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Social Benefits in Urban China: Determinants and Impacts on Income Inequality in 1988 and 2002

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ABSTRACT

This study provides the first set of empirical evidence on the determinants of social benefits received by urban Chinese families and their impacts on income inequality using the China Household Income Project (CHIP) 1988 and 2002 data. It finds that the urban total social benefits strongly targeted the bottom pre-tax pre-transfer income decile. Cash transfers were negatively associated with pre-tax pre-transfer income distribution in both years, while important in-kind benefits—namely health and food in 1988 and education in 2002—were positively related to pre-tax pre-transfer income levels. The presence of elder members and higher education levels were significantly related to more total social benefits. The urban social benefits played a significant role in income inequality reduction in both 1988 and 2002, but they were not able to close the rising income gap driven by growing market income inequality during the period. As a result, post-tax post-transfer income inequality level was still higher in 2002 than in 1988.

I. Introduction

The growing income inequality in China since the economic reforms has drawn broad attention. Official statistics show that the value of Gini Coefficient rose from 0.33 in 1980 to 0.40 in 1994 and to 0.46 in 2000 (Chang, 2002). Using the largest national household survey data conducted by the National Bureau of Statistics (NBS), Wu and Perloff (2004) found China's income inequality increased from a Gini Coefficient of 0.31 in 1985 to 0.42 in 2001. This largely follows the Kuznet curve hypothesis that economic growth and development is initially associated with increasing inequality[1] (Riskin, 2005; Wu & Perloff, 2004).

Inside China, however, there have always been two tales of the overall story—the urban and rural ones—due to the rural-urban division, established as the household registration system since 1955. Although urban and rural income inequality have both increased substantially since the mid-1980s, urban inequality was lower than rural inequality, but has grown faster (Wu & Perloff, 2004; Wu & Treiman, 2004). Urban relative poverty increased from 2% in 1988 to 10% in 2002[2]. Such transitions happen along with two major background changes. First, the economic reforms have much enlarged the market income gap in urban areas, which had been kept very narrow under the old "iron bowl" system. Some less advantaged have been left behind by the market economy and become the "new urban poor." Second, as shown in the last article, a series of social benefit reforms have been carried out since the early 1980s and have resulted in significant cutback in the share of social benefits out of urban families' post-tax post-transfer household income.

[1] Some argue that, in contrast to the prediction of the Kuznets curve, income inequality in China will still rise for an extended period even though its economic growth has somewhat leveled off (Riskin, 2005; Wu & Perloff, 2004).
[2] Source: author's calculation using the China Household Income Project (CHIP) data. Relative poverty is measured as 50% median income of urban and rural areas, respectively. Income is measured as per capita household post-tax post-transfer income, including market earnings, social benefits, and private transfers, less taxes and fees.

One of the major objectives of a nation's social benefit system is to reduce its income inequality (Barr, 2001; Garfinkel, 1996). Although there has been a big body of literature on income inequality trend in urban China, no prior study has been found to explore the role of social benefits in this trend. This article makes a first effort to examine the impact of social benefits on income inequality in urban China in 1988 and 2002 using the China Household Income Project (CHIP) national survey data.

This article attempts to answer two closely related research questions. First, at the micro level, how did pre-tax pre-transfer market income and other household characteristics affect levels of social benefits that urban households received in 1988 and 2002? Second, at the aggregate level, how did social benefits change income distribution and affect the overall urban income inequality during the same time period?

The next section reviews the existing literature on income inequality trend in urban China since the economic reforms. Section III introduces the data and measures and methods used in this study. Section IV shows descriptive statistics of household demographics by pre-tax pre-transfer income distribution in 1988 and 2002. To answer the first research question, Section V presents results of cross-tabulations and regression models on the associations between household pre-tax pre-transfer market income as well as other demographic characteristics and social benefit levels. Section VI answers the second research question and shows the results of social benefits' impact on overall income redistribution and inequality. Section VII concludes.

II. Recent Income Inequality Trend in Urban China

Urban income inequality has been rising steadily since the economic reforms, especially since the early 1990s. Table 1 presents the Gini Coefficient estimates in urban China during recent years in the literature. Official NBS estimates indicated that Gini Coefficient increased

constantly from 0.23 in 1990 to 0.32 in 2001, with only one declination over the period (from 0.30 in 1994 to 0.28 in 1995) (Li, 2003). The World Bank estimates show that the value of Gini Coefficient increased from 0.17 in 1987 to 0.25 in 1991 and 0.33 in 2001 (Chen, Datt, & Ravallion, 2004). Wu and Perloff (2004) tracked income inequality from 1985 to 2001 using NBS publicly available summary statistics by income interval and found almost consecutive increases in Gini Coefficient over the years, from 0.191 in 1985 to 0.269 in 2001. Their estimates are lower than those made by others possibly because of the different data source—summary statistics based on household survey data rather than the actual survey data—that they used.

A set of different studies verified this trend using NBS household survey data (Chang, 2002; Li & Yue, 2004). They found that income inequality increased from 0.23 in 1988 to 0.28 in 1995 and 0.319 in 2002. Using the same data, Fang, Zhang, and Fan (2002) found that income inequality rose from 0.244 in 1992 to 0.302 in 1995; after a slight declination in 1996 (0.298), it increased to 0.312 in 1998. Using the CHIP survey data, researchers found that income inequality increased from 0.233 in 1988 to 0.332 in 1995, then declined slightly to 0.318 in 2002 (Gustafsson & Li, 1999; Khan & Riskin, 1998, 2004; Meng, 2003).

All studies reviewed above used per capita household disposable income to generate the Gini Coefficient estimate, which included cash incomes from social benefits but ignored major in-kind or reimbursed benefits such as health, education, housing, and other in-kind benefits from the work unit. Further, simply lumping market income and cash transfers could not provide a clear picture of the contribution of government social benefits on inequality reduction. This article addresses these weaknesses.

III. Data, Measures, and Methods

Data

This analysis uses data from the China Household Income Project (CHIP) 1988 and 2002 surveys collectively designed by a group of Chinese and Western economists and conducted by the Institute of Economics, Chinese Academy of Social Sciences (CASS) (Griffin & Zhao, 1993; Li & Knight, 2004). The surveys were conducted in 1989 and 2003, collecting income data for respective previous years. Because the welfare reforms happened since the early 1980s and the most significant changes occurred from the late 1980s, this study tries to approximate the urban social benefits before and since the reforms. Samples of the CHIP study were drawn from larger samples of the National Bureau of Statistics (NBS) using a multistage stratified probability sampling method. Sampling units—namely province, city, county, township, village, and household—were ranked in order by average per capita income at each level, then a random starting point was selected and a fixed interval was used such that the designed number of units was satisfied. Appendix Table 1 presents the sample design of the two waves of data. More details on the design and sampling methods of the CHIP surveys can be found in Eichen and Zhang (1993).

To make the analytical results compatible over the period, I limit the sample to the ten provinces sampled in both years, which are grouped into three regions: eastern (Liaoning, Jiangsu, and Guangdong), central (Beijing, Shanxi, Anhui, Henan, and Hubei), and western regions (Yunnan and Gansu). There are 8,996 households and 31,775 individuals in the 1988 sample and 5,969 households and 18,109 individuals in the 2002 sample.

Measures

Household Income

The household post-tax post-transfer income is measured by the sum of pre-tax pre-transfer market income, social benefits, and private transfers, subtracting taxes and fees paid, in

both 1988 and 2002. I aggregate the incomes at household level, but keep the analysis at individual level. To do this, economic resources are assumed to be equally shared among household members, regardless of age, gender, and employment status. Thus all analyses in this study are based on annual per capita household income[3]. Individuals or families who reported that they did not receive certain types of income or to whom certain income types were not applicable were imputed zero income for those types. All other missing values (which are in most cases very few)—except for health benefits in 1988 and education benefits in both years that are imputed using administrative data—are imputed using multiple regression models controlling for individual and household socio-demographic characteristics.

Pre-tax pre-transfer market income consisted of four portions in both years: 1) market earnings from working for an employer; 2) market income from one's own private enterprise or self-employment; 3) property income; and 4) rental value of owner occupied housing. Market earnings from working for an employer made up the biggest portion of market income. These included salary (including bonus) from working for an employer, wage from secondary jobs, and other incomes from compensation (*peichang*)[4], fees paid by relatives or friends who regularly ate in, and in-kind incomes from others as a form of payment. Each individual in the household was asked about their incomes from each source in both years. The individual incomes were summed at the household level and divided by household size to yield household per capita values.

[3] Different equivalent scales have been proposed and adopted in existing literature, mostly when studying the Western industrialized nations. Some scales are proposed for studying developing countries, but there seems no particular fit for urban Chinese households. I also ran the results using the OECD equivalent scale that accounts for household size by dividing household income by the square root of household size (Atkinson, Smeeding, & Rainwater, 1995) and the result patterns largely remain the same.

[4] "Income from compensation" was not clearly defined in the surveys, so they were based on whatever interpretation the survey participants were having.

Those who had private enterprises or were self-employed were asked about their incomes from such work activities, less taxes and fees paid[5]. Property income included incomes from interests on saving accounts and bonds, dividends, subletting housing and other properties, intelligent property, and other properties. Rental value of owner occupied housing is measured by subtracting debt or loan on housing from estimated market rent of housing. The 1988 market value of rent was not directly asked in the survey and thus is estimated by a formula adopted by the CHIP Research Team (1993), accounting for both provincial construction cost at the time and sanitary facilities of the house as reported by survey participants[6]. In 2002 families were asked to estimate the market rental value of the housing. Rental value of owner-occupied housing is then imputed by subtracting self-reported debts or loans on housing from the estimated market rental values of housing. The rental value of owner occupied housing made up 8% of household pre-tax pre-transfer market income in 1988 and 5% in 2002.

Private transfer incomes were directly obtained from survey questions and included alimony, elderly support, gifts, and other transfers from family, friends, or relatives in both years.

Taxes and fees paid by household were asked in both waves, but in different manners. The 1988 survey asked about taxes and fees paid for individual private enterprises, but did not ask about personal income taxes and obligated social insurance contributions (including pension, housing account, health, and unemployment insurance contributions), while the 2002 survey did exactly the opposite. This may lead to underestimation of taxes and fees in both years. It was true

[5] In 1988 taxes and fees paid for private enterprises or self-employment were asked separately, and then subtracted from the total reported pre-tax pre-transfer income from this type of employment. In 2002, families were directly asked to report the net income from private enterprises or self-employment. Thus the two years' data are compatible in this regard, but it was impossible to know the amount of taxes and fees paid for private enterprises or self-employment in 2002.

