

## **Relying on Whom? Poverty and Consumption Financing of China's Elderly**

Albert Park, HKUST

Yan Shen, Peking University

John Strauss, University of Southern California

Yaohui Zhao, Peking University

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### ***Abstract***

Rapid aging, strict family planning programs, large-scale internal migration, and immature public pension programs at an early stage of development pose great challenges to providing adequate support for all of China's elderly. In this paper, we analyze detailed survey data from the China Health and Retirement Longitudinal Study (CHARLS) Pilot Survey conducted in Gansu and Zhejiang Provinces in 2008 to better understand the extent to which the elderly rely on different sources of finance for their consumption, including their own income (including pensions), income of other family members, public transfers, private transfers, and savings. We focus particular attention on the implications of consumption financing for elderly consumption poverty. We find that private and public support mechanisms appear to be relatively successful in supporting the consumption of the elderly, but that those without pensions and living alone remain at greater risk of being poor.

## **Relying on Whom? Poverty and Consumption Financing of China's Elderly**

### **INTRODUCTION**

Because of increases in longevity and strict family planning policies for three decades, China is facing rapid population aging at a relatively early stage of development. It is projected that the proportion of those aged 60 and over will increase from 10 percent of the population in 2000 to about 30 percent in 2050 (United Nations, 2002). China's elderly support ratio, defined as the number of prime-aged adults 25-64 divided by the number older than 64, is projected to fall from nearly 13 in 2000 to just 2.1 by 2050. China is not alone in facing this challenge. According to UN projections, there are 42 countries with income per capita less than \$10,000 in 2005 for which the share of those aged 65 and older will be greater than 15 percent by 2050

(Lee, Mason, and Cotlear, 2010).

China faces significant challenges in its effort to provide adequate financial support to its elderly population in the years to come. Due to strict family planning policies, tomorrow's elderly will have many fewer children than today's elderly, and large-scale migration as well as modernizing values also could undermine traditional family support systems. Public pension programs remain immature and most elderly lack pension coverage, especially in rural areas.<sup>1</sup> Privatization and increasing informalization of the labor market have made it difficult for local governments to effectively extend social insurance coverage (including pensions) to the entire population.

With these future challenges in mind, this chapter analyzes how China's current elderly finance their consumption expenditures. We focus on household expenditure per capita as the preferred measure of living standards, since it best captures consumption which directly enters individuals' utility functions, and because annual consumption reflects permanent income better than annual income, which is subject to greater year-to-year fluctuations, especially for rural households.

We utilize a unique dataset with highly detailed information on income, consumption, and public and private transfers of China's elderly--the China Health and Retirement Longitudinal Study (CHARLS) pilot survey conducted in Gansu and

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<sup>1</sup> A new rural pension program initiated after the CHARLS pilot in 2008 had reached 23% of rural counties by year-end 2010 and will eventually be scaled up nationally.

Zhejiang Provinces in 2008. We calculate elderly consumption poverty rates and analyze the extent to which the elderly rely upon their own income (including from pensions), income from other household members, public transfers, private transfers, and savings to finance their consumption. Using regression analysis, we further examine how poverty status and the use of different financing sources are related to different characteristics of the elderly, such as the number of children, living arrangements, and availability of pensions.

Throughout the analysis we make a point of distinguishing between urban versus rural residents because of the significant differences in economic and social institutions affecting the two populations. We define urban versus rural status based on whether an individual's official family residential registration (*hukou*) is nonagricultural (urban) or agricultural (rural). There is a long history in China of preferential policies toward nonagricultural residents. Urban residents for many years enjoyed an "iron rice bowl" of guaranteed employment, housing, health insurance, pension support, and other subsidies that were unavailable to rural residents even if they migrated to cities (Solinger, 1999; Chan and Zhang, 1999). Even after three decades of reform, urban residents continue to enjoy more generous subsidies to support minimum standards of living, and better health insurance and access to housing. Under housing reforms in the late 1990s, state-supplied housing was sold to nonagricultural residents at highly subsidized prices. Family planning policies were stricter for urban residents. As a result of all of these differences, the sources of consumption financing are likely to be very

different for urban versus rural residents. One limitation we face in our analysis is that only 18.5 percent of our sample have nonagricultural residential registration.<sup>2</sup> Nonetheless, we report all of the main results separately for urban and rural residents.

In this study, relationships that we quantify statistically are best interpreted as partial correlations rather than causal relationships. This is because individuals and households alter their labor supply, living arrangements and private transfer decisions in complex ways in response to individual circumstances, including access to pensions as well as public and private transfers. These decisions, as well as education and fertility choices, also reflect unobserved individual attributes that are likely be correlated with the determinants of poverty status and use of different financing sources.

The chapter is divided into five sections. The next section describes the CHARLS data and the measurements used in the analysis. Section 3 estimates income and consumption poverty rates and inequality, describes how different financing sources help to reduce consumption poverty, and analyzes which characteristics of the elderly are most closely associated with poverty status. Section 4 describes financing sources

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<sup>2</sup> This is much lower than the urban share of the populations in the two provinces according to China's Statistical Yearbook. This is partly because of a lower response rate among urban residents, which is corrected by using appropriate sampling weights when reporting means for the full sample. A more important reason is that the definition of urban in the statistical yearbooks is based on a population density criteria and so includes a large number of people with agricultural residential registration living in administrative villages in suburban or peri-urban areas, especially in Zhejiang.

in greater detail, analyzes the determinants of reliance on different financing sources, and assesses the extent to which saving behavior contributes to poverty. The final section concludes with a discussion of implications for how China can successfully provide adequate support to the elderly in the future.

### **CHARLS DATA AND MEASUREMENTS**

CHARLS is modeled after the Health and Retirement Survey (HRS) in the US and other similar aging studies worldwide. A distinguishing feature of HRS-type surveys is that they are longitudinal and collect detailed data on both socio-economic status and physical and mental health. This study uses data from the CHARLS pilot survey conducted in 2008 in two provinces: Zhejiang, China's richest province in 2008 in terms of income per capita (both urban and rural) located on the coast, and Gansu, China's poorest province in terms of income per capita located in China's Northwest. The two provinces capture much of China's great diversity although clearly are not fully representative of China as a whole. The simple average of urban income per capita in the two provinces in 2008 is seven percent greater than the national average, and the share of urban household income from wages, self-employment, property income, and transfers in the two provinces is almost identical to the national average. Mean rural income per capita for the two provinces is 26 percent greater than the national average in 2008, due mainly to high rural incomes in Zhejiang, and the share of rural income in the two provinces that comes from self-employment (wages) is six percent greater

(lower) than the national average; shares of property and transfer income are nearly the same as the national average.

