Public Disclosure Authorized

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WPS6076

Policy Research Working Paper 6076

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June 2012

Policy Research Working Paper 6076

Abstract

Using the China Health and Retirement Longitudinal Study 2008 pilot, this paper analyzes the patterns and correlates of intergenerational transfers between elderly parents and adult children in Zhejiang and Gansu Provinces. The pilot is a unique data source from China that provides information on the direction as well as amount of transfers between parents and each of their children, and clearly distinguishes transfers between parents and children from those among other relatives or friends. The paper shows that transfers flow predominantly from children to elderly parents, with transfers from children playing an important role in elderly support. Taking advantage of the rich information available in this survey, the authors find strong evidence that transfers are significantly affected by the financial capabilities of individual children. Educated and married children have a higher tendency to provide transfers to their parents; and oldest sons are less likely to provide transfers than their younger brothers. With future continued rapid economic growth in China, the income disadvantage of the elderly will persist and upward generational transfers will likely remain the most common form of private transfers. In the absence of some other source of elderly support (such as a public pension or own savings), the dwindling number of children implies that the financial burden associated with supporting the elderly is likely to increase.

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Produced by the Research Support Team

Patterns and Correlates of Intergenerational Non-Time Transfers: Evidence from CHARLS[♦]

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Key Words: Intergenerational Transfers, Population Aging, China, CHARLS

JEL Codes: J14, O12, D64, H55, Q12

Sector Board: Social Protection (SOCPT)

[♦]The survey data collection necessary for this research was supported by the US National Institute on Aging (R21AG031372), the National Science Foundation of China (70773002 and 70910107022), the Knowledge for Change Trust Fund at the World Bank. The content reflects the work of the authors and does not represent the official views of any funding agencies.
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Introduction

China is now facing an unprecedented aging process, which is rapid, but at a low level of economic development and with shallow social safety nets. With the introduction of family planning policies in the 1970s that caused a plummet in the birth rate during the past few decades, and with the earlier "baby boom" generation who will soon pass their 60th birthday in the next 15-20 years, it is projected that the old-age dependency ratio will climb from the current 10 percent to 40 percent by 2050.[1] However, unlike the advanced industrialized countries such as the U.S. and European countries whose social safety nets covered the majority of the elderly before the aging of the population, China is aging at a relatively low level of development with many times lower per capita income and less-developed political and financial institutions.

In comparison with the old-age support system that is operating with fragmented infrastructure and a lack of comprehensive coverage, informal familial support has long been the most important source of help in low income countries. With its long history and culture, China has unique traditional family values that are especially strong in the rural areas. The deep-rooted Confucian "filial piety", characterized by both financial and time transfers from children to their parents and the co-residence of multiple generations, has been a core feature of China's informal old-age security system.

[1] Source: "World Population Prospects," United Nations, 2009.

The traditional foundation of old-age support is changing today. First, economic shifts involving smaller household sizes, greater mobility of the population, and perhaps weakening of ties of kin outside the household are potentially undermining this tradition, making it increasingly difficult for older Chinese to receive support from their adult children. Thus, it is important at this stage in China's development to understand the patterns of intergenerational transfers among Chinese families and to evaluate the extent to which intergenerational transfers still function as a part of elderly support. Secondly, despite the existence of "filial piety," other Chinese traditional norms may also linger and have influences on family transfer behaviors. For instance, in China, there is a shared ideal of family continuity through the male line in which the females are considered inferior to the males, so parents tend to favor sons, reflected in the inequitable distribution of transfers (Lee et al., 1994). Therefore, we also try to investigate the correlates of intergenerational transfers, with a hope to better understand the driving forces behind transfer behaviors between elderly parents and their adult children.

In this paper, we examine the incidence and net amount of transfers and their correlations with parental demographics, socio-economic status, health status as well as children's demographics and socio-economic status. The main findings include: 1) contrary to the situations in most developed countries, transfers are predominantly from children to elderly parents, and are large in magnitude compared with parental pre-transfer income; 2) older people with a larger number of offspring tend to receive more transfers; those

residing with other children are less likely to receive transfers from non-resident children; 3) the relationship between parental pre-transfer income and transfers is mixed, depending on the income level of the parents; 4) married children are more able to provide transfers; 5) educated children transfer more frequently and a larger net amount; and 6) oldest sons are less likely to provide transfers.

Our findings reveal that given the insufficient pension system and social safety nets in today's China, children remain the major source of elderly support, implying that traditional social norms still play an important role. The incidence and amount of transfers are responsive to parents' income levels, and affected by the socio-economic status of children. As China is growing quickly as it becomes a graying society, we expect adult children to continue to shoulder considerable responsibility for supporting their elderly parents.

1. Literature Review

How will China support its growing retiree population? Does the government have the resources to meet the challenge of poverty among the elderly as China’s population ages? The present situation is far from satisfactory. Under the Chinese traditional "pay-as-you-go" (PAYG) pension system in place in urban areas, local governments collect pension contributions and other taxes to pay current pensions, and each employee receives a promise that he/she will receive a pension paid for by other workers tomorrow.

As China is aging rapidly, the number of new workers entering the workforce will decline, and rising longevity will increase the size of the pension-age population. The PAYG system will start to run deficits as the dependency ratio rises, and the value of future net liabilities will start to increase sharply as well.

