Comparing Poverty Among Older People in Urban China Internationally*

Peter Saunders

ABSTRACT The decline in China's overall poverty rate in recent decades reflects the success of the economic reforms, but it is also important to examine the structure of poverty. Its incidence among older people can highlight where and how pension schemes and other mechanisms succeed in providing income adequacy in old age. This article compares poverty rates among the aged living by themselves (or with their spouse) in urban China with those existing in a range of other, mainly richer industrial countries. It uses data from a national survey of the aged in China conducted in 2000 and estimates derived from the Luxembourg Income Study (LIS), an international project that has set the standards for comparative research on economic well-being, poverty and inequality. The results provide a robust assessment of how well China has performed in reducing poverty among older people. Using poverty lines set at one-half of median and mean income, the analysis indicates that while relative poverty among older people in urban China exceeds that in other countries, the gap varies with living arrangements, where the poverty line is set and how older people are defined, but is far smaller than the underlying differences in per capita income.

The rapidly growing Chinese economy has generated a large increase in real income, leading to a reduction in poverty that the Asian Development Bank has described as "nothing short of remarkable."[1] However, while the decline in China's overall poverty rate reflects the success of its economic reforms, it is also important to disaggregate the overall poverty trend, since information on the structure of poverty and how it has changed can highlight the impact of social protection programmes and other trends. One of the groups that have been the focus of such investigation around the world is the aged. Their vulnerability to poverty increases as their market earnings decline after retirement, and old-age

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1 Asian Development Bank, *Asian Development Outlook 2000* (Oxford: Oxford University Press, 2000), p. 179.

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pension programmes have been widely used to offset this decline. Exploring patterns of poverty among older people thus provides an indication of the success of poverty programmes in relation to a particular high-risk group.

Aged poverty in China is especially important because of the large numbers involved, but also because many older people are still inadequately covered by state pensions, or are victims of the collapse of enterprise-based pension schemes. They must thus often rely on support from younger family members, but the economic pressures facing younger people, including the need to start contributing to their own pension schemes, may mean that such support is not forthcoming. Current cohorts of older people are thus too old to benefit directly from China's economic reforms, but too young to benefit fully from its pension reforms. They must rely on informal systems of support that are becoming increasingly insecure in the face of the dynamics of economic and social change. We thus need a better understanding of the dimensions of poverty among older generations in order to assess how widely the economic improvement of younger generations is being spread.

This article contributes to the literature on poverty in China by examining how poverty among older people living in urban areas compares with that existing among older people living in rich industrial countries. Cross-country comparisons of aged poverty rates can highlight how effectively pension schemes succeed in providing income adequacy in old age. Partly for this reason, such comparisons have attracted considerable attention by international agencies like the Organization for Economic Co-operation and Development (OECD)[2] as well as individual researchers.[3] However, the usefulness of such comparisons depends critically on the appropriateness of the methods and data used to produce them. These must be standardized across countries if the resulting comparisons are to be valid, which involves using comparable data combined with research instruments that are internationally applicable. In the context of poverty, this involves using an "international poverty line"[4] that has relevance across countries that may differ greatly in terms of their institutional apparatus and social conditions, as well as in their approach to research and policy.

2 See OECD, *Maintaining Prosperity in an Ageing Society* (Paris: OECD, 1988); *Ageing and Income. Financial Resources and Retirement in 9 OECD Countries* (Paris: OECD, 2001); and M.F. Föster and M.M. d'Ercole, "Income distribution and poverty in OECD countries in the second half of the 1990s," *OECD Social, Employment and Migration Working Paper No. 22* (Paris: OECD, 2005).

3 The OECD study by Föster and d'Ercole is typical in its emphasis on the role of pension systems in protecting older people from poverty. This study also pays attention to the role of housing costs, which can exert a great influence on how countries rank in terms of aged poverty rates. Other studies include G. Bonoli, *The Politics of Pension Reform. Institutions and Policy Change in Western Europe* (Cambridge: Cambridge University Press, 2000); and J. Williamson and T.M. Smeeding, "Sliding into poverty? Cross-national patterns of income source change and income decay in old age," *Working Paper No. 388*, Luxembourg Income Study, Maxwell School of Citizenship and Public Affairs, Syracuse University, 2004.

4 C-K. Wong, "Measuring third world poverty by the international poverty line: the case of reform China," *Social Policy & Administration*, Vol. 29, No. 3 (1995), pp. 189–203.

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In the case of a developing country like China, this suggests that the comparisons should be restricted to those living in urban areas, since the nature of poverty in rural China differs substantively from that existing in industrial countries.[5] In applying the comparative method to estimate poverty among the aged in urban China, this article follows other recent studies using Chinese data that have drawn on the methods developed in international poverty research.[6] The adoption of a comparative framework has important implications for how poverty is defined and the data sources used, both of which must be chosen to achieve maximum comparability. This may involve some sacrifice in terms of what is regarded as the "state of the art" within individual countries, but the presumption is that any such loss is more than offset by the added value of the resulting comparisons. The results presented here illustrate both the sacrifices and the benefits gained from using the comparative method to examine how aged poverty in urban China compares with that in a broad range of other countries.

