

Economic Poverty Among Older People in Urban and Rural China

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ABSTRACT

Economic poverty among older people in urban and rural China is examined with applying different poverty lines for three distinct dimensions. With data from a large representative survey in China in 2015, this paper finds the absolute economic poverty incidence is only 0.6% among Chinese urban elders, almost eliminated. But it is 6.6% among Chinese rural elders. For the relative economic poverty, it is much higher than the absolute economic poverty, no matter applying separate poverty lines or a union relative poverty line in urban and rural China. Meanwhile, the subjective economic poverty is still worrying that 14.1% of Chinese urban elders and 34.1% of Chinese rural elders feel difficult in 2015. Also, the large urban and rural distances in absolute, relative or subjective economic poverty have been observed. Economic poverty among Chinese rural elders is much severer than their urban peers.

Keywords: *economic poverty, older people, FGT (Foster, Greer and Thoebecke) measure*

I. INTRODUCTION

Poverty is a global issue. Different poverty situations exist across different cultures, populations and periods. Chinese people experienced a particularly tough period from 1949 to 1978 when new People's Republic of China established and China emerged from eight years' Second Sino-Japanese War and four years' national war. In the year 1978, Chinese government implemented the famous Reform and Opening-up Policy under Deng Xiaoping's rule. China made quite impressive advances in promoting economic development from then on, and remarkable economic growth freed a great number of Chinese citizens from absolute economic poverty (see Li and Piachaud, 2004; Ravallion & Chen, 2007; World Bank, 2009; Li et al., 2016).

However, overall success of poverty reduction did not mean poverty was released with all population groups. Less progress may exist within some particularly vulnerable groups. One such group that has been the focus of much investigation around the world is the aged (see Saunders, 2007). In China, much poverty analysis was delivered from the 1980s when China was open to world (Li & Piachaud, 2004; Ravallion & Chen, 2007; Appleton, Song & Xia, 2010; Liu & Xu, 2016; Li et al., 2019). But quite limited studies were focus on older people poverty (Saunders, 2007; Saunders & Sun, 2006; Cai et al., 2012).

Meanwhile, population aging in China has become more and more rapid in the 21st century. China is deemed far from being ready for its coming explosive population ageing, and it is vividly described as becoming older before getting rich. Under this background, poverty is much easily exploded among the aged. Hence, this study is to apply different poverty lines to reveal economic poverty among Chinese rural and urban elders in 2015. Three distinct dimensions are used for the poverty measurement, including income, consumption, and subjective self-reported economic situations. Poverty incidence, poverty gap and poverty severity will be reported and examined. The poverty differences between urban and rural China will also be showed.

II. CONCEPTS

Concepts of poverty currently in use in social research have evolved from decades of discussion and debate among generations of scholars. One key topic turns on the opposition between the absolute and relative concepts of poverty. Poverty was originally viewed as an absolute lack of the necessities of life, a concept which in academic terms can be traced back to Seebohm Rowntree's early classic empirical poverty research, *Poverty: a Study of Town Life* (1901). This concept dominated the field until the 1970s. It came to be widely questioned since subsistence and physical survival were no longer the core problem, but

inadequacies in living standards could still be identified in terms of shortfalls from prevailing notions of what constituted an acceptable social minimum. As a consequence, the relative concept of poverty was proposed and came to be widely accepted in reference to common living standards of societies.

Under the relative concept, poverty is defined as lacking the resources to attain standards of living and social relations which enable a minimum level of participation in the surrounding society (Townsend, 1979, 1993; Macpherson & Silburn, 1998; Spicker, Leguizamon & Gordon, 2007). The reference to social needs rather than just physical survival, and to prevailing common living standards rather than absolute minima, are the main elements that distinguish the relative from the absolute concept of poverty. In practice, the absolute poverty concept is still in widespread use in developing regions where acute absolute poverty affects large numbers of people (Chen & Ravallion, 2007). While poverty is understood and viewed in a relative way in rich countries where absolute deprivation has been widely eliminated and higher living standards have been achieved (Nolan & Whelan, 1996).

Undoubtedly, absolute and relative poverty are the most influenced concepts in poverty studies from the very beginning. With the development of human society, poverty situations become so complicated that it can be defined more detailed, such as income poverty, consumption/expenditure poverty, food poverty, fuel poverty, education poverty and so on. Those concepts emphasize poverty aspects or dimensions that measured. Also, by integrating different dimensions together in defining and measuring poverty becomes the core basis of the multidimensional concept of poverty. It emphasizes the significance of many kinds of living resources and usually uses both income and non-monetary indicators in considering poverty (Nolan & Whelan, 2011). While chronic and transient poverty are concepts emphasizing the time period poverty lasts, and subjective or objective poverty distinguish the poverty situations subjectively or objectively describing.

