

***Rural-Urban Economic Disparities
among China's Elderly***

by

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**European Regional Science Association
Annual Meeting
*August 25-29, 2004***

Introduction

Some of the most controversial effects of China's post-1978 economic reforms have been on regional income disparities and on the divide between urban and rural development. How important are those income disparities? And how do they affect the elderly, who are perhaps the most vulnerable to the changes brought by China's transition? What is the government's role in providing income support?

This paper examines the rural-urban disparities in income among the elderly in China. We examine differences in levels and sources of income and in socioeconomic characteristics using a 1992 nationwide survey on rural and urban elderly conducted by China's Elderly Scientific Research Center. In addition, we investigate the type and level of government income support programs at the local and state level.

The findings are evaluated and policy implications discussed in the context of China's transition to a market economy and choice of development strategies. The rest of the paper is organized as follows. In the first section we provide an overview of China's income inequality research including a preliminary discussion of the urban-rural divide. In the second section, we present the data and methodology. The empirical findings are discussed in sections three and four. Concluding remarks are offered in section five.

1. Poverty and income inequality in post-reform China

China embarked on a market-based economic reform in 1978.¹ By most standards this reform has been a colossal success. Between 1978 and 1996 real per capita income GDP increased at an annual average rate of 8 percent (DaCosta and Carroll, 2001). Urban and rural consumption per capita increased at an average rate of 5.6 and 9.7 percent respectively, from 1978 to 1985 (Perkins, 1988). Rural consumption grew particularly fast. In fact, "the rise in real per capita consumption of the average Chinese farmer was greater during the 7 years after 1978 than in the entire previous 26 years" (Perkins 1988, pp. 636). Other studies on the effects of economic reform reinforce this idea.

How equitable has the distribution of these benefits been? Income distribution studies suggest that the rural distribution of income during the 1970s and 1980s may have

¹ See for instance Perkins (1988) for a detailed analysis of this process.

changed very little when compared to the mid-1950s² (the within-urban inequality also decreased during this period). However, that has been changing as more recent studies suggest that income inequality has been growing since the late 1980s. For instance, urban households saw their real income increase only at an average annual rate of 4.5 percent between 1988 and 1995 (Khan et.al., 1999)

One of the least desirable consequences of the reform, thus appears to be growing income inequality – the largest increase inequality ever recorded according to some accounts (Yang, 1999).³ What is behind this rising inequality? Increases in rural-urban income differentials were found by Yang (1999) to be the driving factor behind the rising overall inequality in China (pp. 306). Yang relies on household survey data collected by China's State Statistical Bureau for the years of 1986, 1988, 1992, and 1994. The data consist of urban and rural samples of China's provinces of Sichuan and Jiangsu, in proportion to their respective populations. Though limited in geographical scope this study is relevant as it provides a measure of income distribution over time.

Other studies have addressed China's perceived growing income inequality, by focusing in either urban areas or in rural areas. For instance, Benjamin and Brandt (1999) examined income inequality in rural China by comparing data for 1935 and 1995 and concluded that the level of income inequality is essentially the same. The study uses household-level survey data for villages in north and northeast China, a sample of 1,094 rural households. Benjamin and Brandt found a per capita household income Gini coefficient of 0.42 in 1935 and 0.38 in 1995. In other words, a more equal distribution of land does not seem to alter income distribution in a very significant way, due to undeveloped and ineffective factor markets. An additional, and new, factor put forth by the authors, and particularly relevant for the current study, is the institutional change that the structure of households is undergoing – an increasing number of Chinese families are becoming smaller and more of a nuclear type, in lieu of multiple-level generation-types. This undergoing change may very well affect income inequality dramatically as it changes the traditional redistributive role of the family. The elderly are especially vulnerable to

² There was a major decrease in rural inequality in the early 1950s as a result of land confiscation.

³ China's Gini coefficient went from 28.2 in 1981 to 38.8 in 1995 based on official statistics (World Bank, 1997).

these changes, in addition to being most vulnerable when it comes to uneven factors markets.