The article begins by briefly reviewing recent studies of poverty in China by way of background, before describing the data sources and methods used in the study. It then presents and discusses the results, broken down by gender, age and living arrangements.

Recent Research

Establishing how poverty has changed raises complex issues of definition and measurement. Estimates of the national poverty rate, its breakdown between social classes or geographically, and trends over time are sensitive to the methods used to estimate poverty, particularly to where the poverty line is set. Most studies in developing countries adopt an approach in which the poverty line is based on the cost of purchasing a diet that satisfies minimal calorific intake requirements.[7] However, they differ in the data sources used, and whether (and how) allowance is made for regional variations in food prices, and for the cost of non-food items.[8]

5 As Wong argues: "living in an affluent region of poor countries, the urban poor are in a better position than their rural compatriots in terms of command over social resources and opportunities for self-advancement … In policy debates, therefore, the international poverty line could help to record the extent to which the poor share in the newly created economic wealth in the affluent region of some third world countries." *Ibid.* p. 191.

6 See B. Gustafsson and S. Li, "The structure of Chinese poverty, 1988," *The Developing Economies*, Vol. 36, No. 4 (1988), pp. 387–406; B. Gustafsson and Z. Wei, "How and why has poverty in China changed? A study based on microdata for 1988 and 1995," *The China Quarterly*, No. 164 (2000), pp. 983–1024; B. Gustafsson, S. Li and H. Sato, "Can a subjective poverty line be applied to China? Assessing poverty among urban residents in 1999," *Journal of International Development*, Vol. 16 (2004), pp. 1089–1107; and S. Li, "Changes in poverty profile in China," *Discussion Paper 2001/21*, WIDER, United Nations University, Helsinki, 2001.

7 M. Ravallion, "Issues in measuring and modelling poverty," *Economic Journal*, Vol. 106 (1996), pp. 1328–43.

8 It is important to note that these differences imply that there is no single national poverty line, but a variety of different lines that vary with local conditions, even though they have been derived from a single framework (e.g. the cost of a subsistence basket of goods).

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Despite these differences, most studies show that overall poverty in China declined in the 1980s and early 1990s, but recent evidence suggests that both rural[9] and urban[10] poverty have been broadly stable since the early to mid-1990s. It has been estimated that the rural poverty rate fell from over 75 per cent in 1980 to 13 per cent by 1997, and remained stable between then and 2001.[11] Urban poverty, while much lower, has also been more or less stable since the mid-1990s, although one study estimated that it increased between 1992 and 1997,[12] while another estimates that rural and urban poverty rates fell sharply between 1995 and 2002.[13]

These studies focus on the aggregate situation, distinguishing only between rural and urban poverty and (in some cases) presenting a further breakdown by province or region. However, it is also important to understand the demographic structure of poverty in order to identify policy interventions that can even out the poverty risks facing different demographic groups. This issue has been examined for China in a series of studies that have explored how poverty varies with gender and age as well as education and household size using data from the *Household Income Surveys* conducted by the Institute of Economics in the Chinese Academy of Social Sciences (CASS) in 1988 and 1995,[14] the latter applying logistic regression to identify the socioeconomic correlates of rural poverty. Another study using the same data examined the socioeconomic profile of poverty in 1995, regression modelling showing that the probability of being poor in urban China varies systematically with age, family size, occupation and employment status, and location.[15]

Studies have examined urban poverty in twelve cities, in Guangzhou only and compared Guangzhou with Shanghai[16] In each case, the poverty line has been set relative to the level of income prevailing in each city, giving rise to considerable cross-city variation.[17] These studies are significant in the current context, not only because they use a relative (income) poverty line, but also because they examine how poverty is related to socioeconomic characteristics,

9 B. Li and D. Piachaud, "Poverty and inequality and social policy in China," *CASEpaper 87*, Centre for the Analysis of Social Exclusion, London School of Economics, 2004.

10 X. Meng, R.G. Gregory and Y. Wang, "Poverty, inequality, and growth in urban China, 1986–2000," *Journal of Comparative Economics*, Vol. 33, No. 4 (2005), pp. 710–29.

11 M. Ravallion and S. Chen, "China's (uneven) progress against poverty," mimeo, Development Research Group, World Bank, Washington DC, 2004.

12 Meng, Gregory and Wang, "Poverty, inequality, and growth."

13 A.R. Khan, "Growth, inequality and poverty. A comparative study of China's experience in the periods before and after the Asian crisis," mimeo, University of California, Riverside, 2004.

14 Gustafsson and Li, "The structure of Chinese poverty"; Gustafsson and Wei, "How and why has poverty in China changed?"