Hence, poverty can be absolute, relative, or multidimensional. It can also be chronic or transit, objective or subjective. It depends on how poverty is defined and measured. This paper basically targets to the economic poverty among older people in urban and rural China. Three dimensions are examined. Income is used for measuring absolute economic poverty, consumption is used for examining relative economic poverty, and self-reported economic situations are used for revealing subjective economic poverty among Chinese urban and rural elders.

III. DATA

The data of this paper is from a large-scale national survey in China, the *2015 Sample Survey of the Aged Population in Rural/Urban China (2015 SSAPR/UC)*.¹ The survey is conducted by the *China Research Centre on Aging (CRCA)*, an authoritative institution for ageing studies in China, which possesses resources to carry out large-scale investigations.

In the *SSAPR/UC* survey, rural areas are distinguished from urban areas by using official administrative divisions in China, and qualified respondents are registered Chinese elders aged 60 years and over. Standardized questionnaires are designed and applied. They gather comprehensive information of the respondents, including basic demographic information, farming and working situations, individual/household income, individual/household consumption, and many other subjective situations of older people in urban/rural China. The survey has many advantages, such as extensive investigation scope, large sample size, and good investigation quality control, representativeness and so on. Particularly, information on income, consumption and self-reported economic situation allow us to wholly analyze economic poverty experienced by older people in urban/rural China.

IV. RESEARCH METHODS

How poverty should be measured has been a key issue from the very beginning of poverty analysis. It turns on two core issues – how to distinguish the poor from the non-poor and how to assess the extent of poverty among the poor. Those two steps are the ‘identification’ and ‘aggregation’ of poverty measurement, which is developed by Sen (1976, 1979) and has been the standard steps in poverty measurement (Nolan & Whelan, 1996; Ravallion, 1998; Coudouel et al., 2002; Alkire & Foster, 2009). This article also follows the two-step procedure to measure economic poverty of older people in urban and rural China.

A. Economic poverty identification

The core of the poverty ‘identification’ step is to set or select appropriate poverty lines/thresholds for specific poverty dimensions. The poor will be identified if they cannot reach the standard of the poverty lines/thresholds (Nolan & Whelan, 1996; Ravallion, 1998; Coudouel et al., 2002).

In practice, the most frequently used dimensions for economic poverty are income and consumption (Ravallion, 1992; Nolan & Whelan, 1996; Coudouel et al., 2002). Besides income and consumption, this article

¹ SSAPR/UC is official English title. Another English translation, *China Urban and Rural Elderly Surveys (CURES)*, is found in *The Elderly and Old Age Support in Rural China* (Cai et al., 2012).

also uses self-reported economic situations as one dimension based on SSAPRC/UC survey data. Income and consumption can objectively reflect the absolute and relative economic poverty of Chinese older people,

while the self-reported economic situations can reflect the subjective economic poverty of Chinese older people. "Table I" shows the dimension descriptions in SSAPRC/UC survey.

TABLE I. DIMENSION DESCRIPTIONS IN 2015 SSAPRC/UC SURVEY

Dimensions	Description
Income	Household based yearly gross income
Consumption	Household based yearly consumption
Subjective Economic hardship	Self-reported economic quite difficult; or difficult; or basically enough; or enough; or rich.

In practice, for the above dimensions, there is typically not only one poverty line. Generally, an absolute poverty line is defined by reference to the cost of the minimum basic products needed for survival, while a relative poverty line is defined in relation to the overall distribution of income in society (Ravallion, 1998; Macpherson & Silburn 1998; Nolan & Whelan, 1996; Coudouel et al., 2002). The former is usually used in developing world, and the latter is widely used in developed world. However, much information is needed either for setting an absolute poverty line or a

relative poverty line in a given population group. Therefore, this paper draws on poverty lines that have achieved a degree of legitimacy. In order to examine older people poverty under international standards, this paper use income dimension and apply the World Bank absolute income poverty line to measure absolute economic poverty. Consumption is used for examining relative economic poverty by using 60% of median income of Chinese older people. It calculated based on 2015 SSAPRC/UC survey data. "Table II" shows the level of those poverty lines.