The pilot survey sampled individuals aged 45 and older plus their spouses, and included interviews of 2,685 individuals in 1,562 households<sup>3</sup>. The response rate was 85 percent. Sampling was conducted in three stages. First, 16 county-level units were selected in each province, based on probability proportionate to size (PPS) sampling after county units were first stratified by whether they were urban districts or rural counties and by sub-regions of each province. Three communities (administrative villages or urban neighborhoods) were then randomly sampled within each county unit again using PPS sampling. Sampling frames for county and village sampling were based on population data provided by China's National Bureau of Statistics. Finally, households within each community were randomly sampled based on a full map-based enumeration of all dwellings in each neighborhood. One main respondent was randomly selected in each household with eligible members (those aged 45 and older) and the spouse of each main respondent was also interviewed.<sup>4</sup> The resulting sample of main respondents thus is representative of the populations of Gansu and Zhejiang Provinces. The sample's demographic structure is similar to that found in the 2005

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<sup>3</sup> The sample size is 1531 households in this study, after dropping 31 households with missing data.

<sup>4</sup> See Zhao, Strauss, Park, and Shen (2009) for full details of the sampling procedure and construction of sampling weights. Tibetan counties in Gansu were excluded; they accounted for 3.8 percent of the provincial population in 2007.

population mini-census in the two provinces.<sup>5</sup>

In this study, we focus attention on the subsample of main respondents aged 60 and above, which we refer to as the elderly sample. Occasionally, we also examine the younger sample of those aged 45 to 59. For all descriptive tables, in order to maximize representativeness, we restrict attention to the sample of main respondents, excluding spouses. Regressions are unweighted and also include spouses above age 60 to increase power.

Understanding how the elderly support their consumption requires detailed information on income, including that of the elderly themselves and that of other household members, as well as on transfers and consumption. Such complete data is typically not collected in household surveys, but CHARLS made great efforts to collect all of the necessary information in order to better understand the financial situation of the elderly. Income was measured at both the individual and household levels. Main respondents and their spouses were asked about all sources of income and public transfers that went to them individually, and a financial respondent—the person most familiar with the household’s finances—answered questions about the individual

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<sup>5</sup> The population structure by age group of those aged 45 and older in China’s 2005 population census (2008 CHARLS pilot survey) in Gansu and Zhejiang is as follows: 17.5 (17.9) percent aged 45-49, 22.7 (18.5) percent aged 50-54, 17.8 (14.3) percent aged 55-59, 13.0 (16.4) percent aged 60-64, 11.0 (14.7) percent aged 65-69, 8.8 (8.6) percent aged 70-74, 5.2 (5.2) percent aged 75-79, 4.0 (4.5) percent aged 80+ (all numbers based on authors’ calculations). Thus, relative to the 2005 mini-census CHARLS slightly undersamples those aged 50-59 and oversamples those aged 60-69; however, these differences are relatively small and could be due to the surveys being conducted three years apart.



income of other household members, income from household activities such as agriculture, household expenditures, and household-level transfers, including private transfers from non-household members.

These data were then aggregated to calculate several different income per capita measures which exclude different types of transfers. Respondents and their spouses (RS) own income per capita includes wage income, self-employment income, agricultural income, pension income, and net asset income received by the respondent and spouse. Their share of income from activities undertaken with other family members, such as family farming, is calculated based on an equal division of income among all household members who were reported to have engaged in the activity.<sup>6</sup> Household pre-transfer income per capita is calculated by adding up the income of all household members (for respondents and spouses living alone, this is the same as RS own income) and dividing by the total number of household members.<sup>7</sup> Household income per capita can be greater or less than RS own income per capita, depending on whether the respondent and spouse are net givers or receivers of resources when they

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<sup>6</sup> Unfortunately, no information is available on the time spent on different activities by other household members.

<sup>7</sup> Although we can clearly distinguish each source of individual income for main respondents and their spouses, who were asked about each separately, for other household members, we can only distinguish two types of individual income: earnings from work and all unearned income (including pensions, public transfers, asset income, and other sources of income). Given our strong prior that public transfers are likely to account for the bulk of such income (because other members tend to be too young to have pension income and asset income is relatively rare), we have chosen to categorize all unearned individual income of other household members as public transfer income when calculating household income from different sources.

pool their income with other household members. Our third income measure is post-transfer income per capita, which is calculated by adding private and public transfers to pre-transfer income. To discern whether private or public transfers are playing a more important role, we also calculate post-transfer income separately for private transfers and public transfers.

Household consumption expenditure items are measured by recall questions covering the past week, month, or year depending on the expected frequency of different types of expenditures. The survey asks about food expenditure during the past week, including expenditures on dining out, food bought from the market and the value of home-produced food.<sup>8</sup> Monthly expenditures include fees for utilities, communications, nannies, etc. Yearly expenditures occur occasionally throughout the year, for example, travel, purchases of durable goods, or education and training fees. Household expenditure per capita is calculated by aggregating consumption expenditure at the household level over a full year and dividing by the total number of household members.<sup>9</sup>

We categorize the difference between post-transfer income per capita and expenditure per capita as savings (or dissaving if the values are negative). Thus, our

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<sup>8</sup> Food expenditures spent on guest meals are subtracted from expenditures to better reflect household food expenditure per capita in a normal week.

<sup>9</sup> For food expenditures, the number of household members is the number of persons who ate regularly in the household in the past week. For other expenditures, household members are those who lived in the household for at least 6 months in the past year.

measure of savings is likely to also include measurement error in income, transfers, or expenditures.

Before examining in detail differences in income and expenditure per capita, it is informative to describe the components of income, transfers, and expenditures.<sup>10</sup> The importance of pensions is very different in urban and rural areas. In urban China, pension income accounts for 53 percent of the income of respondents and spouses and 57 percent of total household (pre-transfer) income per capita. About two thirds of urban residents receive pensions or have a spouse who receives pensions. In contrast, in rural areas, only 17 percent of the income of respondents and spouses and 13 percent of total household (pre-transfer) income per capita are from pensions; only 12 percent of the rural elderly receive pensions or have spouses who receive pensions.