15 Li, "Changes in poverty profile," Table 13.

16 Gustafsson, Li and Sato, "Can a subjective poverty line be applied to China?"; Wong, "Measuring third world poverty by the international poverty line"; and C-K. Wong, "How many poor people in Shanghai today? The question of poverty and poverty measure," *Issues & Studies*, Vol. 33, No. 12 (1997), pp. 32–49.

17 For example, the subjective poverty lines (based on local community perceptions of how much is needed to make ends meet) used by Gustafsson, Li and Sato vary (for a three-person household) from 3,642 RMB per month in Pingdingshan to 11,079 RMB per month in Beijing. Wong's (1997) estimated poverty line for Shanghai in 1996 set at 50% of median income is equal to 1,000 RMB per month.

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including age. In relation to poverty among older people, one study has shown that while 39.5 per cent of the poor were aged 60 or over (and a similar percentage were retired), only 14.2 per cent of the non-poor fell into this age range, and 13.7 per cent were retired, while another has shown that although poverty among those aged 61–70 years was 18 per cent lower than the overall poverty rate, it was 58 per cent higher among those aged 71 and over, and 49 per cent higher for the retired as a whole.[18] These studies thus indicate that, at least in the 1990s, older people faced an above-average risk of poverty, particularly those aged over 70.

An implication of these findings is that the reforms made to China's pension system have not gone far enough in providing those over 60 living in urban areas with a guaranteed protection from (relative) income poverty. Even so, the fact that the state pension system has improved in terms of both coverage and the generosity of benefits has meant that the incomes of many older people have increased, even if not by enough to raise them above the poverty line.[19] Furthermore, not all of the reforms have concentrated benefits on those with lowest incomes,[20] although overall the research is beginning to provide a valuable base from which to assess the effectiveness of China's pension reforms in combating poverty among its older population.

Data Sources

This study analyses data from the urban component of the *Sample Survey of the Aged Population in Urban and Rural China* (SSAPURC). The survey was undertaken in December 2000 by the China Research Centre on Ageing (CRCA), under the sponsorship of the All China National Working Commission on Ageing and the China National Committee on Ageing. The latest urban survey was stratified geographically – by province, city, resident district and resident committee – with ten households containing an older person (aged 60 and over) selected from within the jurisdiction of each resident committee for interview.[21] The data provide a comprehensive picture of the economic and social circumstances of older people in China at the end of the millennium, covering the sources and levels of income, spending patterns, insurance coverage, savings, health status and health service use, as well as a

18 Wong, "How many poor people in Shanghai today?" Table 4; Gustafsson, Li and Sato, "Can a subjective poverty line be applied to China?" Tables 7(a) and (b).

19 P. Whiteford, "From enterprise protection to social protection: pension reform in China," *Global Social Policy*, Vol. 3, No. 1 (2003), pp. 45–77. An overview of China's recent pension reforms is provided in P. Saunders, "The role of state and family in the living conditions of older people in urban China: changing attitudes and outcomes," *Social Policy and Society*, Vol. 5, No. 3 (2006), pp. 359–72.

20 Whiteford, "From enterprise protection to social protection"; J.M. Raymo and Y. Xie, "Income of the urban elderly in postreform China: political capital, human capital, and the state," *Social Science Research*, Vol. 29, No. 1 (2000), pp. 1–24.

21 China Research Centre on Ageing, *The Economic Situation of Older People*, CRCA, Beijing, 2001; P. Saunders and L. Sun, "Pension reform in China: imperatives, constraints and opportunities," in R. Smyth, O. K. Tam, M. Warner and C. J. Zhu (eds.), *China's Business Reforms. Institutional Challenges in a Globalized Economy* (London: Routledge, 2005), pp. 157–76.

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range of attitudinal information related to economic well-being, social and political participation, care and support and general developments in Chinese society.[22] The survey covers 10,249 urban respondents aged 60 and over and was conducted close to the Fifth National Census, allowing data from the census to be used to weight the survey data so that they better represent population aggregates.

An important limitation of the SSAPURC data is that they relate primarily to the circumstances of the respondent, with relatively little information about other co-habiting family members (including other aged people) other than their relationship to the respondent. This severely restricts the ability to estimate the living standards of aged people who live with others because information is not available on the incomes of other members of the household.[23] It is, however, possible to estimate the incomes of the spouses of those who live as couples, and this has been done by assuming that co-residing spouses have the same income.[24] Restricting the analysis to those who live alone or with their spouse means that the results do not cover the majority of the urban aged who were living with other people (mainly with relatives) – a feature highlighted in several studies of Chinese living arrangements.[25]

Restricting the analysis to those living alone (or with a spouse) has potential implications for the overall applicability of the estimates presented and discussed below. The key issue relates to the magnitude of the differences that exist between the per capita incomes of those older people who live alone and the per capita *household* incomes of those who live with others. Little information is available on this topic, although one study, using the 2002 *Urban Household Income Distribution Survey* (UHIDS), estimates that the mean per capita income of those who live alone is almost 50 per cent higher than that of those who live with others, the difference mainly reflecting differences in pension

22 The 2000 survey includes many of the same questions that were asked in an earlier survey conducted in 1992. Aspects of the data collected in the earlier survey have been analysed by Y-J. Lee and A. Xiao, "Children's support for elderly parents in urban and rural China: results from a national survey," *Journal of Cross-Cultural Gerontology*, Vol. 13, No. 1 (1998), pp. 39–62; X. Pei and V.K. Pillai, "Old age support in China: the role of the state and the family," *International Journal of Aging and Human Development*, Vol. 49, No. 3 (1999), pp. 197–212; and Raymo and Xie, "Income of the urban elderly in postreform China."