[6] The formula is: rental value of public housing=.08*C*(total living area square meter + auxiliary area square meter)*(1+s), where C is provincial construction cost per square meter and s is an index for sanitary facilities in housing (s=-.33 if house lacks sanitary facilities; s=-.25 if house shares sanitary facilities; s=-.15 if house has toilets but lacks bath; and s=-.10 if house has both toilet and bath. I adopted the values of C and s from CHIP 1988 SAS program for computing income at ICPSR.

that personal income taxes and social security contributions were insignificant in 1988, while taxes on individual private enterprises in 2002 might also be small given that only a small portion of individuals were engaged in this type of employment. However, it is difficult to know the exact magnitude of both to get a clear understanding of which year's underestimation is larger.

Using these self-reported measures of taxes and fees is an unsatisfactory estimation method. The best solution is to conduct a balance budget tax simulation to fully finance the social benefits. However, two considerations hinder such an exercise. First, beyond individual or household taxes, one major financing source of the Chinese government has been firm or enterprise taxes, especially before the economic reforms. Theoretically, firm taxes are de facto taxes from employees; such taxes should be calculated as part of their pre-tax pre-transfer market income and then subtracted as part of taxes paid. However, there is no clear regulation or evidence about what portions of social benefits were financed by firm taxes and individual taxes that could be used for taxation simulation.

Second, even though the taxation schemes for urban and rural areas are different, it is very likely that the Chinese government pools the budget and reallocates resources across the urban-rural division. Thus it is incorrect to assume balance budget taxation within the respective urban or rural areas. Moreover, there is also no evidence about what portions and types of rural or urban taxes were used to finance social benefits, which makes it impossible to simulate taxes across the urban-rural division line.

Therefore, the complex taxation issue is beyond the scope of this study and only self-reported taxes and fees are adopted as the best available measure. Future work may explore the

financing scheme of social benefits in China in detail and develop better measures of taxes at the micro level.

Social Benefits

Both government and employer provided benefits are considered social benefits in this study. Most work units before reforms were public institutions, or state-owned or collective enterprises. Even though many employment-related benefits were directly financed by the operational expenses of each work unit, the ultimate responsibility was borne by the government because work units were appendages of the state and were not responsible for their profits and losses (Leung, 2003; Saunders & Shang, 2001). Even since the economic reforms, still more than half of all urban employees work in such institutions or enterprises. Given the socialist nature of these work units, benefits provided by them should be counted as social benefits.

For the minority who were employed at private institutions or enterprises, the current analysis also consider the benefits they received from employers as social benefits. The main reason is that such benefits function similarly as public benefits in supporting families. Therefore they are same as social benefits from the viewpoint of the households. However, this might be a weakness. Future research could address this issue by either separating out benefits provided by private enterprises or dropping such benefits from the total package.

Cash Transfers

Cash transfer benefits are grouped into three sub-types: social insurance, supplementary income, and public assistance. Values of all sources of cash transfers were directly asked in the survey and they were summed at the household level and then divided by household size to calculate per capita values. In 1988, social insurance was composed of pension and retirement subsidies for retirees. Supplementary income included one-child subsidy and living subsidy for

heating, water and electricity, books and newspapers, bath and haircut, transportation, and rational fuel supply. Hardship allowance was the only type of public assistance that families received in 1988.

In 2002, retirement subsidies were eliminated and only pension comprised social insurance. Supplementary income included price and regional subsidies. In addition to hardship allowance, living subsidy for the laid-off and Minimum Living Standard Assurance subsidy made up of public assistance in 2002.

Health

Health benefits are measured differently in 1988 and 2002. Health benefits in 1988 were not directly asked in the survey. They are thus imputed by administrative data on provincial level per capita public expenditure—including both government and employer—on employee health care. The administrative data differentiate public health expenditures on employees at three types of employers—state, collective, and other enterprises—and retirees[7]. Public institutions were treated as state enterprises.

Provincial per capita health expenditure on current employees are obtained by dividing provincial total health spending (National Statistical Bureau & Ministry of Labor, 1989) by number of employees (China Labor Yearbook Editorial Group, 1991) according to employer type. Provincial per capita health expenditure on retirees are calculated in a similar manner based on data from *China Labor and Wage Statistical Yearbook 1989* (National Statistical Bureau & Ministry of Labor, 1989). Such administrative data are then imputed to individuals according to

[7] Administrative data on public health expenditures for retirees from different types of employers do exist. However, the survey data do not contain information on retirees' employer type. Therefore provincial per capita public health expenditure on retirees is computed by dividing total public health expenditures on retirees across employment types by the total number of retirees.

their employment status and types. Appendix Table 2 presents the provincial per capita health expenditure administrative data in 1988.

For example, suppose we have a family from Beijing with four members: a middle-aged couple, a retired elder person who is one of the couple's parents, and a teenager who is the couple's child studying at school. Suppose one of the couple worked at a state enterprise and the other worked at a collective enterprise, they will get the values of ¥186.46 and ¥111.57, respectively, for their health benefits. The retiree will get imputed the values of ¥394.32 for health benefits and the student will get zero. Their health benefits are then pooled, yielding a total of ¥692.35, and divided by household size to get the household per capita health benefit of ¥173.09.

The 2002 survey directly asked individuals the amount of health care fees paid by either government or employer and the cash value of in-kind health benefits provided by employer. These benefit values are summed at household level and then divided by household size to get per capita health benefit in 2002. The household per capita health benefit using this measure is ¥594 (¥587 if in-kind health benefits from work unit are not counted).

The inconsistency in measuring methods across the two years may affect the results and thus is of concern. Administrative data in 2002 are used to estimate individual level health benefits as a sensitivity test, so as to be compatible with the data source from 1988. Per capita public health expenditure in 2002 is obtained through dividing provincial total health expenditure by government, employers, and individual contributions by the total number of contributors (including both employees and retirees). I then use two approaches to impute micro level data. One is to assign the provincial per capita health expenditure to individuals who reported that they contributed to health insurance, which results a per capita health benefit of ¥118. The other is to

estimate the provincial level proportion of contributors out of total numbers of employees and retirees, and then impute provincial per capita health expenditure to all employees and retirees adjusted by the proportion. For example, administrative data show that in Beijing, 43% employees and 62% retirees contributed to health insurance in 2002. Then each individual residing in Beijing who is an employee in the micro data is imputed a health benefit of ¥491 (43% of the aggregate per capita health expense of ¥1,135) and each retiree is imputed ¥703 (62% of ¥1,135) as health benefit. The imputed individual level benefits are then summed at the household level and divided by household size to get the per capita measure. This approach yields a per capita health benefit of ¥174. Both approaches of the sensitivity test result in a much lower level of health benefit than the self-reported value.

The difference between the 2002 estimations using survey data and administrative data is somewhat worrisome. No clear evidence shows the source of such inconsistency. However, there is no reason to question the quality of the self-reported survey data which are the main source of this analysis. Therefore, I consider the survey data estimate to be more reliable and adopt it for this study. Such inconsistency will still be borne in mind and will be further explored through future endeavors.

Education

Education benefits are imputed using administrative data on provincial per capita education expenditure by education level in both years. Provincial per capita education expenditure data are derived from the China Education Expenditure Statistical Yearbook (CEESY) 2003 and China Provincial Education Expenditure Annual Development Report 1989. The 1988 data do not distinguish urban and rural expenditures. Therefore the national average education expenditure is imputed to each enrolled student according to his or her school type

(elementary or junior high school). The 2003 data differentiate elementary school and junior high school expenditures for urban and rural areas to reflect the existing government education investment gap for the two groups. However, they only provide direct data on overall provincial level per capita expenditure as well as per capita expenditure in rural areas. To estimate the urban per capita education expenditure for elementary school and junior high school students, I use the following formula to calculate:

$$E_{urban} = \frac{E_{all} N_{all} - E_{rural} N_{rural}}{N_{urban}}$$

where,

E	denotes per capita education expenditure
N	denotes total number of students enrolled
all	denotes overall provincial level
urban	denotes urban areas within a province
rural	denotes rural areas within a province

The numbers of enrolled students are from China Statistical Yearbook (CSY) 2003. The CSY 2003 provides number of students by three geographic classifications[8]: urban areas (chengshi), counties and towns (xianzhen), and rural areas (nongcun). There is no formal documentation on the classification rules of the three areas. Because the majority enrolled students in "county and town" schools are from villages, and the county and town per capita expenditures are closer to those in rural areas, I assume the counties and towns are part of rural areas[9]. Appendix Table 3 presents the provincial per capita health expenditure administrative data in 1988 and 2002.

This measure does not capture three types of other important education benefits in the Chinese context: 1) early childhood education and care (ECEC) benefits; 2) high education

[8] CSY 2003 provides data on the number of combined senior middle school and junior middle school enrolled students as well as number of senior middle school students only at each of the three areas. I subtracted senior high school students from the total to yield the number of junior middle school students.

[9] I also tried treating "counties and towns" as part of urban areas and it did not make a big difference in the final results.

benefits; and 3) other cash or in-kind education benefits provided by employer. First, ECEC benefit was only asked in the 1988 survey but not in 2002, while there lack administrative data on ECEC in China to do imputation. Second, administrative data on high education (technology or vocational school, normal school, and college or university education) are available in both years. However, students in such high education institutions often lived at campus dorms in both years and thus were most likely not covered in the household surveys. Third, some employers—particularly public institutions and state and collective enterprises—often provided other cash or in-kind education benefits such as advanced training and educational materials to employees, especially before and during the early stages of the reforms. The 2002 survey asked about such education benefits from employers, but such questions were not included in the 1988 survey. To be consistent, this study does not count this type of education benefits.

Housing

Both in-kind and cash housing benefits were asked in the two years' surveys. In 1988, families were asked whether they were living in public housing. If yes, the rental value of their housing is imputed using the same formula as used in imputing owner-occupied housing rental value (CHIP Research Team, 1993). In 2002, families were also asked whether they were living in public housing and if so, what its estimated market rental value would be. The in-kind public housing benefit is thus calculated as the rental value of housing subtracting self-paid rent, if any. In addition, both surveys asked about any additional cash or in-kind housing benefits from employer. All housing benefits are summarized at household level and then divided by household size to yield household per capita housing benefits.

