POPULATION ASSOCIATION OF AMERICA 2006 ANNUAL MEETING, March 30-April 1, Los Angeles.

The effects of rural-urban migration on intergenerational financial transfer in China: A gender-based perspective[*]

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March 9, 2006

[*] This work is jointly supported by National Social Science Foundation of China Grants (05ARK001 and 05CRK002), Stanford University CDEHA grant AG017253-06, and Santa Fe Institute International Program. Draft paper before publication; please do not use it as reference.

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Abstract

Rural-urban migration produces a dramatic shift from the traditional norms of female migrants, and is very likely to change the traditional pattern of old-age support in the patrilineal rural society. Using data from a survey, "Shenzhen Rural-urban Migrants", 2005, the paper analyzes the relationship between gender of married migrants and their provision of financial support to their noncoresiding parents after migration. The results show that after migration females are likely to give their parents-in-law more financial support, but both male and female migrants provide more financial support to their natal parents. This suggests that the traditional pattern of old-age support is still dominant, but out-migration of rural females tends to shrink the gender difference. The article also discusses how these findings relate to current and future problems of old-age security and son preference in rural China in relation to the process of rural-urban migration.

Key words: intergenerational transfer, migration, gender, China

BACKGROUND

Sustained low fertility and fundamental social, economic, and cultural changes since the late 1970s have resulted in the accelerated population aging in China. According to the 2000 population census, the proportion of the Chinese population aged 65 and above reached 7 percent (Lavely, 2001). Related to population aging is old-age security, an issue especially important in rural China. In rural areas, a reliable pension system with broad coverage has not been established, with only the destitute elderly, mainly childless widows and widowers covered by the limited welfare program. Recent decollectivization in rural areas has further weakened, and even eliminated this minimum safety net (Lin, 1995). In addition, income is not high enough for most rural couples to save for their old age (Yu, 1996). Only 4.67 percent of the elderly in rural China rely on their pension and about half of them depended on their children and other relatives in 2000 (Du, 2003). Accordingly, rural elders were more sensitive than those in urban areas to family support due to the sparse availability of formal support systems (Zhang et al., 2005). In short, intergenerational support is the predominant old-age support resource of the Chinese elderly (Wu, 1991; Ikels, 1997; Yao, 2001), especially in rural areas in the foreseeable future (Fang, 1992; Shi, 1993, 1994; Lin, 1995; Gu et al., 1995; Xu and Yuan, 1997).

As one of the outcomes of the Chinese economic reforms, labor migration from rural to urban areas has emerged as a prominent feature of China's demography since the mid-1980s, which accelerates the aging process in rural area, and significantly affects the lives of the rural elderly (Zhang and Li, 2004a). The economic reforms since 1978, especially the implementation of the household responsibility system in the countryside, have caused a significant rural labor surplus, and the implementation of an urban-biased and pro-coastal development policy has enabled large cities to achieve rapid economic growth. The growing industries in urban areas demand a great number of cheap laborers and attract the surplus rural labor. These rural-urban migrants,

so called “floating population” reside in cities without permanent legal status because of the household registration (*Hukou*) system (Chan and Zhang, 1999). The national family planning committee revealed recently that China's floating population rose to 140 million in 2003, from 70 million in 1993, doubling in 10 years and exceeded 10% of the national population as well as accounting for 30% of all rural laborers (www.chinanews.cn/news/2004/2005-01-06/772.shtml., 2005). Because most of the rural migrants are younger people, 51 percent below 25 years old (Du J. and Du X., 2002), the projected percentage of the Chinese population aged 65 years and older by 2050 is 16.6 and 25.0 in rural and urban areas if there were no rural-urban migration and a constant cohort mean age of childbearing, but it is reversed with rural-urban migration and an increasing cohort mean age of childbearing, 26.4 and 22.2 in rural and urban areas respectively (Zeng and Vaupel, 1989).