23 This restriction explains why the poverty rates presented below differ from those estimated in other studies that include all older people.

24 An alternative approach involves setting spousal income equal to the mean reported income of older people living as couples of the same age, gender and city of residence. However, the two approaches produce similar poverty rates and so the former method has been used here, mainly because of its simplicity – see P. Saunders and L. Sun, "Poverty, hardship and isolation amongst the urban aged in China," *Social Policy & Administration*, Vol. 40, No. 2 (2006), pp. 138–57.

25 Z. Yi and L. George, "Extremely rapid ageing and the living arrangements of older persons; the case of China," Population Division, Department of Economic and Social Affairs, United Nations, New York, 2000; X. Meng and C. Luo, "What determines the living arrangements of the elderly in urban China?" mimeo, Department of Economics, Research School of Pacific and Asian Studies, Australian National University, Canberra, 2004; and Saunders and Sun, "Pension reform in China." Meng and Luo estimate that 37.1% of the urban elderly were living by themselves (including with their spouse), which is similar to the estimate of 39.8% derived by Saunders and Sun.

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income.[26] These estimates suggest that the poverty rates presented below underestimate overall poverty among the urban aged, although the extent of this bias cannot be established without further examination of the UHIDS data.[27]

The data used to estimate aged poverty in industrial countries has been taken from the international database developed by the Luxembourg Income Study (LIS). The LIS project was established by a team of international researchers in 1983 to assemble a standardized micro-data set that conforms to a common conceptual and definitional framework.[28] It was designed to address the limitations of previous comparative studies of income distribution[29] that had relied on published results and were thus constrained by presentational and definitional differences that vary between countries and exert an unknown impact on the results. With LIS, the goal has been to develop comparative data at the household level, leaving it to individual researchers to decide how to analyse the data, but allowing for the assessment of the sensitivity of results to alternative methods and definitions.

The LIS database is now acknowledged to set the "gold standard" for studying economic well-being, poverty and inequality.[30] It is inevitable that there are limits to how far it is possible to achieve complete comparability cross-nationally, and as the Director of the LIS project, American economist Tim Smeeding has recently explained:[31]

> While the aim of the LIS project is to increase the degree of cross-national comparability, complete cross-national comparability is not possible, even if we were to administer our own surveys in each nation. Comparability is a matter of degree, and all that one can hope for is to reach an acceptably high level.

The LIS database now contains data for 29 countries in five waves set approximately five years apart covering the period 1980–2000. The data can be accessed free of charge by researchers in participating countries from LIS

26 See Meng and Luo, "What determines the living arrangements of the elderly," Table 3. A separate analysis of data from the *China Urban Labour Market Survey* shows that transfers to parents are three times higher for those who have an older person living in the household than for those who do not. See F. Cai, J. Giles and X. Meng, "Demographic change, traditional family values and pension reform in China," mimeo, School of Asian and Pacific Studies, Australian National University, Canberra, 2003. This reinforces the finding that older people who live by themselves have higher incomes than those who live with others, making this group a better basis for the comparisons presented later.

27 The data for the other countries included in the comparisons have also been restricted to those who live alone or with their spouse, although this has a far smaller impact than in China because most aged people in industrial countries live by themselves. However, since the freedom to be able to live alone in old age is a direct result of the higher standards of living associated with economic development, it would be incongruent to incorporate one consequence of such development (the higher income it generates) without also including the other (the increased freedom to choose to live alone).

28 T.M. Smeeding, M. O'Higgins and L. Rainwater, *Poverty, Inequality and Income Distribution in Comparative Perspective. The Luxembourg Income Study* (London: Harvester Wheatsheaf, 1990).

29 See, for example M. Sawyer, *Income Distribution in OECD Countries*, OECD Occasional Studies, OECD, Paris, 1976.

30 A.B. Atkinson, "The Luxembourg Income Study (LIS): past, present and future," *Socio-Economic Review*, Vol. 2, No. 4 (2004), pp. 165–90.

31 T.M. Smeeding and A. Grodner, "Changing income inequality in OECD countries: updated results from the Luxembourg Income Study (LIS)," in R. Hauser and I. Becker (eds.), *The Personal Distribution of Income in an International Perspective* (Berlin: Springer-Verlag, 2000), p. 211.

