverty-reduction impact of income growth was accentuated by the improvement, albeit modest, in income distribution.

An econometric analysis of the relationship among poverty reduction, inequality and growth suffers from the limitation that the number of provinces in the urban sample is much smaller than in the rural sample. Furthermore, in several provinces urban poverty in the initial period was too low to permit a meaningful measurement of its change. The exclusion of those provinces would further reduce the already limited degrees of freedom. The results reported below need to be interpreted in the context of these limitations.[23]

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[23] As in the case of rural provinces, a regression was fitted to explain the level of broad headcount poverty (HC) by the levels of provincial per capita income (Y) and provincial Gini ratio (Gini): $HC = -1.539 -0.0005Y +28.868Gini$, which had an adjusted $R^2 = 0.65$, the coefficients of Y significant at 1 per cent and the coefficient of Gini significant at 5 per cent. In the double log fit: $Log HC = 34.842 -3.474 log Y + 2.039 log Gini$, the coefficient of Gini is not significant at any reasonable level of probability while the coefficient of income is significant at 1 per cent and adjusted $R^2 = 0.90$. Once again the insignificance of the coefficient of Gini, especially in the logarithmic fit, seems to be due to the very low variability in provincial inequality at any given time. The coefficient of variation of provincial Gini for 2002 is 0.09 while the coefficient of variation for provincial per capita income is 0.31.

Table 16 shows the per cent change in the provincial urban Gini ratios between 1995 and 2002. It is noteworthy that in 8 of the 11 provinces the Gini ratio actually increased. It fell in just two while in one (Henan) it was unchanged. The reduction in the overall urban Gini, despite the increase in the large majority of provincial urban Gini ratios, indicates that there was a reduction in inter-provincial inequality in income. Support for this is found by the decline in the coefficient of variation for per capita provincial income from 0.39 in 1995 to 0.31 in 2002. Also Spearman's rank correlation coefficient between the provincial rank in per capita income in 1995 and the provincial rank in the growth rate in income between 1995 and 2002 is negative (-0.673) and significant at 10 per cent level.

Table 16 also shows annual per cent *reduction* in poverty headcount and the annual per cent growth in per capita income for the provinces. The ratio of the two, shown in the last column of the table, is the *gross* elasticity of poverty reduction. As noted in section IV, this needs to be distinguished from the *net* elasticity of poverty reduction with respect to income growth, which separates out the effect of income growth on poverty reduction from the effects of the other determinants of poverty reduction.

Table 17 shows the results, for urban areas of the provinces, of the same four regression equations that were employed to explain the rate of rural poverty reduction. Equation (1) shows that, as the sole explanatory variable, the change in Gini ratio has the right sign: a higher rate of increase in the Gini ratio results in a *decline* in the rate of poverty reduction. The coefficient is however not significant at any decent level of confidence. Income growth, as the sole explanatory variable, also has the right sign of the coefficient, but the coefficient is again not significant at any reasonable level of confidence (equation (2)). Equation (3) employs both the rate of change in the Gini ratio and the rate of income growth as explanatory variables. Both the coefficients have the right sign. While the coefficient of the change in the Gini ratio is significant at 5 per cent level, the coefficient of income growth is just short of being significant at 10 per cent level of confidence. Together they explain a third of the variation in the rate of poverty reduction. Introduction of the initial levels of income and inequality as additional variables – in equation (4) – renders the coefficients of the explanatory variables insignificant and reduces the explained proportion of the variation in the dependent variable as compared to equation (3), perhaps due to the lowering of the degrees of freedom.

Table 16:   Gross Elasticity of Poverty Reduction in Urban China

	% Change in Gini 1995-2002	Annual % Change in Per Capita Income	Annual % Reduction in Poverty HC	Gross Elasticity of HC Poverty Reduct.
Urban China	-4.22	6.44	16.84	2.61
Shanxi	+19.92	9.18	17.69	1.93
Henan	0	8.10	24.69	3.05
Anhui	+22.87	7.14	16.83	2.36
Yunnan	+12.11	8.37	20.73	2.48
Hubei	+7.73	6.55	12.39	1.89
Sichuan	+14.77	6.15	7.91	1.29
Liaoning	-12.04	7.12	16.60	2.33
Gansu	-46.89	2.80	21.83	7.80
Jiangsu	+27.97	7.42	8.05	1.08
Beijing	+5.68	6.60	9.43	1.43
Guangdong	+3.80	3.32	14.52	4.37

Note: Poverty reduction and gross elasticity of poverty reduction are with respect to the upper poverty threshold.