Although the Chinese government has recently introduced a series of new social insurance and pension programs, it faces great difficulty in implementation due to the dual processes of rapid demographic transition and urbanization (Cai et al., 2006). Although it contains three pillars in name (the PAYG pillar, the funded individual account, and voluntary complementary insurance), the current social insurance system does not differ much from the PAYG system: The money in the individual account is often used to pay for the pensions of existing retirees and in large part, it is an empty account, and the third pillar is trivial. It has also been shown that even with the extremely high current payroll tax rate (28%), due to its low rate of return, the pension system may never be able to achieve the promised replacement rate once one takes the demographic transition into account (Lei et al. 2011). With this insufficient social insurance, private transfers will continue to be important at least in the foreseeable future.

A large theoretic literature has focused on explaining the patterns and determinants of private transfers (Altonji et al., 1997; Becker, 1974; Cox, 1987; Cox and Fafchamps, 2008; Cox and Soldo, 2004; Kotlikoff, 1998; McGarry and Schoeni, 1995), and a considerable body of empirical research has been conducted in developed countries.

Regarding the patterns of intergenerational transfers, over one-third of parents give money to children in the U.S. (Hurd et al., 2007) and parental assistance is important in supporting young men (Rosenzweig and Wolpin, 1993). In Poland, high income parents transfer to low income young couples (Cox et al., 1997).

By contrast, two or three out of five households provided financial transfers to their aged parents in Korea (Kim, 2010; Song, 2009), which is similar to most areas of Asia where children transfer to parents to insure them against low retirement incomes (Nugent, 1985; Cai et al., 2006). However, multiple transfer patterns between adult children and their parents exist in Malaysian and Indonesian families (Lillard and Willis, 1997; Frankenberg et al., 2002). In particular, children are an important source of old age security which in part is children's repayment for parental investments in their education; in the meantime parents and children provide each other assistance through exchanges of time and money.

Regarding the determinants of intergenerational transfers, most studies focus on the relationship between transfers and recipients' income with the purpose of exploring underlying motives. The evidence is mixed, varying across different regions. A strong negative correlation has been found in the U.S. (McGarry et al., 1995), but a positive one is detected in Peru (Cox et al., 1998).

Studies regarding intergenerational transfers in China are few, possibly because available data are in short supply and not well suited to study this set of questions. In recent years, with China's rapid development and aging, more studies have been done (Cai et al., 2006; Chou, 2010; Lee and Xiao, 1998; Giles et al, 2010; Goh, 2007; Secondi, 1997). For example, Secondi (1997) used data from a large 1988 household survey to test the hypotheses of altruism and exchange and to study the size and direction of transfers in rural China. He found that most of the money flows appeared to be transfers from adult children to elderly parents and remittances from migrants. Cai et al. (2006) addressed how households with elderly members coped when enterprise-based or local public pension systems failed to provide sufficient income. They found evidence that the transfer flow was from children to parents and that private transfers responded to low household income of retired workers when income fell below the poverty line. Giles et al. (2010) find that there is more risk associated with transfers into households with migrant adult children. All of these studies have the same weaknesses that transfers are defined as a household aggregate for which the donors are unspecified, rendering these studies unable to differentiate between inter-generational and intra-generational transfers.

2. Data

We draw on the recently released 2008 pilot of the China Health and Retirement Longitudinal Study (CHARLS), a survey conducted from July to September in 2008 by the National School of Development at Peking University (Zhao et al., 2009). As one of

the sisters of HRS[2]-serial surveys, CHARLS is rich in information ideal for research on transfers. In the interview, the respondents were asked whether they had received transfers from and/or given transfers to each of their children, and if so the corresponding amount.[3] Transfers are specified in two categories: financial transfers[4] and in-kind transfers (mostly in the form of goods), both of which are non-time transfers.

The survey was conducted in Zhejiang and Gansu, representing two very different development levels in China (see the two provinces on the China map of Figure 1). Zhejiang, a southeast coastal province, has been enjoying rapid economic growth since the implementation of the reform policies, and now it is one of the richest areas in China. Gansu, by contrast, which is located in the hinterland of Northwest China, is one of the poorest provinces, the development of which has been constrained by its inclement natural environment and geographic distance from commercial centers. The two differing economic and natural environments contribute to different living standards of residents and potentially influence intergenerational transfers. Both provinces had major declines in fertility and mortality, with the fertility decline accelerating in the late 1970s, when stronger family planning policies were introduced (China's Population and Employment Statistics Yearbook, 2009).

[2] HRS: Health and Retirement Study.
[3] Amounts are asked if financial transfers occur, and frequencies are asked if time transfers occur. In this paper, we only focus on financial transfers.
[4] Financial transfers are further classified into two types: regular financial transfers and non-regular financial transfers. Non-regular transfers are those made at special times of the year such as Spring Festival or a parent's birthday.

CHARLS main respondents are a random sample of people over the age of 45, of which both main respondents and their spouses are asked for detailed information on themselves and on their families. In this paper, we are particularly interested in the transfers between the respondents and their adult children.[5] CHARLS has information on all living children of each respondent and spouse, no matter where they live. In order to fully employ the rich information on each of their children, the basic sample of interest are the children of the CHARLS respondents. Specifically we first chose the 789 households in which either the main respondent or his/her spouse was over 60.[6] The 2,667 adult children (25 or older[7]) of the 789 respondents are then treated as our study sample.