Wage income is the second most important source of income for respondents and spouses (24 and 38 percent for urban and rural residents) and the most important source of income for households (30 and 50 percent for urban and rural residents). Third most important is self-employed income, which accounts for 13 (27) percent of the income of respondents and spouses who are urban (rural) residents, and 7 (29) percent of household pre-transfer income per capita. Of note is the relative unimportance of agricultural income to the elderly, accounting for just seven percent of rural household income per capita, as well as asset income. Only 47 percent of the rural elderly live in

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<sup>10</sup> Mean shares described in this paragraph are calculated as the mean of each category divided by the mean of the total, not the mean of household-specific shares.

households with any agricultural income.

The composition of consumption expenditures of elderly households can be divided into 16 categories. The largest spending category is food (49 and 53 percent in urban and rural households) followed by medical expenditures (16 and 19 percent). All other categories account for six percent or less. Public transfers include 19 categories, which include both transfers to individuals as well as to households.<sup>11</sup> The largest category is other individual public transfers (42 and 28 percent for urban and rural households) which includes all individual public transfers received by household members other than the respondent and spouse. This is due to the fact that although we have a detailed breakdown by type for the main respondent and spouse, for other household members all categories are aggregated together in one question and so categorized as “other” (see also footnote 3). We do not provide a breakdown of private transfers, but note that these transfers are asked only at the household level and include both cash and in kind transfers, most of which come from children of the main respondent and spouse. To prompt respondents, separate questions are asked about private transfers received at different major holidays (e.g., spring festival) and about transfers that are received regularly (e.g., every month) or irregularly.

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<sup>11</sup> Public transfers include medical expenditure subsidies, workers’ compensation, rural and urban minimum living standards subsidies, subsidies for those unable to work (wubaohu), compensation for land seizure, agricultural subsidies, family planning subsidies, elderly pension subsidies, reforestation subsidy, unemployment benefits, rural poverty subsidies, disaster relief subsidies, and social donations.

Table 1 presents the mean and median of household per capita income and expenditure measures for the two subsamples of those less than age 60 and those aged 60 and above. For the elderly, we also report urban and rural outcomes separately. At the time of the survey in July 2008, the RMB/US\$ exchange rate was 6.82. The means show large differences between average income levels and average consumption levels, likely because of the influence of richer households in the sample. We get a somewhat different picture looking at medians. Comparing age groups, it appears that the role of transfers is quite different for the two groups. For those older than 60, the mean post-transfer income per capita is 44 percent greater than respondent and spouse income per capita. Medians portray an even more drastic picture, with median post-transfer income per capita (3,712 yuan) being almost five times the median respondent and spouse income per capita. Median expenditure per capita is 4,418 yuan, which, in contrast to the mean, is higher than that of median post-transfer income per capita, suggesting that most elderly are net dissavers. Overall, it is evident that China's elderly rely heavily on sources other than their own income to finance their consumption. Those below age 60 earn much higher incomes (respondent and spouse mean income per capita of 17649 yuan), and are net givers of resources to other household members since household income per capita is lower than respondent and spouse income per capita.

Table 1 reveals interesting differences between urban and rural elderly. First across all income and consumption measures urban standards of living are much

higher than rural standards of living. The most extreme gap is in the differences in respondent and spouse own income per capita, for which the urban/rural ratio based on means (medians) is 4.91 (30.0). But as one moves to pre-transfer income, post-transfer income, and finally expenditures, the urban/rural ratio declines steadily from 2.99 (11.40) to 2.58 (3.82) to 1.85 (2.04) using means (medians). Interestingly, for urban residents, median values decline monotonically in this progression while rural residents' median values increase monotonically, suggesting that the rural elderly are made increasingly better off by living with others, receiving transfers, and dissaving while urban residents are made increasingly worse off because they subsidize the consumption of people they live with, give money to relatives, and save funds rather than spend them. The picture is less clear when looking at means, which reveal that urban residents on net receive transfers and that rural residents also save.

Table 2 provides descriptive statistics for CHARLS main respondents, again broken down by age group (those 45 to 60 and those 60 and above) and for the older group by urban versus rural. Compared with the younger group, the elderly have more children, with two thirds of the elderly having 3 or more children, compared to just one quarter of those aged 45-60. However in terms of living arrangements, the elderly are more likely to live with children (49 percent, compared to 30 percent for those aged 45-60) and more likely to live alone (24 percent versus 8 percent for the younger group). They are less educated (53 percent illiterate), poorer in health, and rely much more on public and private transfers. These facts suggest that China's elderly are

vulnerable in their socio-economic status, and more dependent on others, making it important to assess the extent to which they are able to finance adequate standards of living. Elderly living in urban areas differs from those in rural areas mostly in access to pensions (67 percent for urban, just 12 percent for rural), propensity to live with children (34 percent for urban, 53 percent for rural), health status (urban are healthier), and education (share with educational attainment of junior high or above is 38 percent for urban and 5 percent for rural).

### **ELDERLY POVERTY**

The most direct way to study the adequacy of consumption financing is to calculate poverty rates for the elderly. In this section, we use our detailed measurements of income and consumption expenditure to calculate the extent of poverty among the elderly, and the contributions made by different sources of finance in altering the extent of poverty among China's elderly. These measurements are of obvious policy concern because older individuals may have lower productivity due to poorer health, lower education, and outdated skills, and have fewer work opportunities, making them more reliant on public assistance to maintain living standards.

The starting point for poverty calculations is to identify a poverty line. In this study, we use the most recent World Bank international poverty line of \$1.25/day converted to Chinese RMB using the Purchasing Power Parity (PPP) exchange rate

estimated for China in 2005. This gives us a poverty line in 2005 domestic currency, which we then adjust to 2008 using national urban and rural consumer price indices as well as a urban/rural price deflator.<sup>12</sup> In 2008 RMB, the World Bank international poverty line translates to 2089 yuan per capita for urban areas and 1552 yuan per capita for rural areas. We use these poverty lines to calculate the poverty headcount ratio, poverty gap, and poverty gap squared for the elderly, which are presented in Table 3. These poverty indices are calculated using the familiar formula of Foster, Green, and Thorbecke (1984):

$$FGT_{\alpha}(y, z) = \sum \frac{w_i}{N} I(y_i - z_i) [1 - (y_i / z_i)]^{\alpha}, \alpha = 0, 1, 2,$$

where  $y_i$  is income or expenditure per capita,  $z$  is the poverty line,  $w$  is a sampling weight with mean of one, and  $\alpha$  is a ‘poverty aversion’ parameter (larger  $\alpha$  gives greater weight to larger poverty gaps, i.e. poorer people).