Economic growth and urbanization induce a relative deterioration of the economic position of the elderly in rural areas, and a weakening of the family as a social security institution (Benjamin et al., 2000). As a phenomenon of economic development, rural-urban migration tends to weaken filial obligations as it strengthens conjugal and individualistic orientations (Goode, 1963; Whyte, 2003; Whyte and Xu, 2003). The traditional family structure will be further weakened by increased commercialization and a diminished role of the collective since economic growth is usually accompanied by conjugal-oriented families and therefore tends to divert attention from the care of parents (Goode, 1963; Cowgill, 1974; Whyte, 1992; Yan, 1997). It has been proved that the large-scale labor force migration reduces opportunities for rural parents to coreside with their adult children, possibly further weakening intergenerational support patterns (Zhang and Li, 2004a, 2004b, 2005; Zhang et al., 2005).

Some research has shown that out-migration of adult children improves financial support for the elderly. Remittances by rural-urban migrants in China are much higher and more stable than in other countries, and have been the main resource of family income in rural China (Li Q., 2001). The migrants’ income plays an important role in improving the economic status of rural

families (Du, 1997). Nevertheless, based on the survey data from rural elders, researchers found that older parents in rural areas usually live alone or with grandchildren, absence of care-givers dramatically reduces provision of daily care, damages emotional well-being of the elderly, and places on them an added burden of rearing grandchildren (Du et al., 2004; Zhang and Li, 2004a, 2004b). However, there have been few studies that compare intergenerational financial transfer before and after migration from the perspective of migrant children.

Gender of children significantly affects old-age support for parents (Yang, 1996). The patrilineal family system in rural China shapes the gender-based pattern of children's support for their older parents: intergenerational exchange between parents and sons is greater than between parents and daughters; a daughter's moral obligations may continue after marriage but her formal obligations to her parents end at the time of marriage (Greenhalgh, 1985; Yang, 1996). Currently in most rural areas, there are substantial differences between sons' and daughters' support of their parents: sons are expected to provide fundamental support for their older parents, while daughters tend to provide supplementary support for their parents through emotional connection, care in daily life, and etc. This situation has been observed in a few studies of old-age support in the Mainland China and Taiwan (Freedman, 1978; Hermalin et al., 1992a, 1992b; Lee et al., 1994; Xu, 1996; Yang, 1996; Bian et al., 1998). The great demand for female labor in urban areas encourages millions of rural women to work in large cities instead of staying at home where they are subject to the traditional gender-based labor division and the patrilineal family system. The proportion of working female migrants is over 60 percent in the Pearl Delta (Tan, 2000). The acquisition of economic independence and social participation provides a dramatic shift from these female migrants' traditional norms. Studies of married migrants living in cities in various countries have found that women's social status and their power in family decision making were improved as a result of their increased participation in paid employment and other activities in the "public" sphere (Willis and Yeoh, 2000). This may change the traditional pattern of old-age support in the Chinese patrilineal rural societies. Although it has been pointed out that migrant daughters generally maintain connections with

their parents and send them remittances (Jacka, 2006), most research on intergenerational transfer from rural-urban migrants has not focused on gender differences.

This paper focuses on the relationship between gender of married migrants and their provision of financial support to their noncoresiding parents as a consequence of rural-urban migration. We assess the effects of caregivers' out-migration on old-age support for the elderly in rural areas, and how rural women's out-migration influences the traditional patrilineal pattern of old-age support. We also discuss how these findings relate to current and future problems of old-age security and son preference in rural China during the process of rural-urban migration.

DATA AND METHODS

Data

Data for this study come from a sample survey entitled "Rural-urban Migrants Survey" in Shenzhen, Guangdong province, conducted by the Institute for Population and Development Studies at Xi'an Jiaotong University in April 2005. The survey aimed to explore the impacts of rural-urban migration on migrants' attitudes and behaviors of marriage, childbearing, contraceptive use, and old age support, as well as its socio-demographic implications.

Shenzhen is one of the typical outcomes of the economic reform in China since 1979. Before then, it was a little fishing village. Because of its outstanding geographic location, located in the south of Pearl River Delta, very close to Hongkong, and its quality harbors, the government's pro-coastal economic policies gave Shenzhen a marvelous opportunity to develop. It still attracts millions of people from the interior of the country, both urban and rural residents seek opportunities in the East. Within ten years, Shenzhen became a modern city. According to the 5^{th} census in the year 2000, the population in Shenzhen was 7,008,800, and the proportion of people without household registration in Shenzhen was 82.7 percent, namely, the ratio of migrants to permanent urban residents is 4.77:1 (Yue, 2003). Since a the high proportion of enterprises in Shenzhen are private and foreign joint ventures manufacture labor-intensive

products, a great number of cheap female labor from rural areas is needed (Li, 1996). According to the data from the Shenzhen Labor Bureau, the number of laborers from rural areas to Shenzhen in 1996 is 1,290,000 and 68 percent are females (Tan, 2000). Both proportions of rural-urban migrants and female migrants in Shenzhen are the greatest in China. Thus, Shenzhen provides an excellent location for the study of influences of migration and gender on intergenerational transfer.