Table 17:   Regression Results: Urban Poverty Reduction

(Dependent Variable: Annual Per Cent Reduction in Poverty)

Regressor	(1)	(2)	(3)	(4)
Change in Gini	-0.131		-0.241	-0.167
	(-1.632)		(-2.581)	(-0.789)
Income Growth		0.171	1.792	1.529
		(0.178)	(1.832)	(0.850)
Gini				19.311
				(0.273)
Income				-0.001
				(-0.431)
Intercept	16.184	14.386	4.889	3.475
	(9.915)	(2.186)	(0.772)	(0.109)
R^2	0.228	0.004	0.456	0.485
Adjusted R^2	0.143	-0.107	0.320	0.141

VII   An Explanation of the Faster Reduction in Urban Poverty in the Post-Asian Crisis Period

The faster reduction in urban poverty during the post-1995 period, as compared to the pre-1995 period, has been due to the faster growth in personal income and, more notably, the reversal of the sharp increase in income inequality in the past. As already noted, the faster growth in personal income during the period was not due to a faster overall economic growth. Indeed, official estimates suggest that the rate of growth in per capita GDP was slower in the post-1995 period than in the pre-1995 period. There was however a change in macroeconomic policies permitting a higher incremental share of GDP to accrue to the households, especially the urban households, perhaps as a conscious policy to promote a high rate of growth in consumer demand during this period of sluggish growth in the rest of East Asia and the world economy. Not enough details concerning macroeconomic accounts are available to analyze this aspect of economic change in urban China.

As analyzed above, the difference in the rates of urban poverty reduction between the two periods has perhaps been even more powerfully influenced by the change in income distribution performance between the two periods. But the effect of change in inequality on poverty reduction is more complex in urban areas than in rural areas. It is hard to see the effect of the change in inequality on poverty reduction in individual provinces, except in a few outstanding cases such as Gansu, because most of the provinces registered an increase in inequality. Overall urban poverty reduction came about due to the faster than average rate of income growth for poor provinces with high initial poverty (notably Shanxi and Henan) – which led to a reduction in inequality for urban China as a whole though not for urban areas of individual provinces - and due to the fall in inequality in provinces with high initial poverty (notably Gansu).

Tables 18 through 20 provide some idea about the factors behind income growth and the change in income distribution between 1995 and 2002. Wages as a source of income has grown at a slower rate than overall income. This is due to the worsening urban employment situation. Employment *per person* in urban China fell by more than nine per cent. This has been due to a dramatic fall in employment in state and collective enterprises caused by the restructuring away from the past system of using employment in these enterprises as a concealed method of unemployment insurance. There has been a rapid increase in employment in private, foreign, joint-stock enterprises and self employment categories; but these have not been fast enough to offset the fall in state and collective enterprises on a *per capita basis.* Net subsidies, which represented mostly housing subsidies in kind in 1995, have drastically declined as a source of personal income. Income from property has also declined though it was very small to begin with. In contrast to the above declining components of income, there was an increase in three components: income from pensions and related earnings of the retirees; income from individual enterprises; and rental value of housing.

Table 18:   Urban Employment (Numbers in Millions)

	1995	2002
Total Employment	190.40	247.80
Total Population	351.74	502.12
Employment per Person	0.54	0.49

Employment Categories

	1995	2002
State and Collective Enterprises	144.08	82.85
Cooperative & Joint Enterprises	0.53	2.06
Limited Liability & Share Holding	3.17	16.21
Private	4.85	19.99
Foreign Incl. Taiwan, Macao and Hong Kong Funded	5.13	7.58
Self Employment	15.60	22.69

Note: The source of the data is the NBS 2003. A cryptic note states that the components do not add to the totals which "have been adjusted in accordance with the data obtained from the 5th National Population Census". This probably means that the components are from independent labor-force type surveys which incompletely count individual employment in informal activities which are captured by the population census.