The first column of Table 3 presents the poverty headcount ratio ( $\alpha=0$ ) using different income per capita measures as well as expenditure per capita. The results show clearly the important role played by transfers in keeping the elderly out of poverty. If we only consider the income of respondents and spouses, 60 percent of the elderly are poor; when income from other household members is also factored in, the

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<sup>12</sup> The 2005 PPE exchange rate for household consumption is 4.09 yuan/\$, and reflects urban costs of living (Chen and Ravallion, 2008). Following Chen and Ravallion (2008), we assume that urban costs of living are 37 percent higher than rural cost of living in 2005, based on analysis of the cost of actual consumption bundles of the poor in urban and rural China that they estimated in collaboration with China’s National Bureau of Statistics. We then use China’s rural and urban CPIs to calculate poverty lines for 2008.



poverty rate falls by 9 percent, reflecting the implicit financial support of the elderly that occurs through co-residence. When we then add private transfers but not public transfers to household income, the poverty rate falls from 51 to 41 percent; when we add public transfers but not private transfers, the poverty rate falls to 44 percent, and when we add both public and private transfers, the poverty rate falls to 34 percent. Thus, co-residence and transfers reduce the headcount poverty ratio by 26 percentage points. The poverty headcount ratio for expenditure per capita is much lower still—16 percent, suggesting that dissaving (or unmeasured income or transfers) accounts for a significant share of consumption for the income poor. This consumption poverty rate is not far from the 12.9 percent poverty headcount ratio estimated for the elderly in all of China in 2003 using NBS national household survey data and a lower poverty line (World Bank, 2009).<sup>13</sup> That World Bank report found that the poverty rate of the elderly was only slightly higher than that of the working population (12.1 percent) but much lower than the poverty headcount rate of the young aged less than 16 years (16.8 percent).

Again, there are important differences between urban and rural residents. Expenditure-based poverty rates are much lower for urban residents (8 percent) than

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<sup>13</sup> The 2003 estimate uses the previous World Bank poverty line of \$1.08 per day using a PPP exchange rate from 1993 of only 1.419. The World Bank report (2009) assumed that this exchange rate reflected rural costs of living at the time and that the urban cost of living was 27.2 percent higher than the rural cost of living in 2002 using the Brandt-Holz price deflator.

rural residents (17 percent). Transfers play a key role in reducing poverty in both urban and rural areas, by 17 percentage points in both cases when we compare poverty rates based on pre-transfer and post-transfer income. In both cases, private transfers are more important than public transfers. However, in rural areas, coresidence and dissaving also play key roles, accounting for decreases in poverty rates of 11 and 23 percentage points, respectively, while for urban residents these sources of finance are relatively unimportant.

To examine not just the frequency but also the depth of poverty, we calculate the normalized poverty gap ( $\alpha=1$ ) and normalized squared poverty gap ( $\alpha=2$ ) for different income and expenditure per capita measures. As  $\alpha$  increases, the FGT measure puts increasing emphasis on the degree of poverty. The results presented in Table 3 reveal that for rural residents, co-residence and transfers play an even more important role in reducing the degree of poverty than they do in reducing poverty headcount rates, while dissaving matters less. This is not surprising given that more severely deprived individuals are less likely to have savings to draw upon in bad times. Overall, external support via coresidence and transfers reduce a greater share of rural poverty the greater the weight given to the severity of poverty. When using post-transfer income per capita instead of the income per capita of respondents and spouses, the rural normalized poverty gap falls from 0.57 to 0.24, or by nearly 50 percent while the rural poverty gap squared falls from 0.52 to 0.18, or by 65 percent. These declines are both greater than the 41 percent fall in the poverty headcount ratio.

Interestingly, the same does not appear to be true for urban residents, for whom coresidence matters slightly more when poverty severity is given greater weight and transfers matter slightly less. This suggests that support mechanisms for urban residents is less well targeted to the poorest of the poor than for rural residents.

To illustrate more clearly the importance of distinguishing between income poverty and consumption poverty, we note the relatively low correlation between income poverty and consumption poverty in the data. Using the sample of 743 main respondents age 60 and older, we find that among the 52 percent of the elderly who are poor as measured by pre-transfer income per capita, 75 percent are not poor when poverty is measured using expenditure per capita. Of the 48 percent of the elderly who are NOT poor using pre-transfer income, 8 percent are poor using expenditure per capita.

Economic well-being can vary considerably with differences in location, living arrangements, health status, etc. A poverty profile of the elderly presented in Table 4 shows sharp differences in poverty for different population subgroups. For example, headcount poverty ratios based on pre-transfer income are very high for those living alone (73.8 percent for women and 61.7 percent for men), those living in rural Gansu (74.6 percent), those in poor health (65.4 percent), those without pensions (62.6 percent, compared to just 7.6 percent of those with pensions), and the illiterate (60.6 percent). However, measured by expenditures per capita (after accounting for transfers and dissaving), for all of these population groups the poverty rates are less

than 25 percent (with the exception of poverty rates of 29.7 percent in rural Gansu). Like income poverty, consumption poverty is associated with living in rural Gansu, poor health, living alone, less education, and lacking pensions. For both income and consumption, poverty is slightly higher for women than men (51.2 and 16.7 percent, compared to 49.0 and 14.4 percent).

Next, we analyze the determinants of poverty separately for urban and rural households using different income and consumption measures in a multivariate setting by estimating probit models of poverty status and calculating the marginal probabilities of different individual characteristics. Results are reported in Table 5. We find that for both urban and rural households, pensions have a large and significant effect on poverty status measured by respondent and spouse own income, but that the magnitude of this effect weakens as we move to pre-transfer income, post-transfer income, and finally expenditures. For urban households, the pension variable is not statistically significant for post-transfer income or expenditure, suggesting that transfers play a key role in alleviating poverty among the urban poor who lack pensions. For rural households, having pensions reduces consumption poverty by 13.5 percentage points (still much less than the 69.5 percent reduction in poverty based on respondent and spouse own income).

Not living with children increases poverty rates substantially for rural households when measured by pre-transfer income, but all of the living arrangement variables are much smaller in magnitude and statistically insignificant in the

corresponding urban regression. For rural households, compared to those living with children, income poverty based on pre-transfer income is 31 percent higher for those living alone, 19 percent higher for those living with their spouse only, and 26 percent higher for those living with others. These differences are much less pronounced for those living alone or with spouse using post-transfer incomes, but grow larger for those living with others. However, using expenditure per capita, only living alone affects the poverty rate significantly, increasing the probability of being poor by 15 percent.