TABLE II. LEVEL OF POVERTY LINES

Poverty Lines (per year)	Urban	Rural	Union
World Bank Absolute Income Poverty Line	¥2540	¥2540	¥2540
Relative Poverty Line	¥20104	¥5939	¥8587

^a Note: World Bank absolute income poverty line is 2 dollars per person per day. It is converted into RMB (¥) using purchasing-power parity (PPP). The 2015 PPP of China is 3.48.

B. Poverty aggregation

The core of the poverty ‘aggregation’ step is to apply appropriate poverty measures to assess the extent of poverty. Many poverty measures have been proposed and developed in the literature, and some popular poverty index have been summarized and discussed in many articles (Sen, 1979; Kakwani, 1980; Foster 1984; Atkinson, 1987; Ravallion 1992; Foster & Sen, 1997; Zheng, 1997). This paper follows the most popular and influential Foster, Greer and Thorbecke (FGT) measure to reveal older people economic poverty in China.

FGT measure was proposed by Foster, Greer and Thoebecke (1984). It mainly includes three indexes, the headcount ratio index, the poverty gap index, and the squared poverty gap index (poverty severity). They are widely used in empirical studies, and have been recognized as the main index for one-dimensional poverty aggregation (Ravallion, 1992; Coudouel et al., 2002; United Nations Development Group, 2003; Alkire & Foster, 2009). They describe in turn the incidence of poverty, the depth of the poverty and the inequality among the poor. They can be calculated by the following formulae (Foster, Greer and Thorbecke,

1984; Ravallion, 1992; Coudouel et al., 2002; Alkire & Foster 2009).

The headcount ratio index *H*, which is also called the incidence of poverty or the poverty rate, is the simplest and most widely used index of the three. It calculates the proportion of the poor in a given population. Suppose that on the basis of the selected poverty line *z*, *q* people are identified as poor in a population of size *n*. The headcount poverty index *H* is defined as:

$$H = \frac{q}{n}$$

The headcount ratio can directly indicate the poverty rate among a given population. The poverty gap index *PG* identifies the depth of poverty by capturing the average shortfall between the poor and the poverty line *z*. If the income of the poor *i* is *y_i*, *PG* can be defined as:

$$PG = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]$$

Unlike the headcount ratio, the poverty gap is sensitive to income differences among the poor and can indirectly reflect the minimum total resources needed to raise the poor above the poverty line. The squared poverty gap index P_2 measures the severity of the poverty, and is defined as:

$$P_2 = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]^2$$

It makes up for the drawbacks of the poverty gap parameter by taking account not only of the distance separating the poor from the poverty line but also of the inequality among the poor, in particular by emphasizing the conditions of the poorest among the poor. Clearly, ‘the measures of depth and severity of poverty are important complements of the incidence of poverty’ (Coudouel et al., 2002).

V. RESULTS

A. Absolute economic poverty among older people in urban/rural China

By using World Bank absolute poverty line as poverty threshold, it can be seen that only around 4.6% of Chinese older people experienced absolute economic poverty in China, most Chinese older people has released from absolute economic poverty (see "Table III"). Meanwhile, it is worth noting that the absolute economic poverty is uneven between urban and rural China. In rural China, poverty incidence (headcount ratio) is 6.6%, while it is only 0.6% in urban China. Also, poverty gap and poverty severity in rural China are much higher than those in urban China (see "Table IV"). In sum, although the absolute economic poverty is rare phenomenon in urban China, but a small part of Chinese rural aged still struggle in absolute economic poverty. The absolute economic poverty differences between urban and rural China are large.

TABLE III. ABSOLUTE POVERTY INCIDENCE AMONG OLDER PEOPLE IN URBAN AND RURAL CHINA

	Poverty Line	Headcount Ratio	Chi^2
<i>Urban</i>	¥2540	0.6%	Pr < 0.001
<i>Rural</i>	¥2540	6.6%	
<i>Total</i>	¥2540	4.6%	

^a. Data Sources: SSAPRC/UC survey 2015.

TABLE IV. ABSOLUTE POVERTY GAP AND POVERTY SEVERITY AMONG OLDER PEOPLE IN URBAN AND RURAL CHINA

	Poverty Line	Poverty Gap PG	Squared Poverty Gap P ₂
<i>Urban</i>	¥2540	0.0009	0.0006
<i>Rural</i>	¥2540	0.0153	0.0084
<i>Total</i>	¥2540	0.0162	0.0090

^a. Data Sources: SSAPRC/UC survey 2015.