Food

Food assistance in 1988 included families' report about incomes from price subsidies for non staple food received by both working and non-working members, food ration coupon subsidy, and values of food in-kind received as "welfare good." In 2002, food benefits had been much reduced due to policy changes and families were only asked about values of any in-kind food items received from their workplaces.

Other In-kind

Other in-kind benefits in 1988 included values of daily-use and durable goods in-kind received as "welfare goods" from the government and other in-kind items from workplace. Note that many other in-kind benefits, such as free water supply in house, employer-paid home phone service, and even baths taken at workplace bathhouse, were also asked in the 1988 survey, but the values of such items were difficult to impute. Thus they are not presented in the results of this study. This, however, may lead to underestimation of the 1988 public benefits, mostly from employers. In 2002 families were asked to report the values of any clothing, home equipments or services, communication and transportation, and other miscellaneous goods or services (beyond health, education, housing, and food) provided by employers.

Comparing 1988 and 2002

To compare the levels of incomes and benefits across the two years, Consumer Price Index (CPI) is adopted to change 1988 values to constant 2002 values. From the calculations based on official urban CPI data (NBS, 1996, 2004), 39.7 Yuan in 1988 is equal to 100 Yuan in 2002 in constant value. Thus, all 1988 nominal values are divided by 39.7 and multiplied by 100 to be transformed to 2002 constant values.

Demographic Characteristics

Several major household head demographic characteristics are considered important in determining household income and social benefit levels. Household head was self-identified by the households in answering the surveys, conventionally but not always, referring to the most educated working member of the household. Household head's age, ethnicity (minority or Han), marital status, gender if unmarried, Chinese Communist Party (CCP) membership, education level, and employment status and type are considered.

Age is measured as a continuous variable. Ethnicity and CCP membership are dichotomous variables, with the value of 1 when household head is ethnic minority or a CCP member. Household heads are classified into three categories according to their marital status and gender: married, unmarried female head, and unmarried male head. Education level is measured in five categories: primary school or less, junior high school, senior high school or equivalent secondary technology school, junior college (two-year college called *dazhuan*) or some college, and college education or above. Employment status is categorized into four groups: employed at public institutions, state-owned, or collective enterprises; employed at other types—mainly private—institutions or enterprises; retired; and unemployed.

At the household level, household size and region of residency are considered. In addition to measure overall household size, I also calculate the numbers of children (less than 18 years old), elders (older than 60 years), and other adults (aged between 18 and 60). The three regions are eastern (including Liaoning, Jiangsu, and Guangdong provinces), central (Beijing, Shanxi, Anhui, Henan, and Hubei), and western regions (Yunnan and Gansu).

Income Distribution and Inequality

The pre-tax pre-transfer income decile reflects the relative position of a household along the market income distribution. It is a strong determinant of levels of social benefit received by

households, particularly means-tested benefits. Pre-tax pre-transfer income decile itself is usually an outcome of various demographic characteristics such as age, gender, ethnicity, marital status, education, and employment status.

Income inequality is measured in two broad approaches. The first approach is to compare the income share held by each pre-tax pre-transfer income decile, which comprises 10% of the total population. The more income shares by the top income decile groups or the less income shares by the bottom income decile groups, the higher the overall income inequality.

The second approach is to adopt several major income inequality indices, including the p90/p10 decile dispersion ratio, the Gini Coefficient, and the Atkinson Index. The p90/p10 decile dispersion ratio reflects the gap between the richest and poorest income groups of the society. However, it only takes two points of data along the income distribution and ignores the other parts. The Gini Coefficient is the most widely used inequality measure because of its independence from income mean and population size and its sensitivity to income transfers between population groups. The Atkinson Index is one of the few inequality measures that explicitly incorporate normative judgments about social welfare. Its parameter *e* reflects the strength of society's preference for equality. Typically used values of *e* include 0.5, 1, and 2. As *e* rises, society attaches more weight to income transfers at the lower end of the distribution and less weight to transfers at the top (Atkinson, 1970; Kawachi, 2000).

Methods

Estimating the Determinants of Social Benefits

The first research question of this article concerns the relationship between pre-tax pre-transfer market income and other demographic characteristics and levels of social benefits that households received. The dependent variables include levels of total household social benefits as

well as social benefits by domain (cash transfers, health, education, housing, food, and other in-kind). Three sets of independent variables—household head demographics, household characteristics, and pre-tax pre-transfer income decile dummies—are included.

Two steps are taken to find the answers to this research question. First, the average social benefit levels are summarized by pre-tax pre-transfer income decile and other demographic groups to identify association patterns between the two sets of variables. Second, I use OLS regression models to detect significant determinants of social benefit levels[10]. One particular purpose is to understand the effects of demographic characteristics on social benefits controlling for pre-tax pre-transfer market income.

Estimating the Impact of Social Benefits on Income Inequality

As shown by the results of an earlier study (Gao, under review), the difference between pre- and post- transfer incomes is mostly due to reallocation of government and employer social benefit[11]. Therefore, the change in income inequality from the pre- to post-transfer level is considered the impact of social benefits. It is important to note that behavioral effects of the social benefits are beyond the scope of this study and ignored in the current analysis. Empirical evidence suggests that more generous cash social benefits often lead to decreased labor supply, while withdrawing benefits can result in increased market work. On the other hand, the effects of education and health are likely to increase effective labor supply.

Using the first approach of measuring income inequality, i.e., comparing income share across pre-tax pre-transfer income deciles, I examine the gaps in income shares by each pre-tax pre-transfer income decile—especially the bottom and top deciles—before and after social benefit transfers. Compared to the second approach which only uses summarizing indices, this

[10] I do not run regression models on whether families receive certain domains of social benefit because most families did receive all of these benefits and the Ns for non-recipient were often quite small.
[11] The values of private transfers and taxes and fees paid are both quite small.

approach shows in more detail the redistributional dynamics of social benefits along the income distribution.

When using the second approach of measuring income inequality, i.e., adopting the three income inequality indices, I estimate two differences: value change, calculated as the difference between pre- and post-transfer income inequality levels, and percentage change, which is equal to the value change as a percentage of the pre-tax pre-transfer income inequality level. The larger the percentage change in 1988 or 2002, the bigger the redistributive role of social benefits in that year, given that percentage change—rather than value change—measures the impact conditional on the pre-tax pre-transfer income inequality level.

IV. Descriptive Statistics of Demographic Characteristics by Pre-tax Pre-transfer Income Decile

Household Head Demographics

Table 2 presents the demographics of household heads by pre-tax pre-transfer income decile. Overall, household heads averaged 44 years old in 1988 and 48 years old in 2002. The four-year increase of household head age reflected the increasing delay in marriage and child rearing over the period. The bottom deciles tended to have older household heads (the average age was 48 in 1988 and 62 in 2002) than those in other deciles in both years. The household heads of the bottom two deciles in 2002 were particularly older than those in 1988 and in other decile groups of 2002, corresponding to the incremental aging process, particularly in urban areas, in China since the economic reforms[12].

There were more unmarried households in 1988 than in 2002. Households whose heads were unmarried were more likely to be at the bottom pre-tax pre-transfer income decile in both

[12] National administrative data show that the portion of elders aged 65 and above increased from 5.57% in 1990 to 8.16% in 2002 (NBS, 2004).

years, especially in 1988. The proportion of ethnic minorities did not change much across the two years and seemed not related to pre-tax pre-transfer income distribution in either year. In 1988, CCP membership was clearly positively related to pre-tax pre-transfer income level. Such a pattern largely maintained in 2002 except that the bottom income decile had a more than the average proportion (40% relative to the average of 38%) of CCP members.

Household education levels appeared to be positively related to market income levels, to a much greater degree in 2002 than in 1988. Households whose heads had primary school or less education were disproportionately at the bottom of the pre-tax pre-transfer income distribution in both years. Consistently, households whose heads had more than senior high school education—particularly those with college education or above—concentrated at the higher end of the income distribution, more so in 2002 than in 1988. Such a phenomenon corresponds to the observed trend that education—rather than family background—had been playing an increasingly significant role in upward mobility and socioeconomic achievement since the economic reforms.

In 1988, the vast majority (92%) of household heads were employed at public institutions or state-owned or collective enterprises. Only 2% were employed at private institutions and 7% were retired. None of the household heads were unemployed in 1988, corresponding to the pre-reform "full-employment" policy that was largely in place even at the beginning stage of the reforms. In 2002, only half of household heads were employed at public institutions or enterprise[13]. The proportion of those employed at private institutions increased to 20%. The retired made up of a quarter of all household heads in 2002, partly due to increasing aging during the period and partly because of the newly emerged forced "early retirement" from state-owned or collective enterprises at a younger age (usually 55 for male and 50 for female employees).

[13] The 2002 data show that households with heads working in public institutions received more benefit than those in state-owned or collective enterprises. However, because 1988 data could not distinguish between the two types, they were combined in both years so that the data are comparable across the two years.

Four percent of household heads were unemployed in 2002. In both years, the bottom pre-tax pre-transfer income deciles were dominated by households with heads who were retired. The bottom three deciles—in particular the 2nd—had disproportionately more unemployed household heads in 2002.

Household Characteristics

Table 3 presents household size, the numbers of members of different age groups, and region of residency by pre-tax pre-transfer income decile in both years. Overall, household size reduced from 3.84 in 1988 to 3.24 in 2002, with the number of children nearly halved (from 1.05 to 0.59) and the number of elders increased (from 0.27 to 0.36). Households with more children appeared to have less market incomes in both years, with the exception of the bottom decile in 2002. In contrast, households at the lower end of income distribution disproportionately had more elder members, most noticeably in the bottom decile in 2002. This may explain why the bottom decile had fewer children in 2002 than in other groups. Consistently, the bottom decile also had significantly fewer other adults in 2002 relative to that in 1988. These facts verified that the presence of elders in households largely determined the lag in market income in both years, particularly to a greater degree in 2002.

Consistent with the literature, households living in the most developed eastern region disproportionately concentrated at the higher end of the income distribution, while those in the other two regions were more likely to be at the lower end of the distribution in both 1988 and 2002. Strikingly, such trend was more predominant in 1988 than in 2002, indicating that the economic reforms may have benefited those in central and western regions to a larger degree than those in the eastern region.

V. Associations between Social Benefit Levels and Pre-tax Pre-transfer Market Income and Demographics

This section examines the associations between social benefit levels received by households and pre-tax pre-transfer market income and demographic characteristics.