Another factor which only affects the poverty of rural respondents is poor health, which increases poverty probability by about 9 to 12 percent using different income measures. However, health does not significantly affect rural poverty based on expenditures. These results suggest surprisingly that coresidence and transfers do not significantly alleviate poverty for those in poor health, but that the unhealthy do manage to dissave more relative to the healthy to maintain consumption levels. We also find that in rural areas, poverty increases with age, but that this effect is smaller (but still significant) as one moves from respondents own income (2.6 percent higher poverty for each extra year) to expenditures (0.6 percent higher). Education is also negatively associated with poverty. Having a junior high school education or greater reduces the probability of the urban elderly being income poor by seven to 14 percent compared to those with no education, and none of the urban elderly are consumption

poor.<sup>14</sup> The results show a negative effect of junior high education on income poverty of similar magnitude for rural elderly, but the results are not statistically significant and education does not predict consumption poverty for the rural elderly. Finally, being in Zhejiang instead of Gansu has a very large impact on reducing poverty rates for all measures of income or expenditure (23 to 39 percent difference).

Overall, these results suggest that co-residence, transfers, and dissaving together effectively compensate for much of the income shortfall associated with vulnerable characteristics to alleviate poverty.<sup>15</sup> Many factors that predict poverty based on the income of the respondent and spouse are no longer strong predictors of poverty when measured by expenditure per capita.

### **SOURCES OF EXPENDITURE FINANCE**

The differences in income poverty and consumption poverty point to the fact that a significant portion of the elderly are consuming more than their income. While life cycle theory implies that the elderly may support themselves by depleting savings that they have accumulated during their prime working years, it is unclear how important is dissaving for Chinese elderly.

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<sup>14</sup> This is why colinearity causes the junior high school dummy variable to drop out of the urban consumption poverty regression.

<sup>15</sup> We also found that the severity of inequality using different measures falls as one takes into account the incomes of other household members as well as public and private transfers. In addition, as one moves from post-transfer income per capita to expenditure per capita, the Gini coefficient falls from 0.61 to 0.45.

The descriptive statistics presented in Table 6 show that dissaving is actually negative for the elderly on average, equal to 47 percent of urban expenditures and 8 percent of rural expenditures. This is consistent with high savings rates in China and with mean expenditures of the elderly being less than mean incomes (Table 1). Private and public transfers account for 14 (19) and six (nine) percent of expenditures for urban (rural) elderly households, while the income of respondents and spouses account for 140 (56) percent of expenditures and pooling income with other household members accounts for -13.4 (23.7) percent. These last findings suggest that the urban elderly are net providers of support to other household members while the rural elderly are net receivers.

The mean financing shares just described mask a great deal of diversity and reflect the behavior of the rich more than that of the poor because they are weighted by expenditures per capita. To better understand the diversity of financing arrangements for those with different income levels, in Table 6 we divide the urban and rural elderly each into quintiles based on pre-transfer income per capita, where quintile 1 is the poorest group and quintile 5 is the richest group. The next five columns then record the amount of financing from each source as a share of expenditure per capita. We can see that the poorest two quintiles in both urban and rural areas are net dissavers. Among rural households in the bottom two quintiles, dissaving accounts for 53 and 33 percent of expenditures. For the poorest rural quintile, transfers are also important, with private and public transfers accounting for 25 and 21 percent of

expenditures, respectively. Their own income only supports two percent of their expenditure and 0.3 percent of their expenditure comes from pooling income with other family members. For urban households, the dominant source of financing for the poorest quintile is private transfers (71 percent) followed by public transfers (22 percent) and dissaving (7 percent), suggesting that poor urban residents have much greater ability to obtain private assistance than rural residents. Public transfers have similar importance for those in the poorest quintile among urban and rural residents and seem relatively well-targeted overall. But they seem even better targeted to the poor in rural areas, as seen in the sharper drop off in public transfers for those in the second and third rural quintiles compared to those in the second and third urban quintiles.

We noted earlier that eight percent of those who are not poor based on post-transfer income per capita are poor based on expenditure per capita. Because the non-poor represent a large base, this suggests that a large share of the consumption poor may be saving. In fact, separate calculations find that 57 percent of the consumption poor are net savers. Note that this is not to say that the income poor are saving a lot. In fact, among those who are poor based on post-transfer income per capita, only nine percent are savers. This contrasts with 61 percent of the nonpoor who save. In fact, as one would expect, the share of savers increases steadily with income; the share of savers is 21 percent, 32 percent, 57 percent, 80 percent, and 95 percent going from lowest to highest post-transfer income per capita quintiles. Still,



saving by some of the income poor as well as by the non-income poor in sufficient amounts to make them poor may seem concerning.

One possible explanation for this finding is measurement error, that the poor savers are households who have under-reported income. Another is that some of the elderly and their families choose low consumption levels out of habit, for precautionary motives, or out of altruism to preserve resources for their children or grandchildren. To get a sense of how much savings by the poor contributes to measured consumption poverty, we can run a simulation in which we do not allow anyone who is consumption poor to save; in other words we add the amount of savings to their consumption level, and calculate what the poverty rate would have been had they consumed rather than saved. We find that consumption poverty falls from 14.9 percent to 8.7 percent.

In Table 7, we study the determinants of expenditure financing shares for the elderly. Emphasizing relationships that are statistically significant, we find that for urban residents, pensions increase reliance on own income and significantly reduce reliance on other household members and public transfers. Urban residents living alone or in poor health rely significantly more on private transfers; interestingly these relationships are not statistically significant for rural households although the estimated magnitude of private transfer response to poor health is similar. Having three or more children increases reliance on private transfers and reduces reliance on public transfers.

For rural households, greater age reduces reliance on own income while access to pensions increases reliance on own income. In contrast to urban residents, living arrangements have a statistically powerful relationship to sources of finance. Those not living with children rely much less on pooling income with other family members (urban households don't benefit much from coresidence), those living alone or with their spouse rely more on public transfers, those living with their spouse rely more on private transfers, and those living with others rely more on dissaving. Having one child or especially no children significantly increases reliance on public transfers, consistent with the goals of targeted programs for rural residents (e.g., family planning subsidies, subsidies for those with no children or other income support). Having a junior high school education increases reliance on own income, and living in Zhejiang increases the financing shares from own income, gains from pooling income with other household members, private transfers, and substantially reduces reliance on dissaving.