Several sample restrictions are further applied according to different purposes of the study. For the estimation on transfers, we restrict the analyses to non-resident children (2,202 observations) because transfers within the household are not clearly specified conceptually and CHARLS, like other aging surveys, does not attempt to measure them. In analytical models exploiting family fixed-effects, only those families with at least two non-resident adult children are included (2,068 observations).

In order to use individual information on both parent and child, we match individual child and parental characteristics. We choose the information of the main respondent parent

[5] The incidence of transfers between the respondents and their elderly parents are quite small (only 13.4%), so we did not take them into consideration in our analysis. Family transfers can entail interactions among members of three or even four generations, but it is beyond the scope of this paper to give a comprehensive treatment of this issue.
[6] Only 16 main respondents do not have any children in the sample, who are dropped for the purpose of studying parent-child transfers.
[7] We choose age 25 because many adult Chinese people younger than 25 are full-time college students who are incapable of supporting their parents.

because every child has a main respondent parent and, as stated earlier, the main respondents are chosen randomly by the survey.

3. Measures and Summary Statistics

3.1 Parent Level Characteristics

In our analysis, we focus on three characteristics of parents that are most likely to influence transfer decisions: demographics, socio-economic status (SES) and health.

Demographic variables include age, age-squared, gender, marital status (married and living with his/her spouse/partner, married but not living with spouse, separated, divorced, widowed, or never married), location (urban or rural, Zhejiang or Gansu), the number of children and living arrangements vis-a-vis children.

Socioeconomic status (SES) has three dimensions: home ownership, education level and pre-transfer income.[8] Education is classified into five discrete educational groups: illiterate, less than primary education, finished primary, junior high and senior high and above. In particular, the second category—less than primary education—includes those

[8] In our analysis, pre-transfer income with and without public transfers are both conducted, and the results are similar. We only report the results without pubic transfers included in the pre-transfer income, because public transfers are arguably endogenous in a reasonable economic model.

who did not finish primary school but are capable of reading or writing, or those who reported to have been in "Sishu."[9]

Health related variables include the CES-D score, a score of cognition using questions from the Telephone Interview of Cognition Status (TICS), used by HRS and other surveys of the elderly, and dummies indicating whether one has poor general health, has any difficulties performing ADLs (activities of daily living) or IADLs (instrumental activities of daily living) and has been diagnosed with a major chronic disease. Following the HRS example, the CHARLS questionnaire asked respondents to assess their general health using a scale of: excellent, very good, good, fair, poor. Here, we look at whether a respondent reports poor health. ADL or IADL disability is defined as having difficulty in any of the ADL (including physical limitations) or IADL activities.

The cognition of the respondents comprises three questions about time orientation,[10] one question about serial-7 subtraction from 100[11] and one question concerning picture drawing. These are standard cognition questions from TICS (Smith et al. 2010). We differentiate people as those with full marks (11 points), those who scored 8, 9 or 10, and those with a score below 8. We choose 8 as the cutoff point because about one-third of the sample had scores below 8.

[9] Sishu is a type of traditional private Chinese education that featured the Chinese classics before the 20th century. By 1949, study through sishu was already quite rare.
[10]Respondents are asked about today's date (year, month and day), week and season.
[11]Respondents are asked to subtract 7 from 100, then another 7 from that and so on until the fifth 7.

Respondents are also asked whether they have been diagnosed with a chronic disease. They are coded as having major illness if they have one of the following: 1) cancer or malignant tumor (excluding minor skin cancers), 2) heart attack, coronary heart disease, angina, congestive heart failure, or other heart problems, 3) stroke (including transient ischemic attack or TIA), or 4) chronic lung diseases, such as chronic bronchitis or emphysema (except for asthma, excluding tumors, or cancer). If they have any of the other canvassed diseases,[12] they are considered as having minor illness. Otherwise, they are categorized as not diagnosed with any diseases.

Table 1 summarizes parents' characteristics by living arrangement.[13] Among all the main respondent parents of the children studied, 51.8 percent are co-residing with adult children, 42.6 percent are fathers, and each has 3.4 children on average, with a mean age of 68.4 years Overall, parents in the sample have low education levels: as much as 54.9 percent are illiterates, and 21.8% have not graduated from primary school. The annual per capita pre-transfer income is 5.3 thousand RMB on average, and those co-residing with children have slightly higher income than their non-co-residing counterparts (5.6 vs. 5.1 thousand RMB).

Intergenerational transfers play an important role for the Chinese elderly. The sample parents on average receive 2.5 thousand RMB of net transfers from all of their children,

[12] These diseases include hypertension, high cholesterol, diabetes or high blood sugar, liver disease, such as Hepatitis B, or other liver disease (except fatty liver, tumors, and cancer), kidney disease (except for tumor or cancer), stomach or other digestive disease (except for tumor or cancer), emotional, nervous, or psychiatric problems memory-related disease, and arthritis or rheumatism.

[13] For more detailed information on living arrangement of CHARLS elderly, please see Lei et al. (2011).

amounting to 15.2 percent of their household pre-transfer income. The amount is much larger for those who are not living with their children (2.9 vs. 2.1 thousand) and the discrepancy in the ratio is especially larger (26.7 percent vs. 9.7 percent). This implies that transfers and co-residence are possible substitutes. In addition, just over one quarter of Chinese elderly report poor general health, 23.6 percent of them have a cognition score lower than 8, nearly 30.4 percent are diagnosed to have a major chronic illness and as much as 51.1 percent have some difficulties in performing activities of daily living.