The change in the composition of income has a close relationship to the change in the concentration of individual components of income. Reduction in employment *per capita* appears to have been accompanied by a change in the structure of earnings making wages a more disequalizing source of income. This was almost certainly due to the decline in the enforced egalitarianism of the structure of wages that dominated the overwhelmingly important state and collective enterprises in the past. Thus, despite the fall in the share of wages in total income, the contribution of wages to the Gini ratio went up from 46 per cent in 1995 to 59 per cent in 2002.[24]

Table 19:   Sources of Urban Income Growth between 1995 and 2002

	Incremental Share (%)	Annual Real Growth (%)
Wage	57.1	6.0
Pensions and Retirees' Income	19.1	10.1
Individual Enterprises	5.9	34.6
Income from Property	-0.4	-5.5
Net Subsidies	-10.8	-16.9
Rental Value of Owned Housing	29.4	13.3
Other	2.7	6.2
TOTAL INCOME	100.0	6.4

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[24] Per cent contribution of a component to the Gini ratio is the product of the income share of the component and its concentration ratio divided by the Gini ratio.

All other sources of income became more equalizing or less disequalizing. Pensions and payments to retirees, including payments made to laid-off workers, have increased significantly as a proportion of income and their concentration ratio has fallen. It appears that compensatory public action to protect the laid-off workers, however inadequate, is behind these changes. Net subsidies were highly disequalizing in the past, their benefits mainly appropriated by the non-poor groups. They have not only been drastically reduced, but their redistributive effect has changed from regressive to progressive. Income from individual enterprises, though still small as a proportion of income, has grown at the fastest rate. They were already strongly equalizing in 1995, indicating that the survey has captured in this category the earnings of those eking out a living in the informal sector. By 2002 the distribution of this component became even more equalizing. Finally, housing reform has shifted income away from in-kind housing subsidy (public and collective housing rented out at nominal rent, which was highly disequalizing) to broad-based home ownership, which is less disequalizing than the distribution of subsidized public housing was in the past. Note that the rental value of housing, though still significantly disequalizing in 2002, is far less so than in 1995. This perhaps signifies that housing reform initially enabled the better-off households to attain ownership, which became broad-based only after the reform was fully implemented.

Table 20:   Sources and Distribution of Urban Income

	Per Cent of Income		Gini/Concentration Ratio	
	1995	2002	1995	2002
Wages	61.30	59.54	0.247	0.315
Pensions/Retirees' Income	11.69	14.78	0.316	0.307
Individual Enterprises	0.53	2.74	0.042	0.037
Income from Property	1.27	0.55	0.484	0.471
Net Subsidies	10.99	1.94	0.491	0.227
Rental Value of Housing	11.39	17.65	0.639	0.378
Other Income	2.84	2.78	0.371	0.359
TOTAL INCOME	100.00	100.00	0.332	0.318

To summarize, the decline in employment and the disequalizing change in the distribution of wages was offset by a combination of factors: public action in providing some protection to the laid-off workers by an increase in pension provisions; a reduction in wasteful subsidies to the rich; a rapid growth in small enterprises; and a broadening of home ownership.

VIII   Poverty Among the Floating Migrants

The 2002 CASS survey for the first time includes a separate sample of floating migrant households. This permits a comparison of income, inequality and poverty between the urban residents (those with resident permit) and the migrants as well as the estimation of urban income, inequality and poverty including the migrants. Combined urban estimates are based on a sample of urban resident and urban migrant households that make migrants approximately 18 per cent of urban population.[25]

On an average a migrant, by moving out of the rural area, nearly doubles the per capita income of his/her household in urban location (not counting any member who might have been left behind in rural areas). But their per capita income is still more than a third below that of the urban residents. Migration enables a person to bridge approximately one-half of the massive gap that exists between rural and urban income. Given the fact that the poverty threshold for the residents and the migrants is the same, this alone would indicate a higher incidence of poverty among the migrants. But the migrants also have a substantially higher inequality in the distribution of income than the residents, which exacerbates this effect. As a result, the incidence of poverty is far greater among the migrants than among the urban residents. Note also that the combined incidence of urban poverty for the residents and the migrants is twice what it is for the residents alone.

Interestingly, poverty incidence for the migrants is very similar to that among the rural population. This is because the poverty threshold for urban areas is about twice as high as the rural poverty threshold. The migrant in China attains a higher income, but, *relative* to the poverty threshold of her/his adopted society, is no better off than she/he was as a member of the rural society.[26]

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[25]   There is little consensus about the size of the migrants. Zai Liang and Zhongdong Ma 2003 puts the figure at 17.2 per cent of urban population for 2000. In this paper we use a slightly higher figure of 18 per cent for 2002. In view of the fact that official statistics show an annual decline of 1.33 per cent in rural population and an annual increase of 5.22 per cent in urban population between 1995 and 2002, this figure appears to be an underestimate unless one allows for the possibility of a substantial number of migrants receiving residence permits and/or substantial areas of former rural locations being designated as urban. Since the CASS sample for the migrant households over-samples the migrants, relative to the residents, the sample for the residents has been augmented by randomly drawing a certain number of households from the original sample and adding them to it to make the proportion of resident population in the aggregate urban sample approximately 82 per cent.