## **DISCUSSION**

Analysis of the CHARLS pilot data collected in 2008 finds that poverty rates of the elderly calculated based on consumption expenditures are much lower than those calculated based on pre-transfer income. For the income poor, coresidence, transfers, and dissaving play key roles in financing consumption expenditures and in keeping the elderly out of poverty. Results of regression analysis suggest that such mechanisms are

relatively effective in protecting those with vulnerable characteristics such as lack of children, low education, and poor health. However, 15 percent of the elderly consume at levels below the World Bank's \$1.25/day international poverty line. Also, mean expenditures per capita are significantly lower for the elderly than for those aged 45-60, suggesting that China's elderly are vulnerable relative to other demographic groups, unlike in some other countries (Lee and Mason, 2009). Those living alone appear to be particularly at risk, a result consistent with the findings of Saunders and Sun (2006) who analyze data on Chinese urban households.

Looking forward, one advantageous factor for dealing with the needs of the future elderly is that they will be much better educated than today's elderly and so will have higher incomes and wealth which will improve their ability to be self-reliant in financing their consumption.

However, the future will also bring significant challenges to providing adequate consumption levels for the elderly. Life expectancy will continue to rise, increasing the years of life requiring support unless work-leisure choices change. As seen in the comparisons between those aged 45 to 60 and those age 60 and above, tomorrow's elderly will have much fewer children and are much more likely to live separately from their children—an ongoing trend in China (Giles, Wang, and Zhao, 2010). Although to date there is no strong evidence that migration by children is associated with lower living standards on average, there is evidence that it is associated with greater variance in living standards, suggesting that some elderly are neglected by their migrant children

(Giles, Wang, and Zhao, 2010). Anthropologists point out that modernization may be undermining filial values (e.g., Yan, 2003), which may be part of longer term trends dating to the early 20<sup>th</sup> century (Benjamin et al., 2000). The sustainability of private support systems for the elderly is a common issue facing many developing countries (Lee, Mason, and Cotlear, 2010; Lee and Mason, 2009).

To meet these challenges, China is aggressively increasing public support for the elderly in the form of expanded pension coverage, as well as social assistance programs such as subsidies to maintain minimum living standards, and family planning subsidies for those elderly who followed family planning guidelines throughout their lives and so have fewer children to support them (World Bank, 2009). Significantly, these programs are being scaled up in rural areas, which is where most of China's poor continue to reside. Our analysis finds that pension payments can significantly reduce the likelihood of the elderly being poor, providing some optimism that current policy initiatives will have a significant impact on elderly poverty. The shift from private to public transfer systems to support the elderly is a path that has been followed by many Latin American countries (Calvo and Williamson, 2008).

Such programs may make it possible for the rural elderly to afford retirement in their older years rather than being forced to work until they drop, an unfortunate condition of rural life in China and other developing countries (Giles, Wang and Cai, 2011; Pang, de Brauw, and Rozelle, 2004; Goldstein and Ku, 1993). Although as noted earlier agricultural income of the elderly accounts for a relatively small share of income,

we find that simulating the loss of such income would increase the rural poverty rate based on post-transfer income per capita by five percent.

One important issue in scaling up public support for the elderly in the form of pensions or public transfers is that such support may crowd out private sources of support (Cai, Giles, and Meng, 2006) or reduce elderly labor supply, reinforcing dependence on public programs. Although this could increase the burden placed on China's public finances, in addition to the direct benefits for the elderly, other factors could mitigate these costs from a public policy perspective. Retirement by the rural elderly could enable them to transfer their land to others who could use the land more productively, and a steady reliable source of income from public programs could reduce the perceived need for precautionary savings and so increase consumption spending.

One limitation of this study is that it examines the situation of the elderly in two provinces which are diverse but not fully representative of China. Studies of other regions or using data from the first nationally representative wave of CHARLS will be of great value. Another limitation of this study is that it takes the different sources of consumption financing as exogenous, and so does not consider how changes in the availability of one type of resource will lead to responses that increase reliance on other sources of finance. Individuals with no children may anticipate future financing needs and work more hours to increase savings in advance of old age. As noted, public transfers may reduce elderly labor supply and private support for the elderly. Studies that address behavioral responses to public policies and impact evaluations of current

policies may help shed important light on how different policies will ultimately affect the welfare of China's elderly.

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TABLE 1 Household Per Capita Income and Expenditure

by Age and by Urban versus Rural (in RMB)

	HH	R/S income		Pre- transfer		Post- transfer		Expenditure	
	Numbe	Mean	Media	Mean	Media	Mean	Media	Mean	Media
Age 45-59	794	17649	8400	15886	7200	15958	7624	8401	6416
Age ≥ 60	737	5114	650	5897	1600	7365	3712	6192	4418
Urban	136	14502	12000	12843	11400	14654	10633	9876	8000
Rural	601	2955	400	4299	1000	5689	2783	5345	3920
Urban/rural		4.91	30.00	2.99	11.40	2.58	3.82	1.85	2.04

Source: authors' calculations using sample of main respondents in CHARLS pilot data.

TABLE 2 Descriptive Statistics for Main Respondents

Variables	Age 45-59	Age ≥ 60	Age ≥ 60	
			Urban	Rural
<b>General</b>				
Age	51.65	70.63	71.11	70.58
Male	0.50	0.48	0.49	0.48
Pension(1=yes)	0.12	0.22	0.67	0.12
<b>Children</b>				
Children=0	0.04	0.03	0.00	0.04
Children=1	0.27	0.08	0.12	0.08
Children=2	0.44	0.21	0.24	0.20
Children>3	0.25	0.67	0.64	0.68
<b>Living arrangements</b>				
Live alone	0.08	0.24	0.27	0.24
Live w/spouse onl	0.26	0.19	0.29	0.16
Live w/adult child	0.30	0.49	0.34	0.53
Live w/others	0.36	0.08	0.11	0.07
<b>Health</b>				
Poor	0.19	0.29	0.19	0.32
Health-fair	0.40	0.39	0.51	0.36
Health-goodabove	0.41	0.32	0.30	0.33
<b>Education</b>				
Illiterate	0.31	0.53	0.31	0.58
Informal educatio	0.19	0.22	0.18	0.23
Primary school	0.16	0.13	0.14	0.13
Junior high or abc	0.34	0.12	0.38	0.05