Social Benefit Levels by Pre-tax Pre-transfer Income Decile

Table 4 presents the average social benefit levels and household post-tax post-transfer income by pre-tax pre-transfer income decile in 1988 and 2002. Column 1 shows the distribution of total social benefits by pre-tax pre-transfer income decile. First, the bottom deciles were heavily targeted at and received more social benefits than other pre-tax pre-transfer income groups in both years. The magnitudes of the total social benefits received by the bottom deciles indicate that, however, social benefits reallocated much more resources toward the bottom decile in 2002 (a surprisingly high of ¥7,474 relative to the overall average of ¥2,743, more than 2.5 times) than in 1988 (only ¥2,478 relative to the overall average of ¥2,077). This can be explained by the very high concentration rate of elders—who received little market income but much pension income—in this income group in 2002 than in 1988: the average age of household heads at the bottom decile was 62 in 2002 in contrast to only 48 in 1988 (which was still older than the other decile groups)[14]. Regression analysis would be able to verify this association.

Second, the two years show different social benefit redistributional patterns across pre-tax pre-transfer income deciles as shown in Figure 1. Excluding the bottom decile, social benefits distributed by and large regressively across income groups in 1988, with the top decile gaining a substantial bulk. In 2002, by contrast, leaving the bottom decile aside, the distribution of social benefits fluctuated when moving from the lower to the higher end of the income distribution which did not show a clear pattern.

[14] Source: author's calculation using the CHIP urban data.

In terms of different social benefit domains, *cash transfers* were heavily targeted at the bottom two deciles, in particular the very bottom decile, especially in 2002. Similarly, this might be also mostly due to the high proportion of pensioners at the bottom of income distribution. Another factor might be the increase in the number of unemployed in 2002, which increased the possibility of receiving public assistance for the bottom decile.

Health benefits were somewhat more evenly reallocated across pre-tax pre-transfer income deciles in 1988 than in 2002, although the bottom decile and the top two deciles received more health benefits than other income groups in both years. The bottom decile was more likely to receive more health benefits because they had more elder members (especially in 2002) who usually would incur higher health costs than other age groups. The top income groups received more health benefits possibly because of their higher employment status which had been strongly linked with more generous health benefit provision by employers. However, the distribution of health benefits across pre-tax pre-transfer income deciles in 2002 is still puzzling. The benefit level of the 4th decile was higher than the average and its neighbor deciles; the 9th decile received strangely high health benefits.

Education benefits were skewed toward the lower pre-tax pre-transfer income groups in 1988, but were distributed regressively in 2002, with higher income groups receiving more. Three factors may have contributed to such transitions. First, primary and secondary school enrollment was low in the late 1980s[15], particularly among low-income families, due to the attraction of the just opened market economy. Because low-income families tended to have more children than higher-income families, low enrollment rate among them in fact partly equalized per capita education benefits across the rich and the poor. Second, pre-tax pre-transfer market

[15] The national enrollment rate of school-age (6-14) children has been increasing steadily since 1978. It rose from 95.5% in 1978 to 97.8% in 1990, 98.5% in 1995, and 99.1% in 2000. It dropped slightly to 98.6% in 2002 (NBS, 2004, p.175).

income and education levels became more positively related in 2002 than in 1988 since the economic reforms. Under the pre-reform "iron bowl" system which remained broadly in 1988, jobs and associated wage levels were largely determined by parental work status rather than self achievement. By 2002, education had become the major upward mobility channel and a much more significant predictor and market income. Therefore, more parents would like to send their children to school and the education benefits as a whole increased. Third, education financing reform in the late 1980s decentralized education financing responsibility from central to local governments. Therefore, government per capita education expenditure became closely related to the economic development and capacity of the locality. Because richer families tended to live in more developed provinces and districts, they appeared to enjoy more education benefits in 2002.

Housing benefits were largely distributed regressively along the pre-tax pre-transfer income distribution in both years, despite that they somewhat targeted the bottom decile. The bottom deciles received more housing benefits most likely because the high portions of elders in this group and their access to housing benefits from prior employment in both years. For the rest of the income distributions, housing had been the benefit that was most closely linked with employment status and thus increased as income groups moving toward the top, particularly in 1988 before the public housing reforms. Similarly, both *food assistance* and *other in-kind benefits* were mostly from the employers in both years, and therefore those at the higher end of the income distributions received more of such benefits.

After social benefit transfers, the distributions of post-tax post-transfer household incomes were different in 1988 and 2002, as shown in Figure 2. The 1988 post-tax post-transfer income distribution by pre-tax pre-transfer income decile was largely upward-sloped, with decile groups mostly maintaining the same relative positions along the income distribution (only that

the bottom and 2nd deciles changed positions but their mean post-tax post-transfer income differences were small). In 2002, the bottom decile received such high social benefits that their post-tax post-transfer household income jumped to the 6th decile after the social benefit transfers. The other income groups did not change their relative positions along the distribution. In both years, the top decile had strikingly higher post-tax post-transfer income than other deciles (1.8 times the average in 1988 and more than two times the average in 2002), indicating a big income gap between the rich and the poor which had been enlarged during the period.

Social Benefit Levels by Demographic Characteristics

Tables 5 and 6 present mean social benefit levels by household head demographics and household characteristics in 1988 and 2002, respectively. Households with older heads (>60) received more total social benefits in both years, as expected. This is particularly due to cash transfers toward the elders in the format of pension, especially in 2002. This group also received more health and housing benefits than households with younger heads in 1988, while in 2002 households whose heads were at middle age (40-59) enjoyed more health and housing benefits.

Households whose heads were unmarried received more total social benefits than the married ones in both years, and unmarried households with male heads received more total social benefits than those with female heads. Unmarried households gained mostly from cash transfers and received less education benefits. Households with married heads received less health benefits and more housing benefits in 1988. Interestingly, unmarried female-headed households received more housing and food assistance than others in 2002.

Compared to the Han people, ethnic minorities appeared to receive slightly more cash transfers and food assistance in 1988, and more cash transfers, health, and education benefits in 2002. CCP members received more housing benefits in 1988 and more cash transfers in 2002

than the non-CCP members. Primary school education or less was associated with more cash transfers in both years. Education was strongly positively related to housing benefits in 1988 and was positively associated with health and education benefits in 2002.

With regard to employment status and type, households whose heads were retired received much more social benefits than those who were employed or unemployed (in 2002). They also received more health and housing benefits in 1988 but not in 2002. Households whose heads were employed at government public institutions and state-owned or collective enterprises received more food assistance in 1988 and more health benefits in 2002 than others. Those with unemployed heads received less in all types of in-kind benefits than others in 2002.

Among families with children, more children were associated with less social benefits except for education in both years. In contrast, the presence of more elder members increased total household social benefits. Beyond children and elders, the number of other adults (age 18-59) did not show an association with social benefits, except that households received more social benefits if there was only one other adult—usually the single mother or father of the household. This is consistent with the earlier finding that unmarried households tended to receive more social benefits.

The Determinants of Social Benefits

Tables 7 and 8 present the OLS regression results on the determinants of social benefits in 1988 and 2002, respectively. The regression results on the effects of pre-tax pre-transfer market income and most demographics largely confirm earlier findings based on cross-tabulations. In 1988, even after controlling for the demographics, the top pre-tax pre-transfer income decile gained the most from total social benefits (with a regression coefficient of 154), followed by the bottom decile (the omitted group whose regression coefficient is 0), while all

other groups in the middle of pre-tax pre-transfer income distribution received less (with negative regression coefficients). The lower income groups received more cash transfers, while housing benefits were much skewed toward the richest (10^{th}) pre-tax pre-transfer income group. In 2002, the bottom decile received significantly much higher social benefits (the omitted group with a regression coefficient of 0) than all other pre-tax pre-transfer income groups (regression coefficients all negative and the absolute values more than 1,000 in 7 of the rest 9 groups), net of the effects of demographic characteristics, in particular age and retirement status of household heads. Cash transfers were negatively related to pre-tax pre-transfer income distribution, while education and food benefits were positively determined by pre-tax pre-transfer income levels.

Household head being an elder member (age 60 or above) or retired, as well as the presence of more elder members in the household, maintained positively related to total social benefits, mainly from cash transfers, in both 1988 and 2002. However, effects of some demographic variables changed and the detailed effect patterns of these variables emerge more clearly from the regression results. Households with unmarried heads—especially male heads—were related to more total social benefits, in particular cash transfers, health, and education, in 1988. However, controlling for the effects of pre-tax pre-transfer market income, unmarried households were negatively related to cash transfers (statistically significant) and total social benefits (not statistically significant) in 2002.

Ethnic minorities were not significantly related to total social benefits in 1988. In comparison to the Han people, they were somewhat more likely to receive cash transfers, health benefits, and food assistance, but much less likely to receive housing benefits. In 2002, the minority status became a strong positive predictor of total social benefits as well as cash transfers, health, education, and housing benefits. CCP membership was positively related to total social

benefits, mainly from cash transfers and housing benefits, in 1988, but turned to be negatively associated with total social benefits as well as health, education, and housing benefits in 2002.

Household head education level and total social benefits were found to be strongly positively related in both years. However, the sources of benefits differed across the two years: in 1988, the positive relationship was mainly due to housing benefits followed by cash transfers; while in 2002, it was mainly due to cash transfers followed by health benefits. This reflects the shrinking of employment-based housing benefits during the time and the trend that those with more education were more likely to contribute to health insurance and thus received more health benefits since the health policy reforms.

Regarding employment status and type, the results provided strong evidence that retired members brought in more social benefits, mainly from pension (as part of cash transfers), than the employed in both years. One interesting transition is that those employed at private enterprises received less social benefits than those employed at public institutions or enterprises in 1988, driven by less employer-provided housing benefits and food assistance, but they received more total social benefits in 2002, mainly from health benefits (which were based on self-contribution) and cash transfers.

Consistent with the findings from cross-tabulations, households with more children received less total social benefits and each domain of benefits except for education. This might be because that these households were partially excluded or penalized by the social benefit system due to their violation of the “one-child policy.” More adults aged 18 to 59 in household were also negatively related to total social benefits and most benefit domains except for education. This might be due to the presence of more economically dependent members in such large households. Both residents from central and western regions received less social benefits

than those in eastern region. However, the central residents received even less than those in western region in 1988, while the opposite was true in 2002.

VI. The Impact of Social Benefits on Income Inequality

This section examines the impact of social benefits on income inequality using two approaches: comparing a set of inequality indices based on pre- and post-transfer incomes and comparing income shares of pre-tax pre-transfer income deciles before and after social benefit transfers.