B. Relative economic poverty among older people in China

By using different poverty lines (separate median income in rural and urban China respectively), it can be seen that the relative poverty incidence is 23.4% among Chinese urban older people and 29.1% among Chinese rural older people (see "Table V"). The rural aged not only has higher poverty headcount ratio, and also higher poverty gap and poverty severity (see "Table VI"). The poverty differences seem not too large between the urban and the rural aged, but the distance of the poverty lines are large. The median income of the rural aged was 5939, while the median income of the

urban aged is 20104, three times more than the median income of the rural aged. By using separated poverty lines with large distances, the rural older people still experiences higher relative economic poverty than their urban peers.

Taken urban and rural older people together, the median income is ¥8587. Using ¥8587 as the union poverty line, huge differences exists. The relative poverty incidence is only 5.9% in urban China, while it is 44.7% in rural China (see "Table V"). Extensive distances also exist in poverty gap and poverty severity between the urban and rural older people (see "Table VI").

TABLE V. RELATIVE POVERTY INCIDENCE AMONG OLDER PEOPLE IN URBAN AND RURAL CHINA

	Separate poverty Line	Headcount Ratio	Chi²	Union Poverty Line	Headcount Ratio	Chi²
<i>Urban</i>	¥20104	23.4%	Pr < 0.001	¥8587	5.9%	Pr < 0.001
<i>Rural</i>	¥5939	29.1%		¥8587	44.7%	
<i>Total</i>	¥20104/¥5939	27.2%	—	¥8587	32.1%	—

^a. Data Sources: SSAPRC/UC survey 2015.

TABLE VI. RELATIVE POVERTY GAP AND POVERTY SEVERITY AMONG OLDER PEOPLE IN URBAN AND RURAL CHINA

	Separate Poverty Line	PG	P₂	Union Poverty Line	PG	P₂
<i>Urban</i>	¥20104	0.0284	0.0156	¥8587	0.0071	0.0040
<i>Rural</i>	¥5939	0.0774	0.0434	¥8587	0.1302	0.0758
<i>Total</i>	¥20104/¥5939	0.1058	0.0590	¥8587	0.1373	0.0798

^a. Data Sources: SSAPRC/UC survey 2015.

C. Subjective economic poverty among older people in China

Based on 2015 SSAPRC/UC survey data, it can be seen that there are 14.1% older people describing their

economic status as difficult; and 34.1% rural older people describing their economic status as difficult, far higher than the percentage of urban aged (see "Table VII").

TABLE VII. SUBJECTIVE POVERTY INCIDENCE AMONG OLDER PEOPLE IN URBAN AND RURAL CHINA

	Difficult	Basically enough	enough	Chi²
Urban	14.1%	62.2%	23.7%	Pr < 0.001
Rural	34.1%	55.0%	10.9%	
Total	27.6%	57.4%	15.0%	—

^a. Data Sources: SSAPRC/UC survey 2015.

VI. CONCLUSION

Obviously, different poverty lines lead to quite different poverty results. Also, results may be in large distances by applying different data sets and analytical methods. Among the limited researches which examine older people poverty in China, Yu (2003) reports 20.7% of older people in urban China and 40.9% of older people in rural China experience economic poverty based on subjective self-assessed economic status in 2000 SSAPRC/UC survey data. Also, applying 50% mean income of urban and rural elders as poverty lines respectively, Yu (2003) finds the older people income poverty incidence is 28.1% in urban China and 39.3% in rural China. While using same dataset (2000 SSAPRC/UC survey data), Qiao et al. (2005) estimated the older people income poverty incidence was around 18.8% in rural China and 15% in urban China in 2000 by applying Urban Minimum Living Standard (UMLS) as urban poverty line and UMLS multiplied by 0.3 as

rural poverty line. Cai et al. (2012) reports the income poverty incidence is around 19.6%–30.3% in rural China by applying different poverty lines. Meanwhile, the large differences between urban and rural China has been noticed in those researches.

In this paper, using 2015 SSAPRC/UC survey data, it finds the absolute economic poverty incidence is only 0.6% among Chinese urban elders, almost eliminated. But it is 6.6% among Chinese rural elders. For the relative economic poverty, it is much higher than the absolute economic poverty, no matter applying separate poverty lines or a union relative poverty line in urban and rural China. Meanwhile, the subjective economic poverty is still worrying that 14.1% of Chinese urban elders and 34.1% of Chinese rural elders feel difficult in 2015. Also, the large urban and rural distances in absolute, relative or subjective economic poverty have been observed. The distances occurs in poverty incidence, poverty depth and poverty severity.

Economic poverty among Chinese rural elders is much severe than their urban peers.

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