[26] This is a common phenomenon in international migration. An educated Asian, for example, often increases his/her income very substantially by migrating to the United States while often accepting a lower relative economic and social rank in the USA than he/she had in his/her country of origin.

Table 21: **Income, Inequality and Poverty**
Residents, Migrants and Combined Urban Population

	Residents	Migrants	Combined Urban
Per Capita Income (RMB per year)	9766	6365	9160
Gini Ratio	0.318	0.380	0.338
Poverty Headcount (Per cent)			
Upper Poverty Line	2.2	14.4	4.4

Note: The estimates for the combined urban population are directly made from the combined urban sample. That explains why the per capita income for the combined urban population is not exactly same as the weighted average of the per capita incomes of the residents and the migrants.

The upper rural poverty threshold is 38 per cent of per capita rural income while the upper urban poverty threshold is just under 40 per cent of the per capita income of the migrants. The Gini ratio of income distribution for the migrants is slightly higher than the rural Gini ratio. It is thus quite plausible that the incidence of poverty among the migrants is a little higher than it is among the rural population.

The observation that the incidence of poverty is much higher among the migrants than among the urban residents is also borne out by the evidence for individual provinces (Table 22). For each province the average income of the migrants is lower than the average income of the residents, the ratio ranging from 0.53 for Guangdong to 0.84 for Jiangsu. With the exception of Guangdong and Sichuan, the Gini ratio is higher for the migrants than for the residents in each province. Unlike rural and urban residents, the estimates of poverty for the migrants are available at only one point of time. We can therefore only try to explain the difference in provincial *levels* of poverty in 2002. In explaining the difference in provincial poverty levels at a point of time for rural and urban residents, we cited as a major obstacle the fact that, of the two explanatory variables, variability among provinces was far smaller in inequality than in income. This problem is fortunately less serious for the migrants, for whom the variability in per capita provincial income is substantially smaller and the variability in provincial inequality is substantially greater, as compared to the residents.

Table 22:   Income, Inequality and Poverty among the Migrants

	Per Capita Income	Gini Ratio	Broad Poverty			Extreme Poverty		
			HC	PPG	WPG	HC	PPG	WPG
All China	6365	0.380	14.4	4.4	2.5	5.5	2.3	1.6
Shanxi	4768	0.370	27.4	7.2	3.8	8.9	3.5	2.4
Henan	5435	0.362	16.4	4.7	2.7	5.4	2.5	1.8
Anhui	5078	0.362	22.3	7.1	3.5	10.8	3.4	1.8
Yunnan	5885	0.447	20.0	8.0	5.9	10.6	5.7	4.9
Hubei	5192	0.323	17.0	4.5	2.2	4.4	1.8	1.4
Sichuan	6282	0.292	8.0	3.0	2.0	3.5	1.8	1.5
Liaoning	6711	0.365	11.3	3.0	1.4	3.1	1.3	0.7
Gansu	5001	0.409	29.3	7.8	3.2	9.8	2.7	1.1
Jiangsu	9135	0.384	5.1	1.5	1.0	1.6	1.1	0.8
Beijing	8668	0.391	7.5	3.0	1.6	4.9	1.5	0.7
Guangdong	8077	0.306	3.4	1.6	1.1	1.6	1.1	0.8

Table 23 shows the linear and logarithmic regression equations in which income and inequality explain the headcount rate of broad poverty. All the regression coefficients have the right sign and are highly significant. They explain a very high proportion of the variation in provincial poverty of the migrants. The logarithmic equation, explaining virtually all the variation in the dependent variable, shows high elasticity of poverty headcount both with respect to income and inequality. Indeed the logarithmic regression explaining the level of headcount rate of broad poverty by per capita income and inequality for the pooled provincial averages for the urban residents and migrants together has an equally good fit.[27]

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[27] The fitted equation for the 22 observations is as follows: log (poverty HC) = -3.179 log Y +2.773 log Gini. Adjusted R^2 = 0.952 and both the coefficients are highly significant.