A structured household questionnaire and a structured community questionnaire were used in the survey. The samples from the survey are all rural-urban migrants without permanent legal status despite long residence in the city. All the respondents were over 15 years old and are divided into two categories: Concentrated residents, usually workers who work together and live in the same building or dormitory, and Scattered residents, who are the neighbors of both temporary rural migrants and permanent urban residents with local household registration. Cluster sampling was used to select "Concentrated residents". To represent the overall characteristics of rural migrant workers in Shenzhen, we selected 3 manufacturing companies where the employees are almost all females and 2 construction sites where the employees are almost all males. Thus, 368 females and 183 males were selected as concentrated residents, and the percentage of female workers is 66.8, approximately the same with the figure in 1996 (Tan, 2000). To investigate attitudes and behaviors of marriage, childbearing and old-age support, we over-sampled "Scattered residents" considering that "Scattered residents" are usually older and married whereas most of "Concentrated residents" in Shenzhen are unmarried females. Systematic sampling was used to select "Scattered residents", and 1,188 rural migrants from 5 communities in 3 districts were chosen. As a result, the sex ratio for the whole samples is balanced (104.5) though the same figure for the overall population in Shenzhen is relatively low according to the 2000 census (97.19). The number of satisfactory responses is 1,739. Preliminary analysis reveals that the quality of data from this survey is quite satisfactory and reliable. A detailed description of the survey background, sampling design, contents, implementation, and data quality is given in the survey report (*Research Report*, 2005).

The survey provides substantial data about intergenerational financial transfer before and after migration, as well as socio-demographic information about adult children and their parents. In the survey, each respondent was asked questions about whether they gave financial help, as well as the amount of financial help given to their parents in the past 12 months. The same questions and measurements were also used to ask each respondent to report whether and how much financial help they received from their parents in the past 12 months. Every married respondent was also required to provide information about their intergenerational financial transfer between them and their parents-in-law in the past 12 months. Financial help is measured in quantity (both in cash and in kind).

Methods

To compare the role of migrants' gender in providing financial help to both their natal parents and parents-in-law, the financial help to parents and parents-in-law is analyzed separately. In order to analyze the effect of out-migration of married children on their financial support to parents and parents-in-law, we restrict samples used in our study to those children who were married before their migration. Due to the fact that most of female "Concentrated residents" are unmarried, samples in this study generally come from "Scattered residents" and 2 construction sites. Although most of rural migrants left their parents in their rural hometown, we also restrict samples to those children who did not coreside with their parents when the survey was conducted, since married children coresiding with their parents and sharing the same household economy with their parents would automatically provide economic help to their elderly parents in rural China (Li et al., 2004).

Measurement

The questions about intergenerational financial flow produce two measures of old-age support provided by children for their parents. The first is the gross help that children provide for their parents, in which only upward flow from children to parents is considered while downward flow from parents to children is ignored. The second measures the net help that children

provide for their parents, in which both upward and downward flows between children and parents are considered. If the upward flow from children to parents is larger than the downward flow from parents to children, then children have provided net support for parents. Otherwise, children have not provided net support for parents. The net amount of financial help from children to parents is the difference between what children gave and what children received from parents.

Dependent Variables and Models

In order to study the change in financial support for older parents before and after migration, we define two categories of dependent variables. The first is children's likelihood of increasing the amount of gross and net financial help to their parents after migration, which is treated as a dichotomous variable: with 1 as "yes" and 0 as "no". The second is the amount of financial help that children give to their parents after migration.

We employ a logistic model to analyze children's likelihood of increasing the amount of gross and net financial help to parents and parents-in-law after migration, and use OLS to analyze the amount of gross and net financial support from children to parents and parents-in-law after migration. Accordingly, there are 4 models to analyze the likelihood of increasing the amount of gross and net financial help to parents and parents-in-law and 4 models to analyze the actual amount of gross and net financial support from children to parents and parents-in-law. The same independent and control variables are included in each model, as shown in Table 1. It should be noted that parents' characteristics refer to natal parent in the models to analyze financial help given to parents and refer to parents-in-law in the models to analyze financial help given to parents-in-law.