On the other hand, Khan et al. (1999) studied income inequality in urban China, by comparing surveys for ten provinces undertaken in 1988 and in 1995⁴. They found that the income distribution in 1988 was “remarkably egalitarian”. Even though urban inequality had increased somewhat, the Gini coefficient was still lower than for other countries. However, the Gini coefficient for the distribution of household income per capita went from 0.233 in 1988 to 0.332 in 1995, an increase of 42.5 percent (Khan et al. pp. 296). They concluded “increased inequality in urban China was due entirely to greater inequality in the distribution within individual components of income” (pp. 297) and that government policy contributed to the growing inequality. Xue and Zhong (2003) finds that the urban unemployment rate grew to 11.9 percent in 1999 and has caused urban poverty, which in turn has contributed to the worsening of urban inequality. They conclude that urban income inequality has increased since 1995 and that urban unemployment and poverty are the major reasons.

This paper focuses on the income disparities among the elderly. The study comprises both rural and urban households, and covers all China. However, it is more restrictive than some of the previous studies to the extent that is only confined to elderly-headed households.

The rural-urban divide

There is a very extensive literature on China’s historical rural-urban divide. The Maoist centrally planned system embraced a development strategy development “that favored heavy industry development and extracted agricultural surplus largely for urban capital accumulation and urban based subsidies. The main enforcement mechanisms included the state control of agricultural production and procurement, the suppression of food staple prices, and restrictions of rural-urban migration via a household registration system. Prior to the inception of reforms in 1978, capital goods were excessively concentrated in urban areas, and a large fraction of the labor force was restrained from leaving agriculture. As a

⁴ The 10 provinces were Beijing municipality, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Guangdong, Yunnan, and Gansu. Sichuan was added in 1995.

result, urban workers' productivity and earnings exceeded those of their rural counterparts (Louis Putterman, 1993; Yang and Zhou, 1999)."⁵

2. Data and methodology

The database for this study consists of a nationwide household survey conducted by China's Elderly Scientific Research Center in 1992, on rural and urban elderly. This survey consists of two separate sets of responses, one for urban areas (9,889 respondents) and the other for rural areas (10,194 respondents), and provides demographic, socioeconomic, and health characteristics of the elderly.

Urban areas comprise small cities (<200,000 registered residents), medium cities (200,000 to 500,000), big cities (500,000 to 1,000,000) and metropolitan cities (more than 1 million). Rural areas refer to all farming areas under the administration of counties. Elderly are defined as 60 years old and over.

To measure income disparities we compute Gini coefficients and derive the respective Lorenz curves. The Gini coefficient is a measure of dispersion of a distribution and is mostly used to measure the distribution of income (it could also be applied to consumption or wealth, for instance).⁶

In addition, we use cross-tabulation methods to illustrate the association between income (dependent variable) and various socioeconomic characteristics of the elderly such as age and type of family (or living arrangement). We rely on Chi-Square and Cramer's V tests to measure the significance of the data – Chi-square is used to test the significance of the association between the independent and dependent variables, Cramer's V test is used to measure the magnitude of the association between the variables (Blalock, 1979).

3. Findings: Socioeconomic Disparities

We find that rural households are older, less educated, have more children, and are somewhat larger than the urban counterparts (table 1). The average age of the head of the household is slightly higher for the rural units than the urban ones, 69 and 68.4 respectively.

⁵ Quoted from Yang (1999, pp. 308).

⁶ See for instance Xu (2004) for a comprehensive literature review on the Gini index.

Table 1: Comparison of Individual and Household Characteristics

| Characteristic | Rural | Urban |
|------------------------------|--------------|--------------|
| Average age | 69.0 | 68.4 |
| Number of years of schooling | 1.2 | 4.14 |
| Number of children | 4.1 | 3.8 |
| Household size | 3.5 | 3.3 |
| Percentage female | 52.7 | 51.8 |

The age disparity becomes more significant when we disaggregate the elderly into three age groups – 60 to 69 (young), 70 to 79 (old) and more than 80 (oldest old) – as shown in Table 2. The young age group accounts for 61.8% of urban households but only 59.3% of the rural households. The oldest old, on the other hand represent 8.4% of the rural households but only 7.1% of the urban.