The p-values reported in the last column show significant differences between co-resident and non-resident parents in their marital status, place of residence, house ownership and cognition. Specifically, parents living with their children are more likely to be widowed, have more children, be from Gansu and rural.

3.2 Child Level Characteristics

Child characteristics are grouped into demographics and SES, the former of which consists of age, the number of their own children (grandchildren of the parents), and five dummies representing whether the child is the oldest son, youngest son, [14] or daughter, whether he/she is married, and the highest level of education he/she has attained.[15]

[14] A son is classified as both the youngest son and the oldest son if he is an only child.

[15] Children's education is classified into 5 categories: illiterate, primary education, middle school, high school, college and above.

Table 2 summarizes child demographic characteristics and socio-economic status by living arrangement using the child sample, i.e. those who are 25 and older and with at least one parent over 60. Among the 2,667 children, 465 (17.4 percent) are living with their parents and co-residence is highly related to many child characteristics. The average age of those who co-reside is 39.1, significantly less than the mean of 42.5 for those who are non-resident. Daughters are less likely to live with parents and oldest sons and especially youngest sons are more likely to live with their parents. Furthermore, education is also associated with co-residence, but the pattern varies by level of education: adult children with low education (those who are illiterate and those with primary school education) and high education (college and above) are not likely to live with parents, but those with intermediate levels (middle school) are significantly more likely to live with parents.

4. Patterns of Transfers

Respondents are asked, in the family module of the CHARLS survey, about the amount and frequency of non-time transfers, and including financial transfers and in-kind transfers (in the form of goods) received from and given to each child. Financial transfers involve giving money, helping pay bills, such as medical care or insurance, schooling, and down payment for a home or rent. These transfers are further divided into regular and non-regular financial transfers. Regular transfers were paid on a regular basis such as monthly payments. Irregular transfers occurred around such events as a festival or

marriage, or assistance with large medical expenses or other large expenses. In-kind transfers are non-monetary gifts provided or given in the past year.

We first separately analyze the prevalence of transfers from a child to parents and then examine the amount of net transfers to parents, defined by subtracting the amount given to a particular child from the amount received from the same child.

Table 3 summarizes the patterns of transfers. Overall, familial intergenerational transfers are pervasive, with about 60 percent of the children having provided transfers to their parents. The prevalence of transfers from parents to their adult children is smaller, at only 3.3 percent. The net amounts in terms of financial and in-kind transfers are all positive, towards parents. About 38 percent children provide financial transfers to their parents, roughly commensurate with in-kind transfers which have a 42 percent prevalence rate. Irregular transfers account for the largest part of financial transfers, with prevalence rates roughly three times that of regular financial transfers.

The average net amount of total annual transfers is about 741 RMB per child, in which financial transfers amount to 548 RMB and in-kind transfers are 192 RMB. The net amount of regular transfers is much smaller than irregular financial transfers (190 RMB compared with 358 RMB).

There exist large disparities between regions: Zhejiang/urban children are more likely to provide transfers to their parents: about 64/68 percent in general, compared with 55/53

percent in Gansu/rural. Zhejiang/urban children provide 1,140/1,192 RMB per year, while those in Gansu/rural only provide 325/421 RMB.

5. Correlates of Transfers

A series of descriptive results from multivariate analyses of the incidence and magnitude of transfers are discussed in this section, first using ordinary least squares (OLS) models, and then use family fixed-effect (FE) models. The fixed effect models highlight the role of child birth order and educational attainment on transfers after controlling for unobserved family characteristics. Transfers are investigated in two dimensions: the incidence of transfers provided by the child, and the net amount of transfers provided by the child.[16]

6.1 Associations with Parent Characteristics

Tables 4 and 5 report the results from the OLS estimations. Specifically, Table 4 reports incidence of gross transfers from children to parents and Table 5 examines the net amount of these transfers. We have two specifications, with and without the parental health measures, which may be affected by transfers, and thus endogenous.

As is shown in Tables 4 pre-transfer parental income, number of parents' children, province and living arrangements are all correlated with the incidence of children

[16] An earlier version of this paper included analyses of gross transfers from parents to children, which as noted is far less common than from children to parents. Results are available upon request.

providing transfers, while the coefficients of ages, age squared and gender are not significant.[17] We create a linear spline for pre-transfer income with three linearly connected segments based on two percentile points (1/3 and 2/3) of pre-transfer income. Coefficients for one segment show the slope over that segment. Higher pre-transfer income is correlated with a higher likelihood of a child giving, perhaps because of strategic motives having to do with potential bequests, but too, perhaps because higher income parents invested more in the child earlier in life and this is an implicit exchange repayment. This relationship is nonlinear, and at higher levels of income the association becomes flat.

Interestingly, parents with more children have a higher probability of receiving transfers from each child, which may reflect a strategic bequest motive for making transfers. However, if the parents live with another child, the likelihood of transfers from non-resident children declines. Children thus share the burden of support. Interestingly parental health is not generally associated with transfer incidence, except for CES-D scores, where a higher score (reflecting greater likelihood of depression) is associated with a *lower* chance of receiving transfers.