Table 23:   Regression Results Explaining the Level
of Provincial Poverty of the Migrants

Dependent Variable: Broad Head Count Poverty   Log Broad Head Count Poverty

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Regressor

	Broad Head Count Poverty	Log Broad Head Count Poverty
Per Capita Income	-0.005	
	(-7.770)	
Gini Ratio	80.883	
	(3.784)	
Log Per Capita Income		-2.659
		(-14.666)
Log Gini Ratio		2.244
		(6.637)
Intercept	16.242	28.037
	(1.817)	(17.552)
R^2	0.907	0.972
Adjusted R^2	0.883	0.965

IX   Factors Explaining the Higher Incidence of Poverty
Among the Migrants than among the Residents

Since higher poverty among the migrants, than among the residents, is explained by
their lower income and the higher inequality of the distribution of income, it is necessary
to turn to an analysis of the sources of their income and the inequality of their
distribution. The relevant story is told by Tables 24 and 25 which describe the sources of
income and its distribution and the distribution of employment for the migrants and
contrast these characteristics with those of the residents.

**Table 24:   Composition and Distribution of Income of the
Migrants and the Residents of Urban China**

	Migrants		Residents	
	Per Cent of Income	Gini/Concen-tration Ratio	Per Cent of Income	Gini/Concen-tration Ratio
Wages	34.4	0.250	59.5	0.315
Individual Enterprise	59.0	0.429	2.7	0.037
Property	0.3	0.189	0.6	0.471
Net Subsidies	-1.0	0.208	1.9	0.227
Rental Value of Housing	4.9	0.658	17.7	0.371
Other (Including Pensions)	2.3	0.408	17.6	0.315
TOTAL INCOME	100.0	0.380	100.0	0.318

By far the highest proportion of the migrants' income, nearly three-fifths, is derived from individual enterprises, a source that contributes less than three per cent of income of the residents. This matches the very high proportion of migrants (58 per cent) and a very low proportion of the residents (less than 6 per cent) engaged in self-employment.

Wages account for a far smaller proportion of income for the migrants than for the residents. This reflects the difference between the two groups with respect to the composition of wage employment. The migrants have very limited access to public sector employment. They are heavily concentrated in informal employment. Seventy per cent employment of the urban residents is still derived from government, official institutions and state-owned enterprises whereas less than seven per cent employment of the migrants is derived from the state-owned enterprises and none from the government agencies and institutions.

**Table 25:   Employment Characteristics of the Migrants
and the Residents of Urban China**

	Migrants	Residents
Per cent of Household Members in Employment	65.0	49.9
Per cent of those Employed in:		
Government and Institutions	-	30.8
Other Non-Enterprise Institutions	-	9.6
Enterprises:		
State Owned Enterprises (Including Local)	6.7	29.5
Urban Collective	3.6	6.1
Private Farm	7.1	3.3
Sino-Foreign Joint Venture	0.5	1.5
Foreign Companies	0.1	0.4
State Share Holding Company	0.4	3.3
Other Share Holding Company	1.8	7.2
Rural Private & Individual Enterprise	11.8	0.1
Enterprises under Other Ownership	6.3	0.4
Self Employed	58.3	5.6
Residual	3.5	2.1

Note: - means zero. For urban residents a two-stage classification is adopted: the first stage consists of (1) Enterprise; (2) Government Agency; (3) Institutions; and (4) "Other"; the second stage consists of a classification of enterprises into ownership categories. For the migrants there is just a one-stage classification into different kinds of enterprises, implying that none is employed in Government, Institutions (probably organizations like teaching and medical institutions) and "Other" categories of non-enterprise employers. Residual category includes those individuals who are shown to be employed without any indication of employment category. Note that the apparent discrepancy between this Table and Table 18 is due to the difference in categories and definitions.

The proportion employed in the other forms of formal enterprises - urban collectives, private firms, joint ventures, foreign enterprises, state and other share holding companies - is also smaller for the migrants than for the residents while the proportion employed in informal (rural) enterprises is much higher for the migrants than for the residents.[28] The result is a much smaller share of income derived from wages by the migrants (34 per cent) than by the residents (60 per cent).

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[28] The "rural" enterprises that employ nearly 12 per cent of the migrant workers and a negligible 0.1 per cent of the urban resident workers may be the "agricultural" enterprises located in the rural periphery of urban districts. Alternatively, this may mean that periodically a proportion of urban migrants revert back to rural areas for employment. The survey is unclear on this subject.