Table 2: Age distribution of Heads of Household

| Age Group | Urban | | Rural | |
|------------------|--------------|--------|--------------|--------|
| 60 - 69 | 6,107 | 61.8 % | 6,047 | 59.3 % |
| 70 - 79 | 3,079 | 31.1 | 3,288 | 32.3 |
| 80 + | 703 | 7.1 | 859 | 8.4 |
| Total | 9,889 | 100.0 | 10,194 | 100.0 |

Rural households exhibit a much lower level of schooling than the urban counterparts, with 1.2 years of schooling, compared to 4.14. Table 3 gives a more detailed view of the level of education. About three fourths of the rural elderly have education below the elementary level and only one percent have high school or higher education level. The Urban elderly have much higher levels of schooling overall.

Table 3: Education Level of Heads of Household (%)

| | Rural | Urban |
|------------------|--------------|--------------|
| None/very little | 74.4 | 41.2 |
| Elementary | 20.1 | 26.8 |
| Middle school | 4.4 | 15.5 |
| High school | .7 | 6.8 |
| Technical school | .2 | 2.5 |
| College | .1 | 3.3 |
| University | .0 | 3.9 |

Tables 4 and 5 provide insights as to the organization and composition of the household, such as the marital status of the head of the household and the “family type”.

Table 4: Marital status (%)

| | Rural | Urban |
|---------------|--------------|--------------|
| Married | 59.9 | 69.1 |
| Separated | 2.4 | 1.4 |
| Divorced | .8 | .7 |
| Widowed | 35.8 | 28.1 |
| Never married | 1.1 | .7 |

Urban elderly are more likely to be married than rural elderly – 69.1 percent and 59.9 percent, respectively – whereas rural elderly are more likely to be widowed or separated. Given the age-related differences, this result is not surprising.

Table 5: Type of household (%)

| | Rural | Urban |
|------------------|--------------|--------------|
| One generation | 42.9 | 41.1 |
| Two generation | 19.0 | 23.5 |
| Three generation | 35.5 | 34.2 |
| Four generation | 2.5 | 1.2 |

Extended family arrangements are still the norm with 38 percent of the rural households and 35 percent of the urban households following a three or four generation organizational pattern. However changes are occurring and many of the elderly are now living alone or as a couple. An increasing number of households are now made up of simply one generation (single family) – about 43 percent and 41 percent in the rural and urban samples, respectively (table 5). We would expect these families more likely to have lower incomes and therefore to be poorer than the multiple-generation-type-households.

4. Empirical Findings: Income Disparities

The Survey records both the received income (which is virtually zero, given the fact that the retirement age in China is 60 years) and the family income. One complicating factor is

that the question on the urban questionnaire refers to monthly income whereas in the rural questionnaire refers to (last) yearly income.

Table 6: Average income level

| | Rural (yearly) | Urban (monthly) | Urban (yearly) ⁷ |
|--------------------------|----------------|-----------------|-----------------------------|
| Individual income (yuan) | 0.18 | 1.63 | 19.56 |
| Household income (yuan) | 289.77 | 383.96 | 4,607.52 |
| Gini coefficient | 0.5046 | 0.3486 | |

Urban incomes are much higher than rural incomes, as expected. China’s dualistic approach to development (despite recent attempts to reduce the regional disparities) has resulted in an enduring urban/rural income gap. Urban residents, including elderly, not only enjoy higher incomes but also greater benefits (such as housing and health).⁸ Segregated labor markets and occupations, and government policy contribute to these differences. As a result, rural households’ income and benefits fall significantly short of their urban counterparts.

4.1. Income distribution

The household income distribution within sectors is depicted in the two figures below. One third of rural households report zero or very low income (7.4 percent report zero and 26 percent report between 1 and 1000 renminbi yuan); 41.7 percent report an yearly income between 1001 and 3,000; and 24.6 percent have incomes of 3,000 yuan or higher.

A casual observation suggests that the income distribution within urban households is more equitable (figure 2). Only 1.7 percent of the urban households report an income of zero, and only 23.5 percent report a relatively low income of between 1 and 200 yuan per month; 38.6 percent have incomes between 201 and 400; and 36.2 percent report relatively high incomes of more than 400 yuan.

⁷ Own calculations.

⁸ State-subsidized benefits distinguish China from other modern societies. In addition to “the indirect subsidies through urban infrastructure mostly enjoyed by urban residents, urban employees also receive welfare benefits associated with their employment (Wang and Zuo, 1999).