Table 9 presents the pre- and post-transfer income shares by pre-tax pre-transfer income decile. Pre-tax pre-transfer incomes were distributed quite unequally in both years, but to a lower degree in 1988 than in 2002. The bottom decile only held 3% of the urban society's total market income in 1988 but their share further decreased to 1% in 2002. In contrast, the top decile enjoyed 23% of the total urban society market income in 1988 and their share increased to 27% in 2002. Similarly, the market income shares of the lower groups of the income distribution (2^{nd} to 4^{th} deciles) reduced while the higher groups of the distribution (7^{th} to 9^{th} deciles) increased, respectively, from 1988 to 2002.

Social benefit transfers reduced the income inequality across pre-tax pre-transfer income deciles in both years. As a result, post-transfer incomes were distributed less unequally than the pre-tax pre-transfer incomes. The income shares of the lower end of the income distribution all increased and those of the higher end of the distribution all dropped in both years. For example, the income share of the bottom decile increased from the pre-tax pre-transfer 3% to post-transfer 7% in 1988 (an increase of four percentage points) and from 1% to 9% in 2002 (an increase of eight percentage points). Similarly, the income share of the top decile dropped for four and six percentages points respectively in 1988 and 2002. This suggests that the social benefits

redistributed more resources and reduced income inequality to a greater degree in 2002 than in 1988.

However, even after transfers, income inequality still persisted in both years, with the deciles at the lower end holding disproportionately lower shares of incomes (less than 10% per decile) and the higher end enjoying income shares more than their population shares (more than 10% per decile). This was mainly driven by the market economic reforms happened during this period, which favored those who were market competitive and with more economic resources but left the disadvantaged behind, and their effects were not offset by those of the social benefit transfers.

Table 10 presents the results on the impact of social benefits on the income inequality levels in 1988 and 2002. Overall, pre-tax pre-transfer income inequality based only on market income increased dramatically from 1988 to 2002. Social benefit transfers reduced income inequality gaps in both years. However, the post-transfer income inequality levels were still higher in 2002 than in 1988, indicating that the increase in social benefit levels (as shown in Article 3) was not able to close the gap driven by increasing market income inequality during the period.

The pre-tax pre-transfer p90/p10 dispersion ratio in 1988 was 3.10 and it jumped to 7.37 in 2002, showing a big increase in the gap between the rich and the poor based only on market incomes during the time. Social benefit transfers reduced such income gaps to a great degree in both years—by 0.58 (a reduction of 19 percentage points) in 1988 and a big distance of 3.26 (a reduction of 44 percentage points) in 2002, suggesting bigger redistributional effects of social benefits in 2002 than in 1988 which is consistent with the results in Table 9. However, the post-transfer income dispersion ratio was still quite larger in 2002 (11) than in 1988 (2.52).

Results from the Gini Coefficient and Atkinson Indices present a slightly different story. It is consistent that social benefits reduced income inequality in both years: Gini Coefficient decreased from 0.27 to 0.22 in 1988 and from 0.38 to 0.33 in 2002 due to social benefit transfers; Atkinson Indices decreased by 0.03, 0.06, and 0.24 in 1988 and by 0.04, 0.11, and 0.40 in 2002 with the value of *e* changing from 0.5 to 1 and 2, respectively. However, it appears that social benefits reduced income inequality to a greater degree in 1988 than in 2002 using these two measures: the value of Gini Coefficient decreased by 18% in 1988 and 14% in 2002; with regard to Atkinson Indices, as one moves toward attaching more and more weight to income transfers at the lower end of the income distribution (i.e., the value of *e* changing from 0.5 to 1 to 2), the effects of social benefit transfer on income inequality reductions increased in both years and social benefits' role of reducing income inequality was again stronger in 1988 (i.e., larger percentage changes) than in 2002 using the percentage change measures.

VII. Conclusion and Discussion

This article provides empirical evidence on the determinants of social benefits and the impact of social benefits on income inequality in urban China. Urban total social benefits strongly targeted the bottom pre-tax pre-transfer income decile in both years, even after controlling for various demographic characteristics. The top market income decile also gained substantially from total social benefits—mainly from housing benefits—in 1988. Cash transfers were negatively associated with pre-tax pre-transfer income distribution in both years, while important in-kind benefits—namely health and food in 1988 and education in 2002—were positively related to pre-tax pre-transfer income levels.

Old age, either retirement of household head or more elder members in household, were strongly associated with higher levels of total social benefits, mainly due to their pension income.

Household head's education level was positively related to total social benefits to a much greater degree in 2002 than in 1988. The economic and welfare reforms during this time period directly reduced the social benefits toward those employed at public institutions or state-owned or collective enterprises. Larger households, including those with more children and more adults aged 18 to 59, were disadvantaged in receiving social benefits in both years. Residents in central and western regions almost consistently received less social benefits of all types than those in eastern region in both years.

Results also show that social benefits played a significant role in income inequality reduction in urban China in both 1988 and 2002. Social benefits reduced income inequality gaps in both years, but did not show a consistent pattern regarding which year's reduction impact was larger. However, the social benefit transfers were not able to close the rising income gap driven by growing market income inequality during the period. As a result, post-transfer post-tax income inequality level was still higher in 2002 than in 1988. In addition, social benefits, particularly cash transfers, became more targeted at the bottom of the income distribution in 2002 than in 1988. As a result, the post-tax post-transfer income of the bottom pre-tax pre-transfer income decile was much lifted and those who were left behind by both market income and social benefits were the 2nd and 3rd income deciles, or the working poor.

Findings of this study imply important policy lessons. First, even though the absolute levels of social benefits increased since the reforms, their contributions to income inequality reduction declined relative to the increase in market incomes. As social benefits are cutting back while the economic reforms in China are moving forward, growing income inequality needs to be paid serious attention. People's negative perceptions of their economic conditions as well as relative deprival would rise when they look into the mirror of larger income gaps. Consequences

of this may include worse mental and material wellbeing at the individual level and social instability at the society level. The government needs to foresee such potential problems and make efforts in reducing inequality.

Second, the working poor, i.e., the near bottom pre-tax pre-transfer income groups, have not only fared disadvantageously in market competition but also been left behind by social benefits. It is important to be aware that this group needs the most intervention by social policies. On the one hand, work opportunities and training programs should be provided to improve their market capabilities. On the other hand, more social benefits including cash assistance and in-kind benefits such as health, education, and housing need to be redistributed toward this group.

Third, the regional differences in both market income and social benefits persist. Residents in central and western regions gain less from market economy than those in the eastern region because of lack in natural resources, lower government inputs, and less cumulated human capital. However, social benefits which redistribute economic resources do not favor these laggard regions either. Growing regional gap could have long run negative effects for the development of the whole society. Therefore, both market economy and social benefits should be strengthened in the central and western regions in next steps.

This study has several limitations that need to be addressed in future research. First, the growing population of rural migrants is missing in this analysis because of data unavailability. Presumably the income inequality level would be higher if migrants are included. Given that social benefits toward the rural migrants are trivial in most cases, the redistributional role of social benefits would be weaker than what have been found in this article. Further, since migrant population is much larger in 2002 than in 1988, the retrenchment in social benefits during the period would be even more predominant comparing to the above results.

Second, the estimates of inequality in this article are based only on income rather than expenditure data. Many argue that expenditure data are better suited for understand household economic wellbeing. In future work, it would be helpful to use household expenditure data to further understand the inequality patterns and the role of social benefits in family consumption of resources.

Third, this study simply measured income at a per capita basis but ignored the targets of certain benefits toward particular population subgroups as well as income sharing patterns within the household. For example, health benefits are often specific toward individuals who incurred health problems; education benefits can only be enjoyed by enrolled children; cash transfers, especially pension income, may be allocated differently among children, elders, and other adults. Future research should take these factors into account using suitable measuring or imputation methods and equivalent scales.

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Table 1: Comparison of Gini Coefficient Estimates for Urban China in the Literature
(NOTE: All studies defined income by per capita household disposable income)

	Sources (details below)					
Year	(1)	(2)	(3)	(4)	(5)	(6)
1981		0.18				
1985		0.17	0.191			
1986			0.189			
1987		0.17	0.194			
1988			0.201	0.230		0.233
1989			0.198			
1990	0.23		0.198			
1991	0.24	0.25	0.184	0.230		
1992	0.25	0.24	0.200		0.244	
1993	0.27	0.28	0.219			
1994	0.30	0.29	0.229		0.300	
1995	0.28	0.28	0.221	0.280	0.302	0.332
1996	0.28	0.29	0.221	0.280	0.298	
1997	0.29	0.29	0.232	0.290	0.303	
1998	0.30	0.30	0.239	0.297	0.312	
1999	0.30	0.32	0.246	0.302		
2000	0.32		0.258	0.314		
2001	0.32	0.33	0.269	0.323		
2002				0.319		0.318

Source		Dataset
(1)	NBS official estimates (Li, 2003)	NBS survey data
(2)	Chen, Datt, & Ravallion (2004)	NBS survey data
(3)	Wu & Perloff (2004)	NBS summary statistics by income interval
(4)	Li & Yue (2004); Chang (2002)	NBS survey data
(5)	Fang, Zhang, & Fan (2002)	NBS survey data
(6)	Khan & Riskin (1998; 2004)	CHIP survey data

Table 2: Household Head Demographics by Pre-tax Pre-transfer Income Decile in Urban China: 1988 and 2002