Table 5 shows that for the net transfer amounts, pre-transfer parental income has a weak positive relationship for the bottom third income group, but it becomes significantly negative for the top third group. We do not have a good explanation for this change in

[17] We have tried interacting age with gender, but none of the coefficients are significant.

slope. Parental education and health status do not have significant relationships with transfer amount.

6.2 Associations with Child Characteristics

Correlates of transfers from the perspective of children are examined by both OLS and family fixed effects (FE) models. The OLS models are able to estimate the coefficients of parent characteristics, while the family fixed-effect models correct for unobserved family heterogeneity and compare transfer behaviors among different children within the same family. FE results are displayed in Tables 6 and 7, where the sample is further restricted to those having at least one eligible (i.e., non-resident and adult) sibling. Net transfers are classified into three categories: financial transfers, in-kind transfers, and the total of both. In the following, we discuss the estimation results related to child characteristics from both models (Tables 4-7) but will focus mainly on the FE results (Tables 6-7).

Among children's demographic variables, age has a positive, concave relationship with transfer incidence in both the OLS and family fixed effects models. Married children are more likely to transfer to parents, with a larger and more significant effect in the FE model. The oldest son is less likely to provide transfers, if he lives apart, in the FE models, especially for in-kind and total transfers. There is no relationship between transfer levels and being the youngest son or daughter.

Regarding the socio-economic status of the children, children's educational attainment is positively associated with the incidence of transfers. This remains true even in the more demanding family fixed effects specification, although the magnitude of the coefficients drops substantially.

On the amount of net transfers, oldest sons are more likely to provide more financial and total transfers, though the coefficients, while large, are not significant. Daughters, on the other hand provide less, and coefficients are weakly significant for financial transfers.

Child schooling at the high school or above level is strongly associated with the amount of net transfers given in the OLS regressions, but the education dummies as a group become insignificant, and the coefficient magnitudes decline, once we take into account fixed family effects.

7. Conclusions

The economic literature has studied intergenerational transfers extensively. Most of the research is conducted in developed countries where the direction of transfers flows from parents to children. In China, intergenerational transfers have long been an important source of elderly support. With rapid population aging, shrinking family size, and greater mobility of children, it is possible that the family may be losing its importance in the role of elderly support. In recent years the Chinese government has taken various efforts to develop its old-age support system, which may have further crowded out family support.

As yet we cannot predict the future with any degree of scientific validity; we evaluate the current of intergenerational transfers from a recent comprehensive survey.

With detailed and high-quality data on intergenerational transfers as well as rich information on both parents and their children, the China Health and Retirement Longitudinal Study (CHARLS) 2008 pilot provides a fine opportunity to achieve this goal. This paper developed empirical models to explore the patterns and correlates of intergenerational transfers between the elderly parents and adult children in Zhejiang and Gansu Provinces.

Contrary to the situations in most developed countries, we find that transfers are predominantly from children to elderly parents, and still play an important role in the support of China's elderly. Our results reveal that older people with a larger number of offspring more likely to receive transfers, a result indicating the potential challenges faced with dwindling numbers of children. Parental income has a mixed prediction depending on the magnitude of pre-transfer income of each parent. For those among the bottom income group the relationship is positive, but becomes negative for the top income group. Within the family, there is evidence consistent with division of responsibility among children, potentially based on children's capabilities. For example, highly educated children transfer more frequently, so do married children. Although there is no significant difference in amount of transfers, oldest sons appear less likely to provide transfers, which seems to be in contradiction with conventional wisdom.

Daughters are just as likely to provide transfers as other children, but tend to provide less on net.

The one caveat about these results is that the older cohorts we study still had an average of 3.4 children each, so the constraints created by more stringent family planning starting in the 1970s has not yet been reached. How will transfers evolve for later cohorts, those who have fewer children but more human capital and higher life-cycle incomes? This remains an important question for future study as China's population ages and new social insurance and pension systems mature.