Figure 1

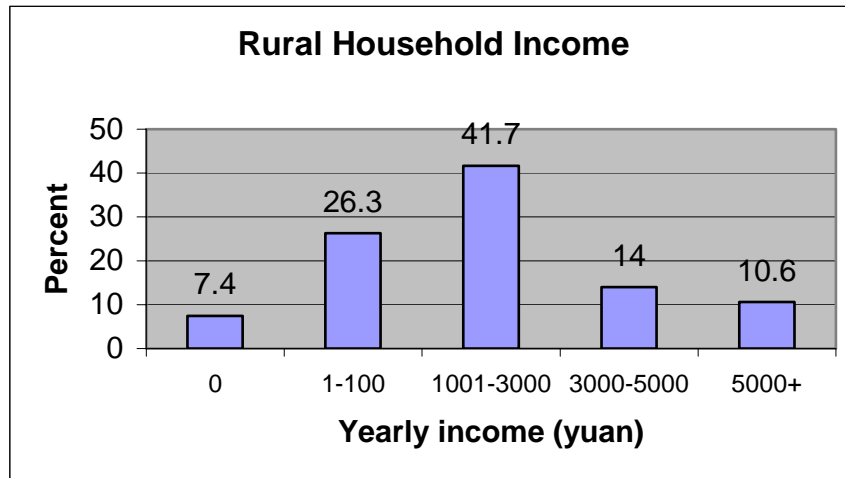
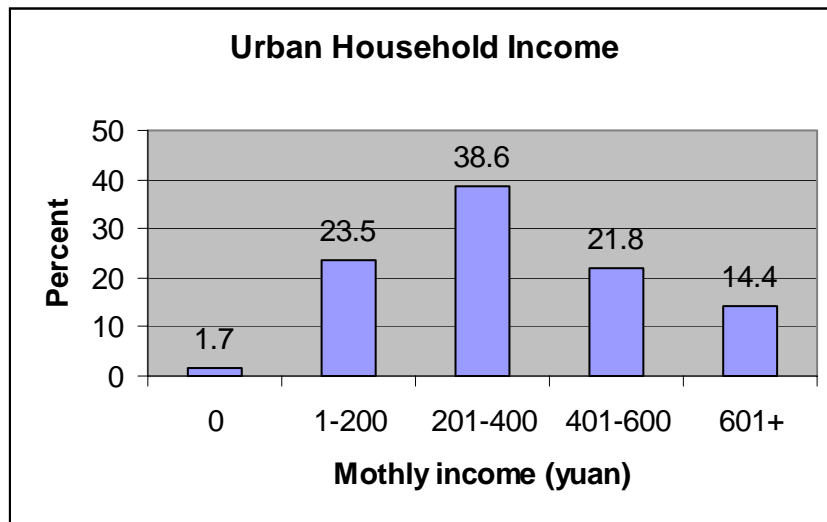