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headquarters in Luxembourg, where it is stored under a strict confidentiality protocol.[32]

Researchers around the world have used the LIS data to examine many aspects of economic well-being and inequality, and over 400 working papers have been released, covering comparisons of the extent and structure of poverty, income distribution and redistribution, wage and gender inequalities, and the relative well-being of older people and children – all with a focus on examining cross-country differences. The data have also formed the basis of a landmark study of income distribution in OECD countries and have been incorporated into the Human Development Index developed and published by the United Nations Development Programme.[33]

Currently, virtually all members of the LIS project are based in Europe (including several former eastern-block countries), although it also includes data for Australia, Canada, the United States, Israel, Mexico and Taiwan. Other studies have involved national experts in countries that have not formally joined LIS to generate LIS-consistent comparisons in particular areas. This approach has been used to include Japan,[34] Australia and New Zealand.[35] This approach has proved successful if applied carefully and forms the basis of the results presented below.

Methods

Most comparative poverty studies use a poverty line set at a fixed percentage of median (or mean) income in each country. This benchmark represents the same relative standard within each country (and thus takes account of national differences in living standards), but avoids the complexities associated with currency conversions. The poverty line used is thus set relatively *within* countries and produces results that can be compared relatively *between* countries.[36] It is

32 Further information about how to gain access to the LIS data is provided on the LIS website at: www.lisproject.org from where the LIS Working Papers can be downloaded.

33 A.B. Atkinson, L. Rainwater and T.M. Smeeding, *Income Distribution in OECD Countries: The Evidence from the Luxembourg Income Study (LIS)*, OECD, Paris, 1995; and United Nations Development Program, *Human Development Report 2003. Millennium Development Goals: A Compact Among Nations to End Human Poverty*, UNDP, New York, 2003.

34 Smeeding and Grodner, "Changing income inequality in OECD countries"; and P. Saunders, H. Stott and G. Hobbes, "Income inequality in Australia and New Zealand: international comparisons and recent trends," *Review of Income and Wealth*, Vol. 37 (1993), pp. 63–79.

35 T.M. Smeeding and P. Saunders, "How do the elderly in Taiwan fare cross-nationally? Evidence from the Luxembourg Income Study (LIS) project," in S-C. Hu *et al.* (eds.) *Emerging Social Economic Welfare Programs for Aging in Taiwan in a World Context* (Academia Sinica, 1999), pp. 205–37 provide a series of comparisons of the circumstances of older people in Taiwan (which had not joined the LIS project at that stage).

36 Gustafsson and Li, "The structure of Chinese poverty" used a poverty line tied to median income to estimate relative poverty in China, although their results demonstrate that because of the highly skewed nature of the national income distribution in China, poverty ends up being almost totally dominated by those living in rural areas. For example, they estimate that only 0.36% of the urban population had incomes below a poverty line set at one-half of median national household income, whereas the rural poverty rate measured on the same basis was 17.57%. This provides another reason for restricting the analysis to urban China.

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common in developing countries to apply a simple per capita adjustment to allow for the varying needs of different households when estimating poverty. In contrast, comparative studies of poverty in industrial countries generally use an equivalence scale that allows for economies of scale in meeting the needs of the household.[37] However, if an equivalence adjustment is made to income in order to identify who is poor, consistency requires that the same adjustment is made when defining median (or mean) income, to which the poverty line is tied.

This presents a problem in China, since the median must apply to the whole population, not just to the group that is being studied, in order to ensure that the benchmark used to define poverty has national relevance. However, because the SSAPURC survey covers only those aged 60 and over, it cannot be used to estimate median income for urban China as a whole. The estimate used for this purpose has instead been derived from previous estimates of an equivalence scale for urban China that is based on work by the State Statistical Bureau.[38] It takes the parametric form $EY = HY/(N)^{\alpha}$ where EY = equivalent household income, HY = actual household income, N = household size and α = the equivalence adjustment factor.[39] The equivalence factor for urban households used by Gustafsson and Li is 0.89 and that value has been used here (for China as well as for all other countries).[40] Using this equivalence scale, Li Shi from the Institute of Economics at CASS has provided the author with estimates of median and mean equivalent annual income in urban China in 2002, and these have been used to set the urban China poverty line on which the following estimates are based.[41]

The estimates of median and mean income both refer to the equivalent income of individuals, with the median based on a ranking of the person-weighted equivalent income of households, the approach which is used in most studies of poverty or inequality. The data and methods described above have been used to estimate poverty in urban households containing either one person aged 60 and over or a couple, at least one of whom is aged 60 or over. Estimates are also presented for households aged 65 and over, since pension eligibility commences

37 A.B. Atkinson, "How should we measure poverty? Some conceptual issues," in A. B. Atkinson, *Poverty and Social Security* (London: Harvester Wheatsheaf, 1989), pp. 7–24.