Source: authors' calculations using CHARLS pilot data

TABLE 3 Poverty Status of Elderly 60 and Above \*

Income Measures	Total	Urban	Rural
<b>Headcount</b>			
RS own income	0.60	0.28	0.68
Pre-transfer income	0.51	0.26	0.57
plus public transfers only	0.44	0.19	0.49
plus private transfers only	0.41	0.15	0.47
Post-transfer income	0.34	0.09	0.40
Expenditures	0.16	0.08	0.17
<b>Poverty gap</b>			
RS own income	0.51	0.27	0.57
Pre-transfer income	0.40	0.23	0.44
plus public transfers only	0.31	0.16	0.34
plus private transfers only	0.27	0.11	0.31
Post-transfer income	0.21	0.07	0.24
Expenditures	0.07	0.04	0.08
<b>Poverty gap<sup>2</sup></b>			
RS own income	0.47	0.27	0.52
Pre-transfer income	0.35	0.22	0.38
plus public transfers only	0.25	0.15	0.28
plus private transfers only	0.22	0.09	0.25
Post-transfer income	0.16	0.06	0.18
Expenditures	0.05	0.03	0.05

\*NOTES: Negative incomes are set to zero in calculating the poverty measures. Source:

authors' calculations using main respondent sample in CHARLS pilot data.

TABLE 4 Income and Consumption Poverty Headcount Ratios for the Elderly

	Poverty Headcount Ratio		
	Pre_transfer Income	Post_transfer Income	Expenditure
Gender			
Women	0.512	0.328	0.167
Men	0.49	0.333	0.144
Rural			
Urban	0.236	0.058	0.078
Rural	0.562	0.393	0.174
Pension status			
without pension	0.626	0.418	0.19
with pension	0.076	0.033	0.04
Number of children			
Children=0	0.890	0.201	0.139
Children=1	0.543	0.481	0.236
Children=2	0.360	0.234	0.100
Children>3	0.521	0.348	0.165
Education Background			
Illiterate	0.606	0.404	0.192
Informally educate	0.428	0.237	0.152
Primary	0.452	0.331	0.111
Junior or above	0.217	0.17	0.049
Living Arrangements			
Men living alone	0.617	0.233	0.187
women living alone	0.738	0.358	0.228
live w/spouse only	0.353	0.242	0.109
live w/adult children	0.445	0.352	0.154
live w/others	0.647	0.493	0.121
Healthstatus			
Poor health	0.654	0.489	0.234
Fair health	0.432	0.26	0.103
Good health or above	0.408	0.266	0.134
Residence			
Urban Zhejiang	0.225	0.062	0.076
Rural Zhejiang	0.476	0.26	0.117
Urban Gansu	0.252	0.053	0.081
Rural Gansu	0.746	0.675	0.297
With or without agricultural income			
Without agri income	0.728	0.705	0.343
With agri income	0.495	0.32	0.151
Total	0.501	0.33	0.156

Source: authors' calculations using main respondents sample of CHARLS pilot data.

TABLE 5 Determinants of Income and Consumption Poverty  
(Marginal Probabilities from Probit Estimation)

	RS own income		Pre-transfer income		Post-transfer income		Expenditure	
	Poor(1=yes)		Poor(1=yes)		Poor(1=yes)		Poor(1=yes)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Age	0.0004 (0.0023)	0.0260** (0.0031)	-0.0009 (0.0032)	0.0114** (0.0029)	0.0000 (0.0015)	0.0093** (0.0028)	-0.0006 (0.0011)	0.0061** (0.0019)
Male	-0.0080 (0.0332)	-0.0937* (0.0377)	0.0400 (0.0434)	-0.0059 (0.0402)	0.0437 (0.0253)	-0.0296 (0.0395)	0.0338 (0.0206)	-0.0113 (0.0275)
Pension(1=yes)	-0.5681** (0.0909)	-0.6946** (0.0399)	-0.4554** (0.0884)	-0.5537** (0.0369)	-0.0769 (0.0495)	-0.4256** (0.0307)	-0.0676 (0.0469)	-0.1354** (0.0287)
Children=0		0.2565** (0.0451)		0.2166 (0.1305)		-0.0436 (0.1334)		-0.0081 (0.0962)
Children=1	0.0279 (0.0927)	-0.0156 (0.0759)	0.0828 (0.1445)	0.0383 (0.0810)	0.3019 (0.2144)	0.1929* (0.0816)		0.0742 (0.0667)
Children>3	-0.0790 (0.0589)	-0.0190 (0.0429)	-0.0056 (0.0504)	0.0249 (0.0471)	0.0188 (0.0223)	0.0533 (0.0465)	0.0001 (0.0148)	0.0354 (0.0318)
Live alone	0.0819 (0.0938)	-0.0145 (0.0666)	0.1543 (0.1244)	0.3055** (0.0487)	-0.0256 (0.0165)	0.1341 (0.0690)	0.0143 (0.0344)	0.1446* (0.0620)
Live w/spouse Only	-0.0158 (0.0335)	-0.0509 (0.0413)	-0.0568 (0.0424)	0.1906** (0.0407)	-0.0010 (0.0207)	0.0866* (0.0442)	-0.0330 (0.0195)	0.0318 (0.0325)
Live w/others	0.0505 (0.0811)	0.0484 (0.0562)	0.0611 (0.0945)	0.2604** (0.0503)	0.0203 (0.0444)	0.2922** (0.0600)	-0.0128 (0.0109)	-0.0170 (0.0404)
Health-fair	0.0338 (0.0341)	-0.1139** (0.0431)	-0.0065 (0.0421)	-0.1232** (0.0429)	-0.0072 (0.0198)	-0.0925* (0.0405)	-0.0313 (0.0199)	-0.0193 (0.0284)
Health-goodab	-0.0140 (0.0342)	-0.1175* (0.0459)	-0.0058 (0.0509)	-0.1273** (0.0457)	-0.0202 (0.0181)	-0.1024* (0.0428)	-0.0223 (0.0154)	0.0030 (0.0315)
Informal educat	-0.0092 (0.0295)	-0.0026 (0.0460)	0.0161 (0.0526)	-0.0341 (0.0503)	-0.0370 (0.0189)	0.0074 (0.0503)	0.0125 (0.0236)	0.0441 (0.0390)
Primary school	-0.0402 (0.0260)	0.0556 (0.0499)	-0.0758* (0.0343)	-0.0111 (0.0587)	-0.0343 (0.0177)	0.0640 (0.0588)	0.0256 (0.0300)	0.0109 (0.0421)
Junior high Or above	-0.1043** (0.0403)	-0.0847 (0.0726)	-0.1434** (0.0441)	-0.0921 (0.0756)	-0.0708* (0.0286)	-0.0906 (0.0698)		-0.0205 (0.0480)
Zhejiang	-0.0096 (0.0266)	-0.2905** (0.0339)	-0.0277 (0.0384)	-0.3058** (0.0366)	-0.0093 (0.0194)	-0.3887** (0.0349)	-0.0026 (0.0131)	-0.2251** (0.0291)
Observations	222	932	222	932	222	932	222	932

NOTES: Standard errors in parentheses, \*\*p<0.01, \*p<0.05. Source: authors' estimates using

elderly sample of CHARLS pilot data.