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Figure 1

Zhejiang and Gansu Provinces

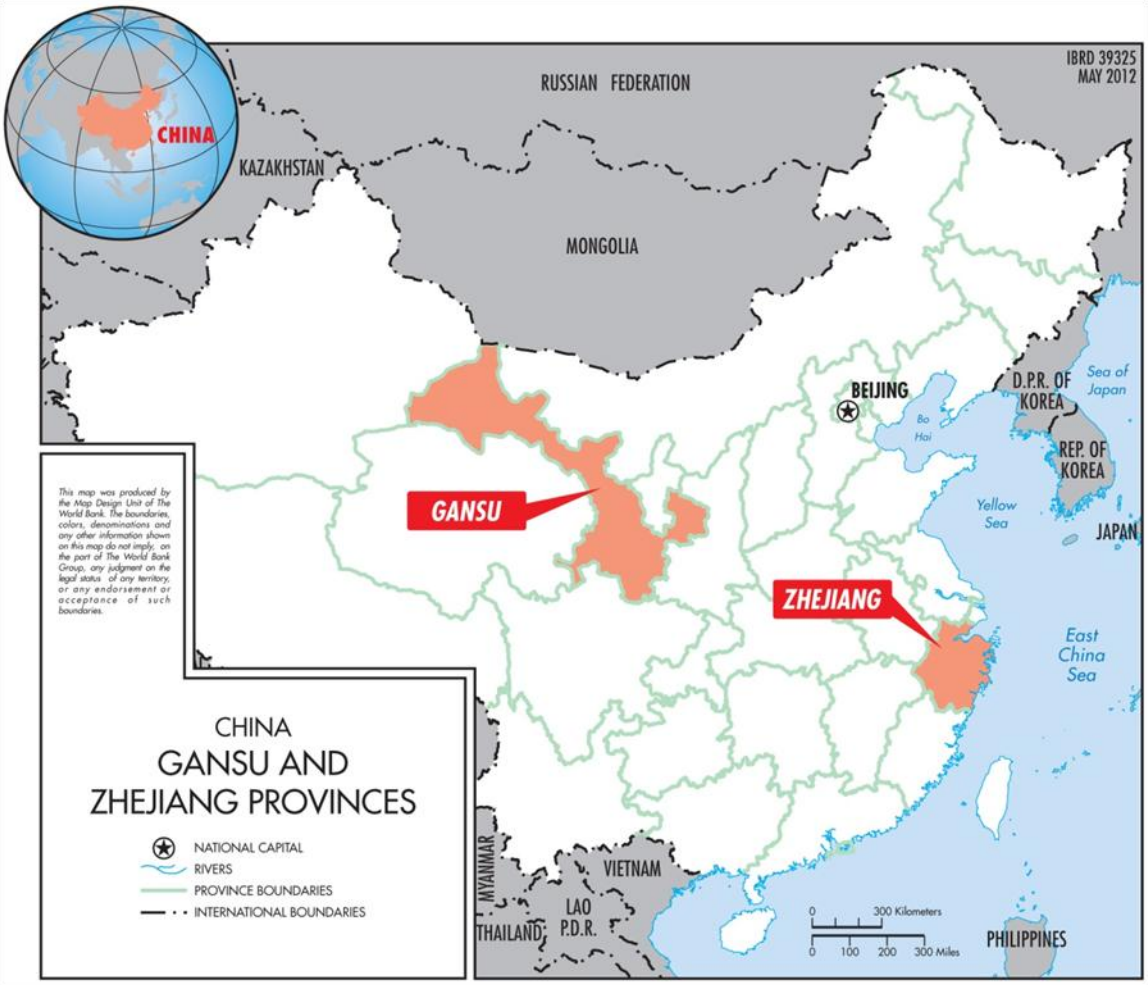


Table 1: Summary Statistics of Parent Characteristics

Parent Characteristics	All	Coresident	Non-coresident	P-values
Age	68.44	68.34	68.54	0.726
Father (%)	42.59	43.52	41.58	0.582
Marital Status (%)				
Married with spouse/living with partner	59.44	53.79	65.53	0.001
Married but not living with spouse temporarily	1.39	0.49	2.37	0.028
Separated	1.14	0.98	1.32	0.657
Divorced	0.51	0.00	1.05	0.045
Widowed	37.01	43.77	29.74	<0.001
Never married	0.51	0.98	0.00	0.045
# of children	3.40	3.54	3.26	0.016
Zhejiang (%)	52.85	44.01	62.37	<0.001
Urban (%)	41.95	34.23	50.26	<0.001
Living with adult children (%)	51.84	100.00	0.00	
House owner (%)	89.48	94.38	84.21	<0.001
Education (%)				
Illiterate	54.88	57.21	52.37	0.172
Less than primary education	21.80	22.00	21.58	0.885
Primary school	13.43	12.71	14.21	0.539
Middle school	5.83	4.65	7.11	0.144
High school and above	4.06	3.42	4.74	0.353
Pre-transfer income per capita (PTI, 000s)	5.32	5.08	5.58	0.501
Household Pre-transfer income (HPTI, 000s)	16.52	21.68	10.98	<0.001
Total net amount of transfer (TT, 000s)	2.50	2.10	2.93	0.111
Transfer-income ratio (HPTI/TT, %)	15.15	9.68	26.71	
Self-reported Health (%)				
Excellent	1.39	1.47	1.32	0.856
Very good	8.75	7.82	9.74	0.344
Good	15.34	15.16	15.53	0.886
Fair	35.23	32.03	38.68	0.051
Poor	26.24	27.87	24.47	0.278
Cognition (%)				
Score=11	10.27	10.02	10.53	0.817
Score in [8, 11)	32.32	25.18	40.00	<0.001
Score in [0, 8)	23.95	22.98	25.00	0.508
Disease (%)				
Minor illness	46.51	47.68	45.26	0.498
Major illness	30.42	31.30	29.47	0.579
CES-D score	8.52	8.81	8.21	0.090
ADL or IADL disability (%)	51.08	58.92	42.63	0.090
Observations	789	409	380	

Note: 1) Sample are main respondent parents with children no younger than 25, and older than 60 or spouse older than 60.

2) P-values are from t-test of the coresident and non-coresident groups.

Table 2: Summary Statistics of Child Characteristics

Child Characteristics	All	Coresident	Non-coresident	P-values
Age	41.95	39.12	42.54	<0.001
Oldest son (%)	15.90	22.37	14.53	<0.001
Youngest son (%)	27.30	61.29	20.12	<0.001
Daughter (%)	46.04	12.04	53.22	<0.001
Married (%)	91.38	78.49	94.10	<0.001
# of children (age<16)	0.34	0.47	0.31	0.001
Education (%)				
Illiterate	16.91	12.26	17.89	0.001
Primary	34.91	33.12	35.29	0.369
Middle School	28.65	38.06	26.66	<0.001
High School	13.65	13.55	13.67	0.945
College and above	5.89	3.01	6.49	<0.001
Coresident (%)	17.44	100.00	0.00	
Observations	2667	465	2202	

Note: 1) Sample are adult children no younger than 25 with at least one parent who is older than 60.