38 Gustafsson and Li, "The structure of Chinese poverty," Table III.

39 The equivalence factor α is assumed to be between zero and one, where the closer it is to one the lower the economies of scale within the household. The common practice of using per capita income in studies of poverty in developing countries implies that $\alpha = 1$. In contrast, Buhmann *et al.* suggest that estimates of the parameter α in industrial countries suggest that the value there is around 0.55. B. Buhmann, L. Rainwater, G. Schmaus and T.M. Smeeding, "Equivalence scales, well-being, inequality and poverty: sensitivity estimates across ten countries using the Luxembourg lncome Study (LIS) database," *Review of Income and Wealth*, Vol. 34 (1988), pp. 115–42.

40 The equivalence scale estimated by Gustafsson and Li, "The structure of Chinese poverty" refers to consumption net of housing and a separate scale is available to adjust housing expenses. However, many older people have low housing costs and the use of the restricted scale is unlikely to produce any major inaccuracies.

41 The estimates for 2002 were back-dated to 2000 by deflating by the movement in an index of the per capita annual net income of city households derived from the *China Statistical Yearbook*, *2003* and the poverty line has been set at one-half of the deflated figures. The author acknowledges the assistance provided by Li Shi in providing this information.

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at age 65 in most LIS countries and most existing comparisons thus focus on those aged 65 and over. Income is defined to include both public (pensions) and private (intra-family) transfers, as well as any income from earnings and investments including rental income from properties owned. The LIS figures are expressed after deducting income tax, and while no account has been taken of tax in the estimates for China, this is unlikely to induce any major error since most older people do not pay any income tax.[42]

Results

Application of the above methods to the data described earlier produces the results presented in Tables 1 and 2 for those aged 60 and over and 65 and over, respectively. The results on the left-hand side of each table are derived from a poverty line set at one-half of median income, while those on the right-hand side

Table 1: **Aged Poverty Rates among Single People and Couples Aged 60 and Over in 2000 using Half-Median and Half-Mean Income Poverty Lines (%)**

Country	Poverty line					
	One-half of median income:			One-half of mean income:		
	Single people	Couples	All aged	Single people	Couples	All aged
Canada	5.1	3.4	3.9	6.6	5.2	5.4
China (PR)	46.5	24.5	27.7	52.3	27.7	31.3
Estonia	1.1	4.3	3.1	6.1	7.4	6.9
Finland	1.1	0.4	0.7	2.0	1.2	1.5
Germany	5.8	3.4	4.3	8.3	5.5	6.6
Hungary *	2.2	1.1	1.5	3.4	3.7	3.6
Ireland	6.9	9.1	8.2	12.0	14.1	13.3
Israel *	4.5	6.6	6.0	16.4	16.8	16.6
Italy	5.0	5.3	5.1	7.7	9.7	9.1
Luxembourg	0.4	2.3	1.6	0.6	3.9	2.8
Mexico	29.1	24.5	25.8	40.9	40.2	40.4
Netherlands *	0.9	5.7	4.1	0.9	6.6	4.7
Norway	1.3	0.8	1.0	2.2	1.3	1.7
Poland *	0.4	1.3	1.0	0.6	2.1	1.7
Russia	6.5	6.7	6.6	17.4	12.5	14.3
Slovenia *	8.2	9.6	9.2	10.1	11.6	11.1
Taiwan (China)	17.2	20.1	19.4	28.0	29.9	29.4
Sweden	1.5	1.1	1.3	3.3	2.2	2.7
United Kingdom *	10.8	7.6	8.7	22.5	18.8	20.1
United States	16.2	10.7	12.5	28.8	18.8	22.1

Notes:

The estimates for China refer only to older people in urban areas who live alone or with their spouse only (but not with other family members). Estimates marked * are for 1999 (2001 for Israel).

42 An exception is the study by Gustafsson, Li and Sato that focuses on disposable income, defined as equal to household expenses after the deduction of expenditure on health care and education.

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Table 2: **Poverty Rates among Single People and Couples Aged 65 and Over in 2000 using Half-Median and Half-Mean Income Poverty Lines (%)**

Country	Poverty line					
	One-half of median income:			One-half of mean income:		
	Single people	Couples	All aged	Single people	Couples	All aged
Canada	1.0	1.3	1.2	1.4	2.7	2.3
China (PR)	47.2	25.6	29.2	53.5	28.6	32.8
Estonia	0.7	4.7	3.1	6.3	8.0	7.3
Finland	0.6	0.4	0.5	1.6	1.4	1.5
Germany	4.7	3.5	4.0	6.9	5.7	6.2
Hungary *	2.1	0.5	1.1	3.3	3.3	3.3
Ireland	7.2	8.6	8.0	8.8	13.4	11.4
Israel *	4.8	6.9	6.2	17.1	18.5	18.0
Italy	4.2	4.9	4.7	7.0	9.6	8.7
Luxembourg	0.4	2.0	1.4	0.7	3.5	2.5
Mexico	30.3	26.2	27.5	42.0	42.5	42.3
Netherlands *	0.5	4.2	2.8	0.5	5.3	3.5
Norway	1.0	0.9	0.9	1.7	1.4	1.5
Poland *	0.3	1.2	0.9	0.3	2.2	1.6
Russia	6.7	6.2	6.4	16.2	12.8	14.2
Slovenia *	8.0	10.5	9.6	9.8	13.1	12.0
Taiwan (China)	17.2	20.8	19.9	28.2	31.1	30.3
Sweden	1.2	0.9	1.0	3.2	2.2	2.7
United Kingdom *	11.5	7.0	8.8	23.9	19.4	21.2
United States	15.8	11.2	12.8	29.0	20.5	23.5