Figure 2

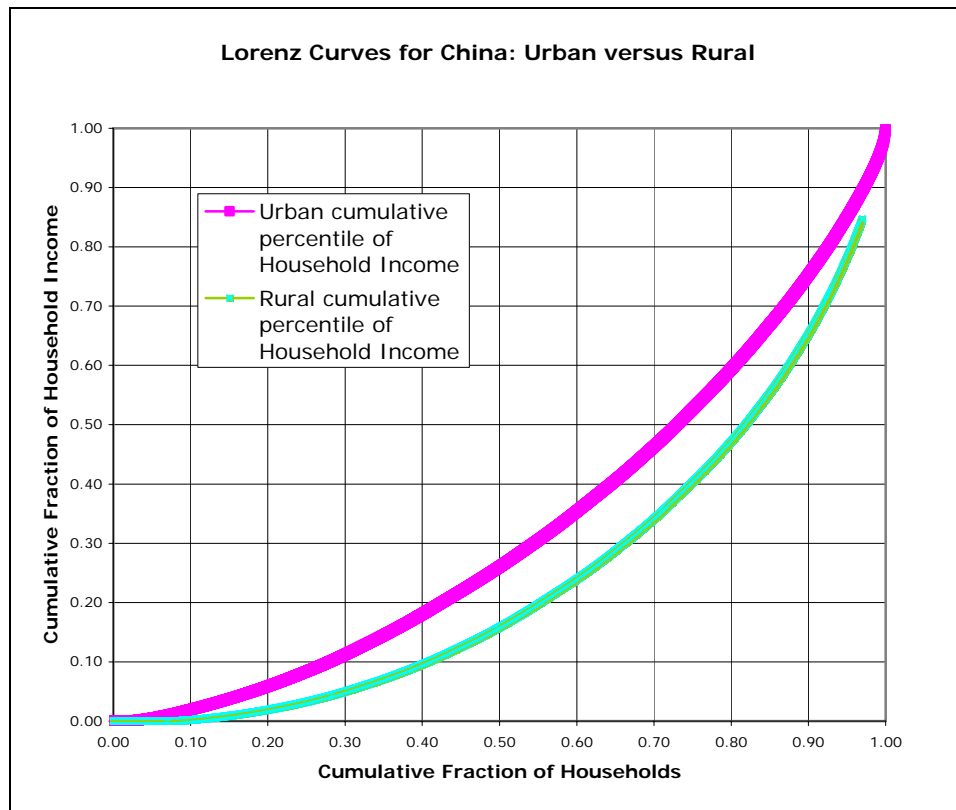


Gini coefficients were computed for a more accurate picture of income inequality in the rural and urban areas and the respective values found to be significantly different – 0.5046 and 0.3486⁹. The Gini coefficient can be expressed as a ratio of two regions defined by a 45-degree line (line of perfect equality) and a Lorenz curve. The Lorenz curves for both sectors are shown in Figure 3. Let A denote the area between the 45-degree line and the Lorenz curve and A+B be the whole area below the 45-degree line or ½ of the unit box.

⁹ Urban inequality would certainly be higher if the “floating population” (migrant workers) would have been included.

Then, the Gini coefficient G can be expressed as: $G = A/(A+B)$.¹⁰ The larger the coefficient, the higher the income inequality. Our results appear to be consistent with the results of Khan et al. (1999), which revealed an urban Gini coefficient of 0.332 for an urban region consisting of eleven provinces. Our estimates are for the whole nation, but it comprises only households headed by elderly.

Figure 3



4.2. Income and education

As described in the previous section rural households are far less educated than their urban counterparts. In a changing Chinese economy where progressively more income is generated by non-farm employment, illiterate or less educated households will be at a disproportionate disadvantage.

“Over half of rural income is now earned outside of farming, so returns to off-farm employment are rightly viewed as major determinants of income inequality.” (Benjamin and Brandt, 1999, pp. 294). Therefore, one could expect more inequality in those villages

¹⁰ See Chakravarty (1999) and Cowell (1999) for measurement details.

with the most off-farm opportunities. Furthermore, as the reform advances this disparity will tend to exacerbate income inequality, both within the rural sector and among the rural and urban sectors.

4.3. Income and age

It is generally accepted that income distribution (and inequality) is related to the life cycle (age). In the case of China's income distribution studies, however, the results are ambiguous. While Gray (1982) suggested that inequality in earnings could be greatly explained by differences in age and gender, studies by Park (1987) and (Hsiung and Putterman (1989) found that life-cycle factors failed to explain a substantial part of inequality. Pudney (1993) found that even though there is evidence of a life-cycle pattern of income earnings and wealth accumulation in China, only a very small part of observed inequality could indeed, be traced to life-cycle factors.

More recently, Benjamin and Brandt (1999) indicate age to be “another potential determinant of income inequality” (pg. 294). We would expect that since our target group is the elderly age would play a lesser role. Below we have cross tabulations of income by age.