Other notable differences in the composition of income consist of a much lower share of pensions (included in other income category in Table 24) and rental value of housing for the migrants. Indeed the migrants derive insignificant pension income. Their share of the rental value of housing is low because they have not been the beneficiary of housing reform leading to the privatization of housing. Their housing assets are derived entirely from own investment in construction at market cost, or possibly higher than market cost in order to overcome the disadvantage that is caused by the lack of residence entitlement. The migrants are subject to a small net tax while the residents receive a net subsidy. It is worth noting that the survey has not fully captured the discriminatory effect on the migrants' real income due to their lack of access to public services.

One final difference between the income of the migrants and the income of the residents needs to be stressed. Migrants have a higher number of workers per household member, 0.65 as compared to 0.5 for the residents. Thus, while the per capita income of the migrants is 65 per cent of that of the residents, the income per working migrant is only 50 per cent of the income per working resident.

The greater inequality in the distribution of income for the migrants principally derives from the fact that their largest source of income, from individual enterprise, has a strongly disequalizing effect on income distribution. This does not seem to be due to the regional difference in earning from this source. With the exception of Anhui, this source of income has a disequalizing effect on provincial income distribution everywhere. Market return to individual enterprise clearly reflects the considerable difference among the migrants in terms of entrepreneurial ability and resource endowment. Despite significant increase in its differentiation since the beginning of reforms, the wage structure, on the other hand, still enforces a degree of equality among the residents who derive most of their income from wages. The greater inequality among the migrants is also explained by their lack of access to pension and unemployment benefits (included in "other income" in Table 24) which serve as redistributive social protection for the residents. Finally, the migrants' homeownership is subject to greater obstacles than the residents' homeownership which probably explains the greater inequality of the distribution of rental value of housing for the migrants.

To summarize: the greater poverty among the migrants, relative to the residents, is due to their lower income and the higher inequality of the distribution of income. The lower income is a common phenomenon for most migrant groups. In the case of urban China this is exacerbated by the numerous discriminations that the migrants are subject to because of the system of resident permits, which excludes the migrants from more remunerative sectors of wage employment and access to public services. The greater inequality among the migrants is due to the predominance in their income of individual enterprise in which rewards are market-based and hence differentiated according to individual abilities and endowments. It is also due to the exclusion of the migrants from the safety nets that provide a degree of protection to the residents.

X   Conclusions

China's performance in poverty reduction was incomparably superior – nearly four times as fast in rural China and a staggering 50 times as fast in urban China in terms of annual rates of reduction in broad poverty headcount - in the post-Asian crisis period to that in the pre-Asian crisis period. This happened in spite of a lower rate of growth in per capita GDP in the post-Asian crisis period than in the pre-Asian crisis period. The difference in performance in poverty reduction was primarily due to: (a) a faster growth in personal income, albeit highly skewed in favor of the urban areas, during the second period and (b) more importantly, a much better performance with respect to distribution of income in the second period.

The first of the factors may have been due to policy changes in direct response to the Asian crisis. Policy makers in China were clearly concerned about their ability to maintain an increasing incremental share of growth in aggregate demand from external sources and this may have induced them to take measures to redistribute income in favor of the households in the hope of inducing them to increase their consumption. Table 27 summarizes some of the basic facts. Growth in personal income, as a proportion of GDP growth, was far slower in the pre-1995 period than in the post-1995 period. The policy seems to have paid off in so far the precipitous decline in the ratio of final consumption to GDP and the ratio of household consumption to GDP between 1988 and 1995 was arrested over the period between 1995 and 2000. Net exports as a proportion of GDP peaked in 1997 and 1998 and thereafter started to decline.[29] China might not have succeeded in maintaining as high a growth in aggregate demand as actually occurred in this period if the ratio of domestic consumption continued to fall, as it did in the pre-1995 period.

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[29] Table 3-11 of NBS 2003 shows that net exports as a proportion of GDP rose steadily from -1.03 per cent in 1988 to 3.81 per cent in 1997 and 3.86 per cent in 1998. Thereafter it started a steady decline to 2.24 per cent in 2001. In 2002 it stood at 2.60 per cent.