Notes:

The estimates for China refer only to older people in urban areas who live alone or with their spouse only (but not with other family members). Estimates marked * are for 1999 (2001 for Israel).

use the higher poverty line, set at one-half of mean income. Results are presented for single people living alone, for couples and for both groups combined. The poverty rates express the number of individuals with incomes below the poverty line as a percentage of all aged individuals, that is, they refer to persons, not households.

To those familiar with the LIS dataset, it is striking that the estimated poverty rates among older people for countries other than China are considerably below those shown on the LIS website. This reflects the impact of the equivalence scale used here, which differs markedly from that used in many other LIS poverty comparisons. The most commonly used equivalence scale in LIS comparisons is equal to the square root of household size, so that $EY = HY/(N)^{0.5}$, which implies that $\alpha = 0.5$, well below the value of 0.89 that has been used here. The difference has a large impact on equivalent income (particularly for larger households), and this affects median (and mean) equivalized income and thus where the poverty lines are set, which in turn affects how much aged poverty is found to exist. For example, the United States half-median income

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poverty rate of 12.5 per cent shown in Table 1 almost doubles to 24.9 per cent if the square root equivalence scale is used. This difference reflects the fact that the poverty line increases by more than 55 per cent when the LIS scale is used.[43]

Table 1 indicates that the half-median income poverty rate among the 60+ age group varies from around 1 per cent in several European countries with advanced welfare states (Finland, Norway, Poland and Sweden) to 20 per cent in Taiwan, over 25 per cent in Mexico and is highest overall in China, at almost 28 per cent. There is considerable variation among OECD countries, with poverty among the 60+ age group approaching 9 per cent in the United Kingdom and exceeding 12 per cent in the United States. When measured relatively, aged poverty in urban China does not exceed that in other countries by anywhere near as much the underlying differences in per capita national income.[44]

In half of the countries, poverty is higher among those who live alone than among couples and these countries tend to have higher overall poverty (although there are a number of exceptions). The relative poverty rates among single people and couples is heavily dependent on the equivalence scale, which allows for almost no economies of scale for couples, pulling their equivalent incomes down relative to those of single people.[45] Even so, the very high poverty rate among the single aged in urban China points to the perilous circumstances of this group, many of who are women – a finding confirmed in a recent related study.[46]

Use of the higher (one-half of mean income) poverty line causes the poverty rate to increase by different amounts in each country. These differences reflect how closely aged incomes are bunched between the median and the mean of the income distribution.[47] Using this higher benchmark, national differences in aged poverty narrow, particularly among couples. Although the aged poverty rate for China now approaches one-third, its international ranking improves considerably. It might seem paradoxical that a higher poverty line produces more favourable results for a low-income country like China. However, this is a reflection of the fact that many older people in industrial countries are heavily reliant on pensions that rarely provide an above-average income, causing poverty rates to increase markedly when the half-mean income benchmark is used, in the process causing China's poverty ranking to improve. This occurs despite of (in fact, because of) the low coverage of pensions in China, indicating

43 This example illustrates how sensitive poverty estimates are to the choice of equivalence scale. Further analysis of this issue is provided by Buhmann *et al.*, "Equivalence scales, well-being, inequality and poverty"; and Atkinson, Rainwater and Smeeding, *Income Distribution in OECD Countries.*

44 It should be noted that the estimates in Tables 1 and 2 for all countries other than China cover those living in both urban and rural areas, whereas those for China cover only those living in urban areas.

45 Thus, the equivalence scale used here implies that a couple requires an income equal to 1.85 times that of a single person to achieve the same living standard. In contrast, using the LIS square root scale, this relativity is much lower, at 1.41.

46 Saunders and Sun, "Poverty, hardship and isolation."

47 The 50% of mean income poverty line is close to 60% of median income, the benchmark that is now commonly used to estimate income poverty in Europe. See, for example, A.B. Atkinson, B. Cantillon, E. Marlier and B. Nolan, *Social Indicators. The EU and Social Inclusion* (Oxford: Oxford University Press, 2002).

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that in 2000, many urban older people, particularly couples, had incomes (inclusive of transfers received from other family members) that protect them from relative poverty, defined using an international poverty line benchmarked against mean income.