Independent Variables

The independent variable is migrant children's gender. Because of the patrilineal family system, only sons have the formal responsibility to provide old age support to their parents.

Consequently, we hypothesized the likelihood of increasing financial help and the actual amount of financial help given by female migrants would differ greatly from those given by male migrants.

Control Variables

Control variables include children's migration experience, individual characteristics of migrant children and their parents. The inclusion of these variables is an attempt to accurately measure the effects of children's gender on their financial support for parents.

It has been proved that the longer the duration of out-migration, the higher the income of rural families (Li Q., 2001). Accordingly, the variables for children's migration experience include "years since first out-migration" and "times back home per year". "Years since first out-migration" indicates the duration of out-migration. Frequent returns to their rural hometown could give migrants more opportunities to provide parents housework, agricultural and emotional support, which might reduce their financial help to parents.

The variables for children's individual characteristics include their age, education, number of offspring, whether living with spouse, income, spouse's income, whether provide financial help to other set of parents. Years of education represents their social and economic status, ability to support parents, as well as early parental investment in children. Number of offspring indicates the family burden the migrant has because childrearing is usually the main part of family expenditure. Individual's and spouse's income build the migrant's family income, indicating the bargaining power to support natal parents. Number of offspring and income represent the scope of resources available to support elderly parents. Whether children provide financial help to the other set of parents reflects the pattern of family support for the two sets of parents under the patrilineal family system. Except for number of offspring, all of these variables are treated as categorical.

The variables for parents' characteristics include spouse's survival status, age, physical health status, whether coresiding with individual's children, whether coresiding with individual's married siblings, main source of income (whether depending on children financially), whether providing financial help to children after children's migration. Age refers to the one who was older than his or her spouse, and physical health status refers to the one who was weaker than his or her spouse. Physical health status and main source of income indicate parents' potential need for various forms of help. Whether parents coreside with individual's married siblings indicates their family structure and availability of help from nearby children. Coresiding with individual's children indicates that parents can provide childcare to migrants. Parents' giving migrant children financial help reflects reciprocity in their intergenerational exchange with children. All variables for parents' individual characteristics are treated as categorical. Note that in the survey, most variables concern the joint situation of children's parents, but age and abilities to do housework and agricultural fieldwork concerns both parents of the husband and of the wife. We use age of the older parent as representative of both parents, and use the parent with weaker abilities to do housework and agricultural fieldwork as representative of both parents. This allows us to reflect as well as possible parental needs for various forms of help.

In our analyses, we first exclude children who are unmarried, or married after their first out-migration. Then, we exclude children who are coresiding with their parents when the survey was conducted. Finally, we exclude children with incomplete information for the variables involved in the models. As a result, the number of children eventually used in the models is 422.

The statistical information about dependent, independent and control variables is shown in Table 1. After migration, about 60 percent of samples give more financial help to their parents but only about 50 percent of samples give more financial help to their parents-in-law. The proportion of male and female migrants is 60 and 40 percent, respectively. About 55 percent of the whole sample migrated from their hometown over 5 years ago, and 52 percent of them return home once a year and about 30 percent do not go back during one year. Most of the

samples are over 30 years old and were educated in junior high school. On average, each migrant has 1.57 offspring. 73.5 percent of the respondents are living with their spouses, 59.8 for males and 83.9 for females. The proportion of income below 800 yuan is lower for respondents than for their spouses, which is due to the higher proportion of male migrants and the fact that rural male migrants still earn more money than females. Most of elderly relatives remaining in their rural hometowns are 60 years old and above, almost 70 and 60 percent for parents and parents-in-law. Because they are relatively young, only about 30 percent of them are widowed and almost all of them have not lost their ability to conduct routine activities of daily living. A majority of elder relatives do not live with respondents' children and over half of these elderly relatives do not live with respondents' married siblings. Over half of parents and parents-in-law mainly rely on children, and most of them have not given financial help to migrant children in the past 12 months. These profiles of migrant children and their parents in the survey sites are important in interpreting our results.