Table 7: Family income by age (% of households)

| Family Yearly Income | Age (rural households) | | | |
|----------------------|------------------------|-------|-------|-------|
| | 60-69 | 70-79 | 80+ | Total |
| 0 | 4.6 | 10.9 | 13.4 | 7.4 |
| 1-1000 | 26.1 | 27.9 | 21.9 | 26.3 |
| 1001-3000 | 45.8 | 36.8 | 32.4 | 41.7 |
| 3001-5000 | 14.0 | 13.1 | 18.2 | 14.0 |
| 5001+ | 9.6 | 11.3 | 14.2 | 10.6 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

| Family Monthly Income | Age (urban households) | | | |
|-----------------------|------------------------|-------|-------|-------|
| | 60-69 | 70-79 | 80+ | Total |
| 0 | 1.0 | 2.5 | 5.0 | 1.7 |
| 1-200 | 18.3 | 30.9 | 36.1 | 23.5 |
| 201-400 | 39.8 | 38.2 | 30.2 | 38.6 |
| 401-600 | 24.3 | 18.4 | 16.2 | 21.8 |
| 601+ | 16.7 | 10.1 | 12.5 | 14.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

For both sectors, the young (60-69) report higher incomes than the old (70-79). Two thirds of the young rural households receive income of at least 1000 yuan per year, whereas about 60 percent of the old households fall in that income range. A similar income/age relationship can be found in the urban sector for these two age groups. Among the oldest old (80 and over), however, the pattern is a bit different with a larger proportion reporting zero income – 13.4 percent of the rural households and 5 percent of the urban households – but a relatively significant proportion reporting very high incomes. In other words income inequality seems to be higher among the oldest old, in both sectors.¹¹

4.4. Income and “family type”

Benjamin and Brandt (1999) suggest that two factors have contributed to the worsening of income inequality in rural China. First, uneven factors markets, and second the changing role of the family as a form of redistribution of income. Households, that in the past played the role of redistribution of income, are now changing for several reasons. There is a growing number of single families (elderly living alone or as a conjugal unit), which means the elderly cannot count on theirs children’s support as much as they have in the past.¹² We would expect these households more likely to have lower incomes and therefore to be poorer than the multiple-generation-type-households.

How does the type of family affect household income? A cross-tabulation between the two variables is presented in table 8.

Table 8: Family income by generation (% of households)

| Family Yearly Income | Generation (rural households) | | | |
|----------------------|-------------------------------|-------|--------|-------|
| | One | Two | Three+ | Total |
| 0 | 16.3 | 1.1 | .5 | 7.4 |
| 1-100 | 47.6 | 20.5 | 5.1 | 26.3 |
| 1001-3000 | 31.3 | 56.8 | 46.0 | 41.7 |
| 3001-5000 | 3.9 | 14.5 | 25.3 | 14.0 |
| 5001+ | 1.0 | 7.1 | 23.1 | 10.6 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

¹¹ In a recent study by Yi (2002) the rural oldest old were found to have far less pension support, be significantly less educated, more likely to be widowed and to rely on children for support.

¹² For instance, in northeast China the number of nuclear families went from 33.6% in 1935 to 75.1% 1995 (Benjamin and Brandt, 1999)

| Family Monthly Income | Generation (urban households) | | | |
|-----------------------|-------------------------------|-------|--------|-------|
| | One | Two | Three+ | Total |
| 0 | 3.4 | .9 | .3 | 1.7 |
| 1-200 | 41.9 | 18.0 | 5.7 | 23.5 |
| 201-400 | 40.4 | 44.5 | 32.6 | 38.6 |
| 401-600 | 11.3 | 23.6 | 32.9 | 21.8 |
| 601+ | 3.1 | 13.0 | 28.4 | 14.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Both rural and urban elderly living in extended family type households are better off than those living in a single-family unit (either alone or with a spouse). About two thirds of the rural elderly live in households with zero or less than 100 yuan per year, and almost half of the urban elderly live in households with zero or less than 200 yuan per month. In both samples the highest incomes are present in three-generation type households, with half of the rural elderly and almost two thirds of the urban elderly in the two highest income groups.¹³ According to Lin (2002) intergenerational support tends to be the lowest in mid-developed urban areas. He also suggests that the elderly-support system in China will diverge from the one we find in western countries.

4.5. Income support government policies

Table 9 shows the average income received by rural and urban households and their sources. The difference between the two is therefore even more striking when considering that the figures for rural households are yearly figures whereas urban figures are monthly (one could multiply the urban figures by 12 for better comparison). Why is the state support so much higher for urban households than the rural ones?