Using the higher poverty line, the aged poverty rate in urban China is below the national figure for Mexico and only slightly above that in Taiwan. More profound is the finding that using this benchmark, aged poverty in urban China is not too far above that found to exist in two of the richest countries examined – the United Kingdom and the United States. While this does not provide grounds for complacency – the poverty risks facing single older people in China are still unacceptably high – it does suggest that China's formal and informal systems of social support have been moderately successful in reducing the worst extremes of income deprivation amongst its older population.

Table 2 presents poverty rates for those aged 65 and over, derived using identical methods to those used to produce Table 1. Because eligibility for a pension in industrial countries often begins at age 65, the impact of pension systems on aged poverty now becomes more apparent.[48] Thus, aged poverty rates in many OECD countries are now lower than in Table 1, particularly when measured using the half-median income poverty line. The overall poverty rate in OECD countries is less than 5 per cent in all countries except Ireland, the United Kingdom and the United States. In contrast, there is relatively little change in poverty rates in China, Mexico and Taiwan, all of which have relatively under-developed pension schemes.

China's international poverty ranking worsens when the higher poverty line is used, a reflection of two opposing trends. First, poverty is lower in almost all industrial countries in the 65+ group compared to the 60+ group, although the decline is generally quite small. In contrast, in those countries (like China) where poverty was high for the 60+ group, it increases slightly among the 65+ group. These divergent patterns again reflect the fact that, where they exist, pension systems offer greater coverage among the 65+ group. In contrast, where pension systems are under-developed, poverty tends to increase with age as private savings are depleted and other income sources also decline.

Among couples, Table 2 shows that using the higher poverty line, poverty in urban China is only 8 percentage points above that in the United States and 9 percentage points above that in the United Kingdom, despite both countries having far more developed pension systems and a raft of other public programmes for older people. These results thus demonstrate that (measured relative to mean income), China's performance in reducing relative poverty among its urban aged population compares favourably with countries that are much richer and have had far longer to develop and implement policies (driven

48 The results in Table 1 include many people aged 60 to 65 who do not qualify for the pension but who may be unemployed, disabled or otherwise unable to get work and thus fall into poverty.

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in part by the increasing political influence of the "grey vote").[49] Having said this, there is much to be done in China to protect people from poverty in old age, particularly given that absolute living standards are low and where increasing income inequality[50] is making the task of reducing poverty more difficult.

Conclusions

This article has examined the incidence of poverty among older people living in urban China using a framework that is relative in two important respects. First, the poverty line has been set relative to measures of median or average income in each country. Secondly, interest has focused on how China compares with other, predominantly rich industrial countries when it comes to the extent and structure of poverty among older people. The article is one of few to estimate poverty in China using a relative international poverty line and the first to draw comparisons with other (mainly OECD) countries using similar methods and comparable data. Drawing on data from the pioneering Luxembourg Income Study and applying standardized methods used to measure and compare poverty cross-nationally, the results provide an initial assessment of how well China has performed in reducing poverty among older people when benchmarked against international experience.

The results are restricted to those older people who live in urban areas and do not live with family members other than their spouse (where relevant). Although this restricts the scope of the analysis (since many older people in China live with other family members, even in urban areas), it can be justified on the grounds that the group included has most in common with older people in the other countries with which the comparisons are made. The need to make compromises with the national data is often a feature of comparative research, where the goal is to ensure that maximum comparability across countries is achieved. In any case, the size of the group that is covered by the analysis in China is still huge, and is likely to become increasingly significant as economic development provides future cohorts of older people with the option to live by themselves if they want to. But it is important to keep the restricted coverage of the estimates for China in mind when interpreting the results, since they refer to only a minority of older people.

Despite these limitations, the results show that while aged poverty in China is considerably higher than in many European countries, it is quite close (on some measures) to that existing in the United Kingdom and the United States, two of the world's richest countries. It is estimated to be only slightly higher than that existing in Mexico and Taiwan. China performs worse among those who live

49 See Bonoli, *The Politics of Pension Reform*.

50 See S. Li, "New findings in income inequality in China at the beginning of the new millennium," presented to the USC 40th Anniversary Conference, Hong Kong, 2004; and H. Wenxiu, "The evolution of income distribution disparities in China since the reform and opening-up," in *Income Disparities in China. An OECD Perspective*, OECD, Paris, 2004, pp. 9–25.

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alone, who are very vulnerable to poverty. Since many of this group are women (who outlive men), this implies that there are marked gender differences in the overall profile of aged poverty in China. Using a higher poverty line set at one-half of mean (equivalized) income, China's poverty ranking improves, as many of those who receive modest state pensions in other countries now fall below the higher poverty line.

While the results provide no grounds for complacency, they do suggest that the task of eradicating poverty among older people living in urban China is within reach, particularly if the goal is to bring it into line with the poverty rates facing older people in rich countries. Overall, however, while much has already been achieved in reducing poverty in old-age in urban China, much still remains to be done.

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