2) P-values are from t-test of the coresident and non-coresident groups.

Table 3: Transfer Patterns

	All	Zhejiang	Gansu	Urban	Rural
Incidence (%)			Children to parents		
Financial transfer	38.07	47.56	28.19	47.18	31.61
Regular	8.47	13.70	3.01	11.66	6.21
Irregular	30.09	34.74	25.25	36.34	25.66
In-kind transfer	42.23	40.52	44.02	46.27	39.37
Total	59.51	64.15	54.67	68.03	53.46
Incidence (%)			Parents to children		
Financial transfer	1.93	2.00	1.85	3.55	0.78
Regular	0.42	0.44	0.39	1.00	0.00
Irregular	1.55	1.63	1.47	2.64	0.78
In-kind transfer	1.70	1.11	2.32	1.82	1.62
Total	3.33	2.89	3.78	5.01	2.13
Amount (RMB/year)			Net transfer		
Financial transfer	548.46	864.78	218.70	894.03	303.18
Regular	190.34	360.96	12.47	339.25	84.65
Irregular	358.12	503.81	206.23	554.78	218.53
In-kind transfer	192.32	275.09	106.04	297.92	117.37
Total	740.78	1139.87	324.75	1191.96	420.55

Note: Sample are non-coresident adult children 25 and older with at least one parent older than 60.

Table 4: OLS Analysis of Gross Transfer Incidence (from Children to Parents)

		(1)	(2)	(3)	(4)
Parent Characteristics					
Demographics	Age	0.006	(0.034)	0.009	(0.034)
	Age square/100	-0.011	(0.024)	-0.012	(0.024)
	Father	0.020	(0.035)	0.017	(0.035)
	Widowed	-0.036	(0.033)	-0.029	(0.033)
	Number of children	0.030**	(0.013)	0.029**	(0.013)
	Zhejiang	-0.024	(0.106)	-0.077	(0.111)
	Urban	0.059	(0.038)	0.051	(0.039)
	Living with other adult children	-0.180**	(0.075)	-0.177**	(0.074)
SES	House owner	-0.060	(0.043)	-0.061	(0.043)
	Education (Illiterates omitted)				
	Less than primary education	0.009	(0.039)	-0.002	(0.041)
	Primary school	0.002	(0.049)	-0.006	(0.049)
	Middle school	0.068	(0.063)	0.043	(0.066)
	High school and above	0.050	(0.081)	0.020	(0.080)
	P-value for education	0.828		0.958	
	Pre-transfer income (000s)				
	For the lowest 1/3 income grou	0.016***	(0.005)	0.017***	(0.005)
	For the middle 1/3 income grou	-0.010	(0.011)	-0.008	(0.011)
	For the highest 1/3 income grou	-0.002	(0.002)	-0.002	(0.002)
	P-value for pre-transfer income	0.017		0.008	
Health	Health Poor			0.054	(0.037)
	CES-D			-0.009***	(0.003)
	ADL or IADL disability			-0.045	(0.038)
	Cognition score in [8, 11)			-0.029	(0.045)
	Cognition score in [0, 8)			0.001	(0.056)
	Major illness			0.010	(0.033)
	P-value for health			0.089	
Children Characteristics					
Demographics	Age	0.043***	(0.011)	0.045***	(0.011)
	Age square/100	-0.037***	(0.011)	-0.039***	(0.011)
	Oldest son	0.008	(0.035)	0.009	(0.035)
	Youngest son	0.030	(0.032)	0.032	(0.032)
	Daughter	0.016	(0.030)	0.016	(0.030)
	Married	0.086*	(0.050)	0.077	(0.049)
	# of children (age<16)	0.013	(0.011)	0.012	(0.011)
SES	*Education (Illiterates omitted)*				
	Primary	0.118***	(0.035)	0.119***	(0.035)
	Middle School	0.108**	(0.043)	0.111***	(0.043)
	High school and above	0.229***	(0.045)	0.225***	(0.044)
	P-value for SES	<0.001		<0.001	
County Dummies		Yes		Yes	
Observations		2,202		2,202	
R-squared		0.133		0.142	

Note: 1) The sample includes those who are no younger than 25 and with at least one parent no younger than 60.

2) Parent characteristics are from main respondents.

3) Clustered standard errors at family level are in parentheses.