Table 26:   Growth Rates in GDP, Personal Income and Related Data
(Growth rates are annual compounded rates)

Real Growth Rate in Per Capita GDP: 1988-95		8.12
	1995-2002	7.22
Real Growth Rate in Per Capita Personal Income: 1988-95		5.08
	1995-2002	7.06
Final Consumption as % of GDP at Current Price: 1988		0.64
	1995	0.57
	2002	0.58
Household Consumption as % of GDP at Current Price: 1988		0.52
	1995	0.46
	2002	0.45

Note: Real growth rates in per capita GDP are based on GDP and population data in NBS, 2003. Final consumption and household consumption rates are also based on data in NBS, 2003. Real growth rates in per capita personal income are based on weighted averages of rural and urban residents' per capita incomes from CASS surveys. The weights are actual population shares of rural and urban areas. The values on which growth rates are based are at 1995 prices; real growth rates shown in this paper are used to calculate values for other years.

As noted earlier, the principal beneficiary of this policy of redistributing the incremental product in favor of the households were the urban residents. During this period the gap between the growth in urban and rural incomes greatly widened. Per capita personal income growth in rural China was slower in this period than in the preceding period. The much faster rate of reduction in rural poverty was due to a significant decline in the inequality of income during this period as compared to a sharp rise in inequality in the pre-1995 period.

The decline in rural inequality was broad-based. The rural Gini ratio declined in 15 of the 19 provinces that featured in the samples of both years. There was also a decline in inter-provincial inequality. For rural China as a whole the Gini ratio declined by almost 10 per cent. The three main sources of reduction in rural inequality were: the stronger equalizing effect of the distribution of farm income due largely to the continued equality of distribution of land; a decline in the disequalizing effect of the distribution of wage income, which was probably due largely to an improvement in the regional distribution of this source of income; and a decline in the degree to which taxes were regressive.

Underlying both the growth of rural personal income, albeit much slower than the growth of urban personal income and indeed slower than the growth of rural personal income in the past, and the decline in inequality was the overwhelmingly important factor of the rapid decline in rural population. This could not have taken place unless public policy changed in favor of de-facto toleration of migration.

In urban China the remarkably faster reduction in poverty in the post-1995 period was due to a much faster growth in personal income than in the previous period and a modest decline in inequality in contrast to a sharp increase in inequality in the previous period. The decline in inequality in urban China was due to a decline in inter-provincial inequality. Of the 11 provinces in the sample, inequality actually increased in 8 and

remained unchanged in one. For urban China as a whole, in terms of sources of income, the decline in inequality was due principally to three factors: a sharp fall in the disequalizing effect of public subsidies, which actually became an equalizing factor in the distribution of income, though declining sharply as a proportion of income; an increase in unemployment and pension benefits which helped provide at least partial protection to the laid-off workers; and a decline in the inequality of homeownership as housing reform was brought nearer to completion. These factors outweighed the increased inequality of wage distribution which was due to a reform of wage structure in a period of declining urban employment.

Urban migrants, for whom poverty can be estimated only for 2002, had about the same incidence of poverty as the rural residents, but *only because of the much higher poverty threshold by which their poverty was measured than the rural poverty threshold*. The incidence of poverty among the migrants might have been lower if they were subjected to less discrimination, which would have increased their income and reduced the inequality of the distribution of their income. Had the migrants remained in rural areas, the overall poverty in China would have been worse: these migrants would have remained poor *by the standard of a lower poverty threshold* and would almost certainly have dragged down a higher proportion of the remainder of the rural population into poverty by competing with them for the meager supply of land and other rural resources.

Policy Response behind Some of the Changes

In Khan 1998 and Khan and Riskin 2001 the principal causes of the slowdown in poverty reduction in China between 1988 and 1995 were identified as: (i) the increase in inter-regional inequality; (ii) slow and disequalizing rural income growth; (iii) regressive transfer to households and reduced transfer from rich to poor provinces; (iv) slow employment growth; and (v) discriminatory treatment of migrants. It appears that there has been important policy response to deal with a number of these problems in recent years. China's poverty reduction strategy was significantly restructured around the turn of the millennium. A "National Poverty Reduction Conference" was held in June 1999 and an "International Conference on China's Poverty Reduction Strategies in the Early 21st Century" was held in May 2000 under the joint auspices of the government of the PRC, the World Bank, the United Nations Development Programme and the Asian Development Bank. Following these deliberations, the government issued a new program in October 2001 called the "Outline for Poverty Alleviation and Development of China's Rural Areas (2001-2010)". This plan emphasizes agriculture and farm production; the provision of education and training to the poor; the use of science and technology to promote the productivity of the poor; and the facilitation of out-migration and voluntary resettlement of people from ecologically disadvantaged areas. In February 2000 the State Council adopted the "Great Western Development Strategy" which initiated a new approach for the promotion of economic development in all the western provinces as well as the relatively poor provinces in the central region. The Leading Group for Western Region Development was established, with the Prime Minister as the Chair, and an executive body, the Western Region Development Office, with the State Development Planning Commissioner as the Chair. The program has led to a large