			Unmarried by Gender				Education (Level of Schooling)					Employment Status/Type			
Decile	Age	Married	Female	Male	Minority	CCP	<= Primary	Junior High	Senior High	Some College	College+	Public	Private	Retired	Unemployed
1988															
1st	48.01	0.81	0.10	0.09	0.04	0.28	0.29	0.36	0.26	0.05	0.04	0.64	0.02	0.34	0.00
2nd	42.80	0.90	0.04	0.06	0.04	0.33	0.19	0.39	0.30	0.06	0.05	0.90	0.02	0.09	0.00
3rd	43.32	0.94	0.03	0.03	0.04	0.38	0.17	0.34	0.33	0.07	0.09	0.94	0.01	0.05	0.00
4th	42.60	0.95	0.03	0.02	0.05	0.41	0.18	0.33	0.32	0.08	0.09	0.95	0.02	0.03	0.00
5th	42.38	0.95	0.04	0.01	0.04	0.40	0.15	0.39	0.28	0.08	0.09	0.96	0.02	0.02	0.00
6th	42.07	0.95	0.02	0.03	0.03	0.40	0.15	0.37	0.31	0.08	0.09	0.98	0.01	0.02	0.00
7th	43.16	0.96	0.02	0.02	0.04	0.44	0.14	0.34	0.31	0.10	0.12	0.96	0.01	0.03	0.00
8th	43.06	0.95	0.02	0.03	0.03	0.44	0.09	0.35	0.35	0.09	0.10	0.97	0.01	0.02	0.00
9th	45.06	0.94	0.03	0.03	0.05	0.44	0.16	0.35	0.27	0.09	0.13	0.94	0.03	0.04	0.00
10th	46.39	0.93	0.04	0.04	0.04	0.41	0.17	0.36	0.29	0.06	0.11	0.91	0.05	0.04	0.00
All	43.88	0.93	0.04	0.04	0.04	0.39	0.17	0.36	0.30	0.08	0.09	0.92	0.02	0.07	0.00
2002															
1st	62.22	0.94	0.05	0.02	0.05	0.40	0.20	0.39	0.28	0.07	0.06	0.06	0.05	0.83	0.06
2nd	51.86	0.93	0.05	0.02	0.04	0.30	0.16	0.41	0.35	0.06	0.02	0.27	0.21	0.41	0.12
3rd	47.04	0.95	0.03	0.01	0.06	0.30	0.09	0.39	0.38	0.10	0.03	0.40	0.27	0.27	0.07
4th	46.86	0.95	0.04	0.01	0.05	0.33	0.10	0.33	0.36	0.17	0.03	0.48	0.25	0.23	0.04
5th	45.69	0.95	0.03	0.01	0.05	0.34	0.05	0.32	0.41	0.17	0.06	0.53	0.22	0.20	0.04
6th	45.13	0.97	0.02	0.01	0.04	0.34	0.02	0.29	0.42	0.21	0.06	0.61	0.21	0.14	0.04
7th	44.85	0.96	0.03	0.00	0.04	0.40	0.04	0.24	0.41	0.21	0.10	0.64	0.20	0.13	0.02
8th	43.73	0.96	0.03	0.01	0.04	0.42	0.03	0.20	0.40	0.25	0.13	0.65	0.22	0.12	0.02
9th	44.65	0.98	0.02	0.00	0.04	0.46	0.02	0.17	0.37	0.28	0.16	0.73	0.16	0.10	0.02
10th	45.33	0.97	0.02	0.01	0.05	0.52	0.01	0.11	0.34	0.31	0.23	0.70	0.21	0.08	0.01
All	47.74	0.96	0.03	0.01	0.05	0.38	0.07	0.29	0.37	0.18	0.09	0.51	0.20	0.25	0.04

Table 3: Household Characteristics by Pre-tax Pre-transfer Income Decile in Urban China: 1988 and 2002

		# of Members by Age Group			Region		
Decile	Household Size	Kids (<18)	Elders (>60)	Other Adults (18-60)	Eastern	Central	Western
1988							
1st	4.08	1.19	0.68	2.22	0.16	0.62	0.22
2nd	4.28	1.36	0.42	2.50	0.19	0.63	0.18
3rd	4.10	1.26	0.29	2.55	0.26	0.54	0.20
4th	3.98	1.20	0.25	2.54	0.27	0.53	0.19
5th	3.85	1.11	0.21	2.53	0.31	0.52	0.17
6th	3.75	1.06	0.17	2.51	0.37	0.45	0.18
7th	3.64	0.92	0.17	2.55	0.36	0.47	0.17
8th	3.60	0.90	0.15	2.55	0.40	0.43	0.17
9th	3.61	0.83	0.18	2.60	0.48	0.37	0.15
10th	3.48	0.68	0.23	2.58	0.60	0.26	0.14
All	3.84	1.05	0.27	2.51	0.34	0.48	0.18
2002							
1st	2.98	0.40	1.31	1.27	0.26	0.55	0.19
2nd	3.66	0.67	0.69	2.30	0.30	0.55	0.16
3rd	3.52	0.71	0.42	2.39	0.28	0.54	0.18
4th	3.41	0.66	0.31	2.44	0.29	0.53	0.18
5th	3.29	0.64	0.26	2.40	0.29	0.54	0.17
6th	3.28	0.64	0.18	2.46	0.35	0.49	0.16
7th	3.19	0.62	0.15	2.43	0.34	0.47	0.19
8th	3.13	0.63	0.15	2.36	0.35	0.45	0.20
9th	3.03	0.54	0.11	2.38	0.39	0.43	0.18
10th	2.89	0.44	0.06	2.39	0.51	0.40	0.09
All	3.24	0.59	0.36	2.28	0.34	0.50	0.17

Table 4: Mean Social Benefit Levels by Pre-tax Pre-transfer Income Decile in Urban China: 1988 and 2002

Decile	Total Social Benefits	Social Benefits by Domain						Post-tax Post-transfer Income
		Cash Transfers	Health	Education	Housing	Food	Other In-kind	
1988								
1st	2,478	973	197	75	807	425	1	3,454
2nd	1,875	465	163	80	709	455	3	3,377
3rd	1,811	372	161	85	726	463	4	3,588
4th	1,849	331	167	83	752	513	3	3,836
5th	1,887	339	177	81	769	517	3	4,082
6th	1,904	310	179	81	811	517	5	4,308
7th	2,008	377	192	71	815	547	5	4,668
8th	2,059	363	200	71	854	562	9	5,063
9th	2,183	367	217	67	966	555	11	5,725
10th	2,721	441	245	61	1,414	543	18	8,468
All	2,077	434	190	75	862	510	6	4,656
2002								
1st	7,474	5,543	1,573	90	251	15	2	8,426
2nd	2,886	2,136	315	202	210	19	4	5,306
3rd	1,994	1,409	127	236	197	22	4	5,344
4th	2,535	1,251	789	227	233	28	8	6,836
5th	1,936	1,088	327	242	234	32	13	7,060
6th	2,100	1,044	526	248	229	41	11	8,095
7th	1,731	858	295	278	246	42	13	8,783
8th	1,804	917	311	286	223	51	17	10,125
9th	2,689	797	1,045	310	452	69	16	12,963
10th	2,272	779	636	333	344	148	32	19,380
All	2,743	1,583	594	245	262	47	12	9,231

Figure 1: Total Social Benefits by Pre-tax Pre-transfer Income Decile in Urban China

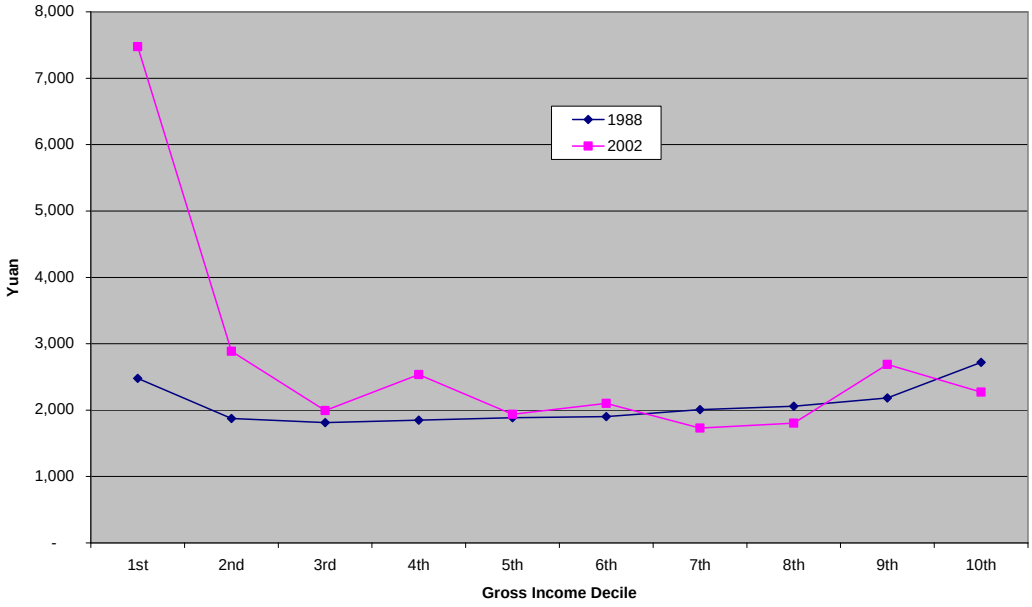

Figure 2: Post-tax Post-transfer Income by Pre-tax Pre-transfer Income Decile in Urban China