TABLE 6 Expenditure Financing shares (%)  
For Elderly 60 and Above

Pre-transfer Income Quintile	RS income	Other family	Private Transfers	Public Transfer	Dissaving
Urban	140.3	-13.4	14.3	5.8	-47.1
Lowest	0.2	0.0	70.9	21.6	7.4
2nd	12.4	23.5	20.0	13.4	30.7
3rd	147.9	-32.5	51.4	11.5	-78.3
4th	132.8	-19.1	-4.9	2.0	-10.8
Highest	191.8	-9.6	2.8	2.3	-87.4
Rural	56.1	23.7	19.0	9.3	-8.2
Lowest	1.5	0.3	24.5	20.8	52.9
2nd	27.6	3.1	26.5	9.8	33.1
3rd	65.6	24.3	11.7	2.0	-3.7
4th	114.8	61.5	20.7	2.5	-99.5
Highest	193.1	105.8	0.8	2.1	-201.9

Source: authors' calculations using main respondents sample of CHARLS pilot data

TABLE 7 Determinants of Expenditure Financing Shares For Elderly 60 and Above

VARIABLES	RS own share		Premium		Private Share		Public Share		share	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Age	-0.05 (2.50)	-2.82** (0.60)	-1.22 (1.54)	-0.16 (0.78)	-0.55 (0.68)	2.10 (1.27)	0.29 (0.76)	0.13 (0.46)	1.53 (2.69)	0.75 (1.64)
Male	-5.33 (32.45)	11.67 (8.48)	-1.47 (19.90)	-2.83 (11.13)	-5.12 (8.76)	-0.41 (18.05)	8.25 (9.90)	1.03 (6.48)	3.66 (34.90)	-9.45 (23.22)
Pension (1=yes)	139.59** (37.72)	87.04** (13.47)	-101.38** (23.14)	-27.81 (17.70)	-7.80 (10.18)	-0.23 (28.68)	-55.27** (11.51)	-1.30 (10.31)	24.87 (40.57)	-57.70 (36.90)
Live alone	-66.13 (56.43)	-14.43 (14.73)	-46.79 (34.61)	-80.06** (19.35)	58.73** (15.23)	12.61 (31.36)	29.11 (17.22)	37.85** (11.27)	25.07 (60.70)	44.03 (40.35)
Live w/spous Only	-20.83 (33.00)	7.05 (9.11)	3.12 (20.24)	-65.60** (11.96)	2.47 (8.91)	54.37** (19.39)	3.18 (10.07)	14.59* (6.97)	12.07 (35.50)	-10.41 (24.94)
Live w/others	38.58 (51.30)	-8.13 (13.08)	-52.00 (31.47)	-65.11** (17.18)	0.68 (13.85)	-1.98 (27.85)	-8.79 (15.66)	0.87 (10.01)	21.53 (55.18)	74.35* (35.83)
Children=0	0.00 (0.00)	-23.92 (30.75)	0.00 (0.00)	30.99 (40.39)	0.00 (0.00)	-37.09 (65.46)	0.00 (0.00)	115.71** (23.52)	0.00 (0.00)	-85.69 (84.23)
Children=1	-54.55 (60.38)	-12.16 (16.81)	-56.39 (37.03)	46.59* (22.08)	-15.79 (16.30)	-31.03 (35.79)	-20.12 (18.43)	25.35* (12.86)	146.86* (64.95)	-28.75 (46.05)
Children>3	-29.47 (36.96)	-15.57 (9.77)	-7.35 (22.67)	20.46 (12.83)	19.90* (9.98)	19.44 (20.80)	-33.43** (11.28)	7.04 (7.47)	50.36 (39.76)	-31.36 (26.76)
Health-fair	-30.70 (34.49)	23.62** (9.05)	30.97 (21.16)	11.66 (11.89)	-29.44** (9.31)	-25.88 (19.27)	0.39 (10.53)	10.39 (6.92)	28.78 (37.10)	-19.78 (24.79)
Health- Goodabove	-13.23 (41.44)	12.65 (9.70)	-5.68 (25.42)	11.45 (12.74)	-23.70* (11.19)	-21.89 (20.65)	-15.76 (12.65)	7.53 (7.42)	58.36 (44.58)	-9.73 (26.58)
Informal	-18.07 (46.26)	4.81 (10.61)	-16.80 (28.37)	-10.84 (13.94)	2.95 (12.49)	-14.59 (22.59)	18.99 (14.12)	6.37 (8.12)	12.93 (49.76)	14.25 (29.07)
Education	125.16** (47.39)	1.46 (12.12)	14.09 (29.07)	-18.14 (15.92)	6.88 (12.80)	-3.80 (25.81)	2.58 (14.46)	-7.17 (9.27)	-148.72** (50.98)	27.66 (33.20)
Junior high Or above	51.79 (45.73)	55.69** (15.64)	-22.45 (28.05)	3.76 (20.54)	-3.66 (12.35)	-7.29 (33.29)	1.73 (13.96)	-8.28 (11.96)	-27.40 (49.19)	-43.87 (42.84)
Zhejiang	20.54 (30.17)	18.69* (8.38)	24.52 (18.51)	49.28** (11.00)	20.74* (8.15)	37.55* (17.83)	-3.09 (9.21)	6.76 (6.41)	-62.71 (32.46)	-112.28** (22.95)
Constant	88.08 (175.29)	226.77** (41.62)	159.38 (107.52)	29.64 (54.66)	54.58 (47.33)	-144.14 (88.59)	53.05 (53.50)	-16.50 (31.83)	-255.09 (188.55)	4.23 (113.98)
Observations	221	924	221	924	221	924	221	924	221	924
R-squared	0.18	0.14	0.16	0.06	0.21	0.03	0.19	0.07	0.12	0.05

NOTES: Standard errors in parentheses, \*\*p<0.01, \*p<0.05. Source: authors' estimates using elderly sample of CHARLS pilot data.