4) *** p<0.01, ** p<0.05, * p<0.1

Table 5: OLS Analysis of Net Transfer Amount

		(1)	(2)	(3)	(4)
Parent Characteristics					
Demographics	Age	-4.397	(103.567)	12.873	(107.494)
	Age square/100	-14.772	(73.821)	-26.042	(76.321)
	Father	334.428	(206.879)	319.738	(199.056)
	Widowed	-197.960*	(117.107)	-171.012	(115.615)
	Number of children	22.342	(45.193)	16.288	(43.332)
	Zhejiang	707.374**	(336.641)	557.533*	(323.821)
	Urban	248.471	(233.937)	245.186	(239.288)
	Living with other adult children	37.868	(185.181)	68.194	(176.818)
SES	House owner	-563.412	(486.384)	-625.092	(504.109)
	Education (Illiterates omitted)				
	Less than primary education	54.473	(188.363)	0.550	(234.450)
	Primary school	82.972	(281.356)	46.336	(281.129)
	Middle school	-83.550	(242.299)	-174.869	(295.173)
	High school and above	-173.389	(427.434)	-312.513	(452.015)
	P-value for education	0.953		0.912	
	Pre-transfer income (000s)				
	For the lowest 1/3 income group	24.746*	(14.701)	22.020	(14.157)
	For the middle 1/3 income group	14.018	(53.407)	9.771	(53.486)
	For the highest 1/3 income group	-17.654**	(8.209)	-17.544**	(7.973)
	P-value for pre-transfer income	0.104		0.098	
Health	Health Poor			229.529	(159.597)
	CES-D			-3.524	(13.107)
	ADL or IADL disability			-232.873	(158.287)
	Cognition score in [8, 11)			-89.988	(420.400)
	Cognition score in [0, 8)			-235.406	(379.792)
	Major illness			49.144	(148.420)
	P-value for pre-transfer income			0.551	
Children Characteristics					
Demographics	Age	45.188	(33.500)	44.621	(33.803)
	Age square/100	-48.652	(34.362)	-47.573	(34.734)
	Oldest son	269.309	(358.486)	260.596	(351.774)
	Youngest son	13.740	(211.908)	20.508	(224.390)
	Daughter	-207.249	(126.633)	-226.639*	(133.484)
	Married	-26.839	(339.553)	-32.229	(323.768)
	# of children (age<16)	98.688	(78.154)	102.906	(78.549)
SES	*Education (Illiterates omitted)*				
	Primary	-145.349	(170.049)	-154.430	(172.322)
	Middle School	-5.779	(187.153)	-5.304	(186.350)
	High school and above	859.219***	(264.286)	839.743***	(277.622)
	P-value for SES	0.008		0.013	
County Dummies		Yes		Yes	
Observations		2,190		2,190	
R-squared		0.079		0.082	

Note: 1) The sample includes those who are no younger than 25 and with at least one parent no younger than 60.

2) Parent characteristics are from main respondents.

3) Clustered standard errors at family level are in parentheses.

4) *** p<0.01, ** p<0.05, * p<0.1

Table 6: Family Fixed Effect of Gross Transfer Probability (from Children to Parents)

Children Characteristics	(1)	(2)	(3)	(4)	(5)	(6)
	Transfer		Financial Transfer		In-kind Transfer	
Age	0.060***	(0.011)	0.026***	(0.009)	0.055***	(0.011)
Age square/100	-0.050***	(0.012)	-0.020**	(0.009)	-0.047***	(0.011)
Oldest son	-0.076**	(0.034)	-0.008	(0.031)	-0.074**	(0.032)
Youngest son	-0.002	(0.030)	0.008	(0.029)	-0.007	(0.028)
Daughter	-0.043	(0.029)	-0.035	(0.028)	0.031	(0.028)
Married	0.143***	(0.055)	0.127**	(0.054)	0.120**	(0.053)
# of children (age<16)	0.002	(0.016)	0.010	(0.013)	-0.016	(0.010)
Education (Iliterate omitted)						
Primary school	0.104***	(0.037)	0.082**	(0.032)	0.075**	(0.037)
Middle school	0.069	(0.047)	0.076*	(0.043)	0.068	(0.044)
High school and above	0.122**	(0.049)	0.140***	(0.047)	0.072	(0.048)
P-value for education	0.011		0.015		0.243	
Observations	2,068		2,068		2,068	
R-squared	0.067		0.033		0.058	

Note: 1) The sample includes those who are no younger than 25, with at least one parent no younger than 60, and at least one adult sibing who is not living with parents.

2) Clustered standard errors at family level are in parentheses.

3) *** p<0.01, ** p<0.05, * p<0.1

Table 7: Family Fixed Effect of Net Transfer Amount

Children Characteristics	(1)	(2)	(3)	(4)	(5)	(6)
	Transfer		Financial Transfer		In-kind Transfer	
Age	-31.192	(54.853)	-46.214	(53.380)	15.022*	(8.036)
Age square/100	19.621	(55.265)	36.560	(53.616)	-16.938*	(8.961)
Oldest son	539.203	(453.147)	559.623	(444.135)	-20.421	(35.361)
Youngest son	-16.693	(237.860)	-30.752	(226.217)	14.059	(48.846)
Daughter	-231.014	(141.305)	-225.758*	(124.928)	-5.256	(49.848)
Married	140.903	(228.044)	46.342	(208.387)	94.562	(62.126)
# of children (age<16)	82.852	(91.813)	81.733	(89.796)	1.119	(9.196)
Education (Iliterate						
Primary school	-143.953	(167.942)	-175.741	(160.958)	31.787	(34.413)
Middle school	-336.365	(336.321)	-362.308	(322.653)	25.943	(55.805)
High school and above	735.808	(449.759)	675.833	(435.832)	59.975	(45.856)
P-value for education	0.251		0.202		0.557	
Observations	2,059		2,059		2,059	
R-squared	0.017		0.018		0.004	

Note: 1) The sample includes those who are no younger than 25, with at least one parent no younger than 60, and at least one adult sibing who is not living with parents.

2) Clustered standard errors at family level are in parentheses.

3) *** p<0.01, ** p<0.05, * p<0.1