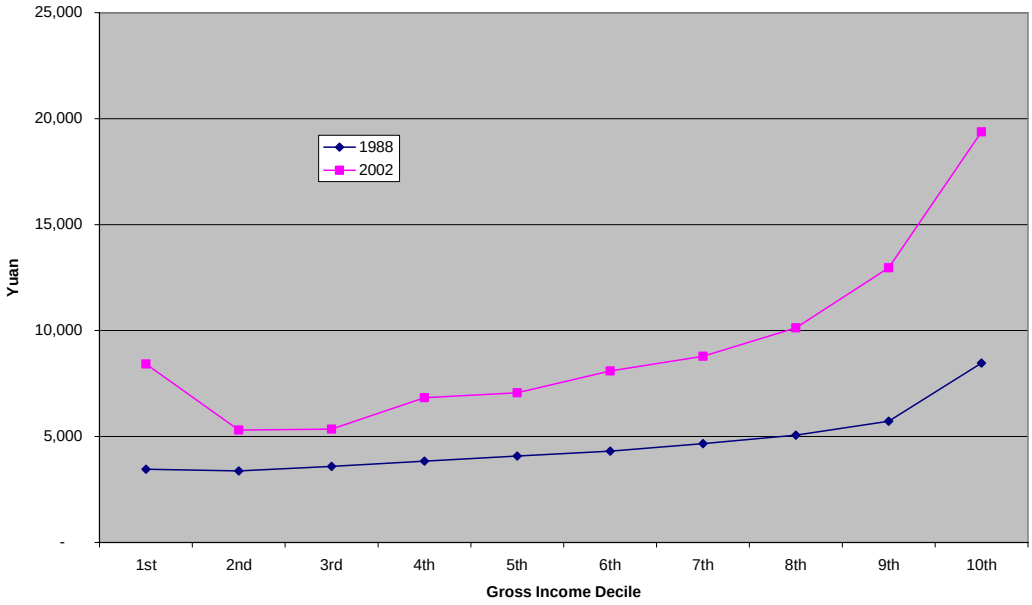

Table 5: Mean Social Benefit Levels by Demographic Groups in Urban China: 1988

Demographics	Total Social Benefits	Social Benefits by Domain						Post-tax Post-transfer Income
		Cash Transfers	Health	Education	Housing	Food	Other In-kind	
Household Head Demographics								
Age								
21-29	2,240	734	239	6	764	493	3	4,556
30-39	1,802	266	169	66	807	486	8	4,361
40-49	1,793	189	152	123	812	510	7	4,357
50-59	2,311	502	217	60	973	553	6	5,108
60+	3,502	1,643	304	26	1,042	486	1	5,765
Marital Status								
married	2,041	397	185	77	866	509	6	4,631
unwed, female	2,420	768	225	59	845	517	5	4,921
unwed, male	2,671	1,049	278	42	781	511	11	5,072
Ethnic Minority								
no	2,079	433	190	75	869	507	6	4,661
yes	2,081	484	200	86	719	582	10	4,619
CCP Member								
no	1,996	451	193	70	772	504	6	4,519
yes	2,207	408	186	84	1,003	519	6	4,878
Education								
primary school	2,084	555	207	68	729	514	11	4,530
junior high school	1,950	398	184	77	770	514	6	4,527
senior high school	2,121	425	190	71	923	507	6	4,721
some college	2,080	381	188	80	927	499	6	4,688
4 year college+	2,421	419	188	93	1,209	510	3	5,199
Employment Status/Type								
govt/SOE/collective	1,962	322	180	79	856	518	7	4,581
private enterprise	2,107	769	214	46	744	333	2	5,586
retired	3,716	1,922	331	31	973	457	2	5,483

Table 5: Mean Social Benefit Levels by Demographic Groups in Urban China: 1988 (*continued*)

Demographics	Total Social Benefits	Social Benefits by Domain						Post-tax Post-transfer income
		Cash Transfers	Health	Education	Housing	Food	Other In-kind	
Household Characteristics								
Number of Children <18								
0	2,888	946	281	20	1,059	576	7	5,811
1	1,925	332	180	69	827	510	6	4,569
2	1,668	167	128	137	773	456	7	3,850
3+	1,360	128	95	164	587	384	2	3,073
Number of Elders >60								
0	1,939	287	176	83	866	519	7	4,593
1	2,376	770	219	53	843	487	4	4,793
2+	3,141	1,510	301	27	855	447	1	5,140
Number of Other Adults 18-59								
0	4,375	2,263	366	22	1,219	505	0	6,099
1	3,206	1,365	263	52	1,029	491	7	5,736
2	1,936	309	171	84	862	504	7	4,516
3	2,111	418	197	83	884	520	8	4,775
4	1,959	394	200	57	775	528	5	4,601
5+	1,859	412	206	37	695	505	4	4,376
Region								
eastern	2,394	497	231	75	1,069	516	7	5,524
central	1,831	408	169	71	702	478	3	4,099
western	2,141	384	168	90	901	585	13	4,512

Table 6: Mean Social Benefit Levels by Demographic Groups in Urban China: 2002

Demographics	Total Social Benefits	Social Benefits by Domain						Post-tax Post-transfer Income
		Cash Transfers	Health	Education	Housing	Food	Other In-kind	
Household Head Demographics								
Age								
21-29	1,472	938	139	40	152	168	35	8,982
30-39	1,293	345	167	308	189	53	13	8,426
40-49	1,668	452	201	404	301	44	11	9,025
50-59	2,962	1,989	203	68	308	44	14	9,787
60+	7,115	5,394	87	98	225	31	7	10,075
Marital Status								
married	2,706	1,544	176	247	254	44	12	9,220
unwed, female	3,471	2,294	144	239	501	125	23	9,460
unwed, male	3,753	2,848	158	142	236	58	12	9,474
Ethnic Minority								
no	2,705	1,571	171	243	262	48	12	9,202
yes	3,510	1,815	237	296	263	26	11	9,858
CCP Member								
no	2,501	1,321	162	265	278	44	11	8,558
yes	3,138	2,008	195	214	235	51	14	10,333
Education								
primary school	3,196	2,416	88	169	175	18	8	6,761
junior high school	2,745	1,683	150	193	272	37	9	7,747
senior high school	2,614	1,475	179	287	285	54	13	9,101
some college	2,613	1,215	212	263	220	51	15	11,020
4 year college+	3,154	1,767	227	264	283	63	12	12,873
Employment Status/Type								
govt/SOE/collective	1,647	619	213	295	275	50	13	9,492
private enterprise	1,771	612	157	310	251	57	13	8,576
retired	6,043	4,506	122	88	254	36	10	9,850
unemployed	1,456	804	106	276	194	27	4	5,752

Table 6: Mean Social Benefit Levels by Demographic Groups in Urban China: 2002 (*continued*)

Demographics	Total Social Benefits	Social Benefits by Domain						Post-tax Post-transfer Income
		Cash Transfers	Health	Education	Housing	Food	Other In-kind	
Household Characteristics								
Number of Children <18								
0	3,950	2,550	195	71	340	51	12	10,614
1	1,790	812	165	369	209	44	12	8,285
2+	1,308	523	69	606	70	33	7	5,913
Number of Elders >60								
0	1,707	720	194	280	273	51	13	9,074
1	4,019	2,921	139	160	232	37	10	8,721
2+	8,036	5,707	88	110	218	32	7	10,770
Number of Other Adults 18-59								
0	11,783	8,534	67	43	321	30	6	13,537
1	6,238	4,480	124	201	343	91	19	10,472
2	1,891	893	179	342	237	48	12	8,911
3	2,412	1,262	199	149	308	42	12	9,342
4+	1,586	1,147	140	60	144	34	5	6,988
Region								
eastern	3,053	1,721	187	293	298	79	20	10,501
central	2,732	1,527	153	205	298	37	9	8,767
western	2,205	1,478	219	281	90	11	6	8,204

Table 7: OLS Regression of Demographics and Pre-tax Pre-transfer Income Decile on Social Benefits in Urban China in 1988 (N=30,968)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total Social Benefits	Cash Transfers	Health	Education	Housing	Food	Other In-kind
Household Head Characteristics							
Age	17**	3**	0**	2**	8**	3**	-0**
	(19.84)	(10.44)	(4.37)	(35.35)	(12.31)	(10.44)	(3.57)
Marital status (married omitted)							
Unmarried	85*	65**	17**	19**	-44	28*	-0
female	(2.20)	(4.24)	(5.98)	(7.23)	(1.43)	(2.24)	(0.08)
Unmarried male	462**	388**	55**	22**	-28	19	5*
	(12.27)	(26.26)	(19.60)	(8.52)	(0.93)	(1.56)	(2.37)
Ethnic minority	-18	75**	19**	4+	-168**	51**	1
	(0.50)	(5.42)	(7.24)	(1.70)	(6.00)	(4.44)	(0.63)
CCP	204**	33**	-0	5**	172**	-6	1
	(13.65)	(5.60)	(0.27)	(4.48)	(14.47)	(1.18)	(0.63)
Education (primary school or less omitted)							
Junior high	129**	58**	-4**	11**	75**	-3	-8**
school	(6.09)	(7.01)	(2.60)	(7.35)	(4.48)	(0.45)	(6.73)
Senior high	296**	90**	1	7**	220**	-13+	-9**
school	(13.40)	(10.33)	(0.85)	(4.45)	(12.52)	(1.82)	(6.72)
Some college	260**	72**	2	14**	202**	-22*	-8**
	(8.32)	(5.85)	(0.89)	(6.26)	(8.15)	(2.20)	(4.26)
4 year college	528**	105**	-3	20**	444**	-27**	-11**
or above	(18.35)	(9.34)	(1.18)	(10.04)	(19.38)	(2.94)	(6.54)
Employment status/type							
(employed at public institutions or state-owned or collective enterprises omitted)							
Employed at	-188**	242**	-8*	-23**	-178**	-212**	-8**
private	(3.77)	(12.39)	(2.25)	(6.79)	(4.50)	(13.10)	(2.86)
enterprise							
Retired	966**	1,019**	103**	-37**	-2	-117**	-1
	(26.65)	(71.67)	(38.03)	(14.63)	(0.06)	(9.98)	(0.42)
Household Characteristics							
# of kids <18	-458**	-262**	-54**	56**	-132**	-66**	1
	(44.79)	(65.38)	(70.16)	(78.68)	(16.24)	(19.93)	(0.96)
# of elders 60+	30*	219**	22**	-23**	-146**	-41**	-1
	(2.08)	(38.89)	(20.22)	(23.11)	(12.79)	(8.80)	(1.25)
# of other adults	-249**	-96**	-5**	-6**	-123**	-20**	-0
18-59	(32.85)	(32.15)	(9.35)	(10.93)	(20.31)	(7.94)	(0.91)
Region (eastern omitted)							
Central	-539**	-117**	-50**	-13**	-331**	-27**	-1
	(34.00)	(18.75)	(42.28)	(11.70)	(26.26)	(5.34)	(0.84)
Western	-173**	-84**	-44**	-2	-133**	82**	8**
	(8.38)	(10.35)	(28.53)	(1.23)	(8.12)	(12.27)	(6.62)
Pre-tax Pre-transfer Income Decile (1^{st} decile omitted)							
2^{nd}	-165**	-122**	6**	-7**	-69**	25*	1
	(5.26)	(9.86)	(2.59)	(3.20)	(2.77)	(2.48)	(0.58)
3^{rd}	-290**	-172**	4+	-3	-137**	15	3
	(9.05)	(13.66)	(1.70)	(1.22)	(5.37)	(1.41)	(1.49)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total Social Benefits	Cash Transfers	Health	Education	Housing	Food	Other In-kind
4th	-267**	-206**	9**	-1	-129**	59**	2
	(8.29)	(16.34)	(3.62)	(0.62)	(5.02)	(5.68)	(0.81)
5th	-263**	-201**	15**	0	-135**	55**	2
	(8.10)	(15.77)	(6.17)	(0.22)	(5.22)	(5.23)	(1.17)
6th	-309**	-241**	12**	2	-136**	50**	4*
	(9.41)	(18.70)	(5.00)	(0.76)	(5.21)	(4.68)	(2.20)
7th	-302**	-233**	19**	-3	-162**	71**	5*
	(9.13)	(17.96)	(7.74)	(1.16)	(6.14)	(6.65)	(2.42)
8th	-275**	-241**	25**	-3	-146**	82**	9**
	(8.26)	(18.47)	(9.91)	(1.44)	(5.51)	(7.59)	(4.60)
9th	-244**	-298**	29**	-6**	-52+	72**	11**
	(7.31)	(22.79)	(11.73)	(2.68)	(1.95)	(6.70)	(5.54)
10th	154**	-295**	42**	-6*	347**	47**	19**
	(4.53)	(22.15)	(16.39)	(2.43)	(12.87)	(4.24)	(9.49)
Constant	2,571**	846**	250**	-53**	1,026**	486**	15**
	(47.03)	(39.44)	(61.03)	(13.91)	(23.61)	(27.40)	(4.81)
R-squared	0.26	0.52	0.38	0.25	0.11	0.05	0.01

Absolute value of t statistics in parentheses; + p<.10; * p< .05; ** p< .01.