(1) urban elderly predominantly have been employed before retirement, therefore most of them enjoy pension system,

(2) urban elderly are more educated than rural elderly and thus are more able to be employed in the labor market thus even after retirement they still have full or partial income,

¹³ According to Lin (2002) intergenerational support tends to be the lowest in mid-developed urban areas. He also suggests that the elderly-support system in China will diverge from the one we find in western countries.

(3) urban elderly have better social networks or social ties that help them get more support from state government,

(4) urban areas have better social welfare systems than the rural, which is embedded in the biased hierarchy system.

Table 9: Average income level and its sources (yuan)

| | Rural (yearly figures) | Urban (monthly figures) |
|----------------------------|----------------------------------|-----------------------------------|
| Personal Income | .18 | 1.63 |
| Family Income | 289.77 | 383.96 |
| Spouse income* | 307.64 | 92.84 |
| Kids' support | 38.41 | 253.02 |
| Relative support | 19.08 | 17.76 |
| Local government support | 53.51 | 2.8 |
| Central government support | 42.13 | 531.77 |
| Other income | 9.58 | 48.69 |

* only a fraction of spouses do work so this average is misleading

On the other hand the community/local support is relatively more important for the rural households, for the following reasons,

(a) rural elderly are predominantly farmers and self-employed peasants who never had pension system or any social security,

(b) rural elderly are more likely to entirely depend on their children, spouses, relatives, or local community for income support,

(c) since elderly have increasingly higher mortality than any of other age groups, also since the children of these rural elderly are mostly farmers who don't earn wages, thus once they become widowed or get poorer or lost their working ability even their children are unable to provide support, they would apply for support from the local community,

(d) China's rural grass-roots organizations have specific and systematic agencies such as local brigades or communes or counties, which are set up for this purpose,

(e) China's vast elderly are in the rural areas. Though the state government has little ability to help the all of the rural elderly, the local communities or counties are supposed to

take that responsibility for these elderly. As a result, the community/local support, overall in China, is higher for the rural households.

Though in the past government policies have consistently favored urban residents, recent changes in subsidies (such as food and housing) may be aggravating income inequality, particularly in the urban sector (Khan et. al.,1999).

4.6. Poorly developed factor markets

China's economic transformation from a centrally planned economy to a market economy has been a very gradual process. It started with liberalization of prices (product markets) without liberalizing factor markets (Naughton 1994). The result is highly inefficient and distorted labor, land, and capital markets throughout the whole economy, but even more so in the rural sector.

Although the economic reform started in the countryside with the contract responsibility system, the uneven development of the factor markets has hindered the development in the rural areas and exacerbated the income inequality. In a study of income inequality in rural China Benjamin and Brandt (1997) found that income inequality was lower in villages with more active factor markets.

The rigidities in the labor market have hindered labor mobility and reduced the number of economic opportunities available to rural residents. In the last decade changes in migration-control have allowed very large labor flows but a dual system still exists and results in far less benefits and subsidies for those workers.

The majority of the Chinese elderly, namely the rural elderly who had once held high status in earlier agricultural societies by virtue of their control of scarce resources and their knowledge of tradition, find themselves in a lower status in the process of industrialization. This will add to the diverged disparities between the rural and the urban elderly (Ji, 1997).

Though significant changes are occurring – such as increasing mobility of workers – the factor markets are still ineffective, particularly in the rural areas, and may therefore contribute to the growing income inequality.

5. Conclusion

This study uses a nationwide household level survey to assess differences between rural and urban households. The study is unique in two ways: (1) relies on a nationwide survey whereas most studies target a given province or region; (2) narrows the population surveyed to households headed by elderly, defined as 60 years of age or older.

We find a significant difference in rural versus urban income inequality. Gini coefficients show that income inequality is significantly higher among rural households than urban households. These results are consistent with other region-specific kind of income inequality studies.

Explanatory factors include demographic characteristics of households, namely the level of education, age and marital status; institutional factors such as living arrangements; urban-biased government policies and a long history of development and government policy relatively more favorable to urban residents; and poorly developed factor markets. Rural households are older, less educated, have more children, and are somewhat larger than the urban counterparts.

One interesting line of research would be to extend the analysis to include disparities in expenditures and health and to calculate age-specific Gini coefficients. In addition, since the current study only applies to the distribution of household income it may be of interest to measure disparities in income per capita.

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