increase in investment in infrastructure development in this region. While the strategy is not directly focused on poverty reduction in the western region, it is highly likely that improved public expenditure in these poor provinces has started benefiting the poor and, more importantly, has served as the impetus for reduced inter-provincial inequality.

A third element of the redirection of poverty reduction strategy in the late 1990s is the adoption of a program for the protection of the urban poor. Three instruments designed for this purpose are: (a) a living allowance for laid-off workers, which is the largest, though a transitional, program; (b) unemployment insurance, which has been replacing the transitional living allowance for the laid-off workers; and (c) the Minimum Living Standard Scheme (MLSS), which is a subsistence allowance paid out of the general revenue of the government.[30] As discussed above, the increase in the share of these items in urban household income and the improved distribution of this source of income have been a significant factor behind the reduction in urban inequality between 1995 and 2002.

Significant improvements have also taken place in reducing the disequalizing effect of the system of subsidies and taxes and at least a de-facto promotion of migration. The problem of employment growth in rural areas has eased, largely due to migration, but the problem of urban unemployment still remains serious, though some of its worst consequences have been partly alleviated by the system of protection described above.

This paper has noted the need and scope for further progress in all these areas. One area in which success has been far less than the others is the reduction of China's massive disparity between urban and rural income by promoting a faster growth of rural incomes. It is noteworthy that despite the reduction in rural and urban Gini ratios between 1995 and 2002, the overall Gini ratio for China as a whole remained virtually unchanged at 0.45 over the period due to a rise in urban/rural inequality.

One can think of three kinds of strategies to bring about a faster growth in rural income: an improvement in agriculture's terms of trade; a program for the rapid promotion of non-farm rural activities; and a more rapid and non-discriminatory system of migration from rural to urban areas.

The failure to maintain improved terms of trade for agriculture after 1996 seems to be a complex phenomenon. During this period the reform for WTO accession appears to have limited the sustainability of high producers' price for farm products which had been introduced in 1994. It appears that the government had hoped that the official monopoly of procurement by the grain bureau would enable the latter to pass on the high procurement price to the buyers. This proved impossible due to the *de facto* operation of market forces in grain trade. As a result the grain bureau ended up with huge debts.[31] The response of the government was to sharply reduce the volume of grain purchased at the

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[30] For details see, ADB 2002.
[31] It is widely believed that the loss sustained by the grain bureau was also partly due to corruption in trading.

guaranteed high price. The farmers were forced to sell the large remainder of the marketed output in the open market where price was far lower than the official support price. Currently the government is reforming the system of grain purchase by abandoning the official monopoly of the grain bureau. As an outcome of these consequences, the weighted average producers' price fell below the official support price. With the exception of rice, domestic prices of grains are currently the same as or higher than the world price. It therefore seems that improving agriculture's *net barter terms of trade* by raising producers' price is not a sustainable policy. Some possibility of reducing input prices may exist in so far as the domestic price of fertilizer appears to be higher than the world price. Future improvement in farm income must however be based on improved *single factoral terms of trade* for agriculture by way of increased labor productivity. The success of this critically depends on the liberalization of the labor market so that agriculture can shed its surplus labor for employment elsewhere.

The promotion of rural non-farm activities must deal with the problem that this has so far been a strongly disequalizing source of income and its disequalizing effect on the distribution of rural income has been increasing rather sharply. Thus an increase in rural income and a reduction in rural poverty by the promotion of non-farm activities must simultaneously implement measures to improve the access of the poor to these activities.

Migration has helped ease the problem of rural poverty and its continuation is highly desirable. Political limits of feasible migration are probably close to being reached especially if one considers the urgency of reducing the discrimination that urban migrants are now subjected.

Thus a policy of improved rural income must combine all three policies: improving factor productivity in agriculture; promoting rural non-farm activities while improving the access of the poor to these activities; and continuing an orderly flow of labor out of rural areas.

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