Table 8: OLS Regression of Demographics and Pre-tax Pre-transfer Income Decile on Social Benefits in Urban China in 2002 (N=17,654)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total Social Benefits	Cash Transfers	Health	Education	Housing	Food	Other In-kind
Household Head Characteristics							
Age	56**	40**	10	4**	3*	-2**	-0**
	(5.88)	(18.93)	(1.16)	(12.65)	(2.50)	(3.80)	(2.62)
Marital status (married omitted)							
Unmarried	-492	-365**	-478	13	231**	95**	12**
female	(1.39)	(4.59)	(1.43)	(1.03)	(5.45)	(5.79)	(3.33)
Unmarried male	-861	-280*	-559	-54*	6	25	2
	(1.39)	(2.02)	(0.96)	(2.53)	(0.08)	(0.87)	(0.31)
Ethnic minority	1,437**	525**	777**	31**	103**	-2	3
	(4.79)	(7.78)	(2.74)	(3.01)	(2.87)	(0.15)	(0.94)
CCP	-361*	30	-308*	-25**	-67**	7	2
	(2.57)	(0.97)	(2.33)	(5.22)	(3.98)	(1.10)	(1.33)
Education (primary school or less omitted)							
Junior high	1,309**	741**	469+	9	83**	8	-2
school	(4.88)	(12.29)	(1.85)	(1.02)	(2.59)	(0.67)	(0.60)
Senior high	1,843**	1,133**	548*	47**	101**	14	-0
school	(6.77)	(18.54)	(2.13)	(5.03)	(3.10)	(1.08)	(0.04)
Some college	2,483**	1,404**	1,051**	-14	44	-1	-1
	(8.11)	(20.42)	(3.63)	(1.32)	(1.19)	(0.05)	(0.42)
4 year college or	2,710**	1,770**	894**	-30*	84*	-1	-7+
above	(7.79)	(22.65)	(2.72)	(2.49)	(2.02)	(0.08)	(1.86)
Employment status/type							
(employed at public institutions or state-owned or collective enterprises omitted)							
Employed at	443**	184**	275+	-8	-17	9	0
private	(2.61)	(4.83)	(1.72)	(1.44)	(0.82)	(1.09)	(0.18)
enterprise							
Retired	1,832**	1,817**	143	-112**	-42	20*	6**
	(8.46)	(37.37)	(0.70)	(14.96)	(1.61)	(2.04)	(2.70)
Unemployed	-421	-166*	-180	24*	-94*	-2	-3
	(1.31)	(2.31)	(0.60)	(2.21)	(2.43)	(0.16)	(0.89)
Household Characteristics							
# of kids <18	-1,417**	-1,063**	-491**	286**	-134**	-12*	-2
	(11.33)	(37.87)	(4.16)	(66.08)	(8.95)	(2.11)	(1.15)
# of elders 60+	1,054**	671**	536**	-79**	-79**	5	-0
	(7.61)	(21.57)	(4.10)	(16.50)	(4.76)	(0.72)	(0.13)
# of other adults	-1,071**	-726**	-207*	-55**	-70**	-11*	-3**
18-59	(11.99)	(36.16)	(2.45)	(17.74)	(6.56)	(2.56)	(2.89)
Region (eastern omitted)							
Central	-316*	-258**	69	-94**	8	-32**	-9**
	(2.22)	(8.11)	(0.51)	(19.12)	(0.49)	(4.89)	(5.78)
Western	-987**	-357**	-313+	-27**	-217**	-59**	-13**
	(5.13)	(8.26)	(1.72)	(4.04)	(9.41)	(6.69)	(6.20)
Pre-tax Pre-transfer Income Decile (1^{st} decile omitted)							
2^{nd}	-1,223**	-782**	-498+	32**	13	9	4
	(4.09)	(11.65)	(1.76)	(3.07)	(0.38)	(0.62)	(1.23)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total Social Benefits	Cash Transfers	Health	Education	Housing	Food	Other In-kind
3rd	-1,419**	-909**	-559+	42**	-6	11	4
	(4.57)	(13.06)	(1.91)	(3.89)	(0.17)	(0.75)	(1.12)
4th	-692*	-954**	171	39**	25	18	8*
	(2.21)	(13.55)	(0.58)	(3.56)	(0.68)	(1.28)	(2.44)
5th	-1,338**	-1,131**	-308	54**	14	20	13**
	(4.24)	(15.97)	(1.03)	(4.94)	(0.38)	(1.36)	(3.92)
6th	-1,031**	-1,054**	-77	54**	6	29*	12**
	(3.20)	(14.59)	(0.25)	(4.86)	(0.15)	(1.96)	(3.41)
7th	-1,334**	-1,208**	-281	84**	29	31*	13**
	(4.13)	(16.65)	(0.92)	(7.49)	(0.74)	(2.05)	(3.78)
8th	-1,347**	-1,197**	-296	92**	-1	37*	17**
	(4.14)	(16.37)	(0.96)	(8.19)	(0.01)	(2.47)	(4.80)
9th	-590+	-1,419**	410	133**	212**	57**	16**
	(1.80)	(19.22)	(1.32)	(11.71)	(5.38)	(3.75)	(4.65)
10th	-1,362**	-1,641**	-121	177**	63	130**	31**
	(4.06)	(21.79)	(0.38)	(15.26)	(1.56)	(8.36)	(8.61)
Constant	2,181**	1,386**	261	37	345**	128**	25**
	(3.38)	(9.56)	(0.43)	(1.64)	(4.46)	(4.28)	(3.65)
R-squared	0.10	0.57	0.01	0.32	0.02	0.02	0.01

Absolute value of t statistics in parentheses; + p<.10; * p< .05; ** p< .01.

Table 9: Pre- and Post-transfer Income Shares by Pre-tax Pre-transfer Income Decile In Urban China: 1988 and 2002

	1988			2002		
Decile	Pre-transfer	Post-transfer	Δ (Post - Pre)	Pre-transfer	Post-transfer	Δ (Post - Pre)
1st	3%	7%	4%	1%	9%	8%
2nd	6%	7%	2%	3%	6%	2%
3rd	7%	8%	1%	5%	6%	1%
4th	8%	8%	1%	6%	7%	1%
5th	9%	9%	0%	8%	8%	0%
6th	9%	9%	0%	9%	9%	0%
7th	10%	10%	0%	11%	10%	-1%
8th	12%	11%	-1%	13%	11%	-2%
9th	14%	12%	-1%	16%	14%	-2%
10th	23%	18%	-4%	27%	21%	-6%
All	100%	100%	0%	100%	100%	0%

Table 10: The Impact of Social Benefits on Income Inequality Indices in Urban China: 1988 and 2002

	1988				2002			
	Pre-transfer	Post-transfer	Value Change (= Post - Pre)	% Change (=Change / Pre)	Pre-transfer	Post-transfer	Value Change (= Post - Pre)	% Change (=Change / Pre)
p90/p10	3.10	2.52	-0.58	-0.19	7.37	4.11	-3.26	-0.44
Gini	0.27	0.22	-0.05	-0.18	0.38	0.33	-0.05	-0.14
A(e=0.5)	0.07	0.04	-0.03	-0.38	0.13	0.09	-0.04	-0.31
A(e=1)	0.13	0.08	-0.06	-0.42	0.28	0.17	-0.11	-0.39
A(e=2)	0.38	0.14	-0.24	-0.62	0.70	0.29	-0.40	-0.58

Appendix Table 1: The China Household Income Project (CHIP) Sample Designs

	1988	2002
Urban		
Households	9,009	6,835
Individuals	31,827	20,632
Provinces		
- total	10	12
- common to both waves	10	10
Cities		
- total	60	70
- common to both waves	60	60
Rural		
Households	10,258	9,200
Individuals	51,352	37,968
Provinces		
- total	28	21
- common to all three waves	19	19

Source: (Riskin, Zhao, & Li, 2001), p. 5, and "Sample Distribution of Urban and Rural Survey 2002" by the Principal Investigators, unpublished memo.

Appendix Table 2: Administrative Data on Provincial Per Capita Public Health Expenditures in 1988 (in 2002 Yuan)

Province	Employees by enterprise type			Retirees
	State	Collective	Other	
Beijing	470	281	125	993
Shanxi	181	92	259	377
Liaoning	327	169	344	684
Jiangsu	295	180	312	578
Anhui	205	117	175	380
Henan	223	107	807	568
Hubei	271	125	313	553
Guangdong	420	209	212	751
Yunnan	289	150	332	590
Gansu	250	105	671	441

Source: Author's calculation based on *China Labor and Wage Statistical Yearbook 1989* and *China Labor Yearbook 1988-1989*.

Appendix Table 3: Administrative Data on Provincial Per Capita Public Education Expenditures In 1988 and 2002 (in 2002 Yuan)

Province	1988		2002		
	Middle School*	Elementary School	Senior Middle School	Junior Middle School	Elementary School
Beijing	1,466	620	4,996	3,835	2,904
Shanxi	529	239	1,335	1,060	744
Liaoning	675	320	1,603	1,635	1,202
Jiangsu	496	252	1,942	2,234	1,740
Anhui	373	151	1,190	1,007	935
Henan	398	123	912	1,178	915
Hubei	471	116	1,109	1,096	868
Guangdong	632	302	3,055	3,523	2,098
Yunnan	625	275	2,131	2,293	1,600
Gansu	471	259	1,560	1,448	1,223

NOTE: * Including both high school and junior middle school.
Source: Author's calculation based on *China Provincial Education Expenditure Annual Development Report 1989, China Education Expenditure Statistical Yearbook 2003,* and *China Statistical Yearbook 2003.*