Table 1 here

RESULTS

Changes in amount of financial help after migration

Table 2 provides a comparison of mean amount of financial help before and after migration. The result shows that females increase the financial help to both their parents and parents-in-law after migration, whereas, males only increase amount of financial help to their parents and their mean amount of financial help decreases slightly after migration. Table 3 provides the mean increment of financial help after migration. Gender difference is significant in the mean increment of financial help to parents-in-law, but not significant in that to parents. Unlike female migrants, male migrants decrease the financial help to their parents-in-law after migration. Thus, female migrants increase their financial help to two sets of parents while male migrants only increase the financial help to their natal parents.

Table 2 & 3 here

Table 2 also shows the difference in financial help given to parents and parents-in-law. For male migrants, the mean amount of financial help before migration is higher for their parents-in-law than for their natal parents, but this reverses after migration: the net help to male migrants' parents-in-law before migration is 1.57 times that given to their natal parents, but the same figure after migration turns to be 0.47. For female migrants, the mean amount of financial help is always much higher for their parents-in-law than for their natal parents before and after migration. However, this difference tends to be weakened after migration: the net help to female migrants' parents-in-law is 1.94 times that given to their natal parents before migration, and but after migration it declines to 1.51.

Likelihood of increasing the amount of financial support after migration

Table 4 shows the odd ratios from logistic regression for the likelihood of increasing the amount of financial support after migration. Consistent with the results of Table 2-3, gender of the migrants significantly affects the financial help given to parents-in-law but does not affect the financial help given to parents. Compared with male migrants, female migrants are more likely to increase the amount of financial support to their parents-in-law after migration.

Migration experience has a significant effect on the likelihood of increasing the amount of financial support to parents, but it has no effect on that to parents-in-law. Longer duration of out-migration helps to raise the likelihood of increasing the amount of financial support to parents, but there is no linear relationship between the duration of out-migration and the likelihood. Compared with migrants who are away from rural hometown no more than one year, the likelihood of increasing gross and net financial help to parents is 6.27 and 5.26 times for those who left their rural hometown 5-7 years ago, but only 4.90 and 4.35 times for those who left over 7 years ago.

Some of the migrants' individual characteristics have significant effects. Age has a negative effect on the likelihood of increasing net financial help to parents: the older the migrants, the less likely they are to increase net financial help. Income has a positive effect on the likelihood of increasing gross and net financial help to parents, but it is not a linear relationship. Compared with migrants having the lowest income level, only those with median income level (1001-1500 yuan per month) are more likely to increase their net financial help to parents. Giving financial help to parents-in-law increases the likelihood of increasing the amount of financial support to natal parents, and vice versa.

As for parents' characteristics, physical health status, living arrangements, main financial source, and whether they provide financial help to migrant children have significant effects on the likelihood of increasing financial help. Living with respondent's children has a positive effect on the likelihood of increasing gross financial help to parents-in-law. Main source of income from children has a positive effect on the likelihood of increasing both gross and net financial help to parents. Giving financial help to the migrant child has a negative effect on the likelihood of increasing gross financial help to parents.

Table 4 here

In summary, after controlling for migration experience, migrants' and parents' characteristics, migrants' gender has significant effects on their likelihood of increasing the amount of financial help to parents-in-law. Compared with male migrants, female migrants are more likely to increase the amount of financial help for their parents-in-law. However, no significant difference is found in the likelihood of increasing the amount of financial help to parents between male and female migrants.

Actual amount of financial support after migration

Table 5 shows the estimates of OLS regression for the actual amount of financial support after migration. Again, gender of the migrants significantly affects the actual amount of financial help given to parents-in-law but does not affect the actual amount of financial help given to parents. There is no gender difference in the actual amount of financial support to natal parents. However, compared with male migrants, female migrants give more financial support to their parents-in-law after migration.

Migration experience has no significant effect on the actual amount of financial help to parents and parents-in-law. Some migrants' individual characteristics have significant effects. Education level, income and spouse's income, and giving financial help to the other set of parents have positive effects on actual amount of financial help. The higher the education level, the more the financial help given to parents. Greater migrants' income significantly increases the actual amount of financial help to their parents, and greater their spouse's income significantly increases the actual amount of financial help to their parents-in-law. That is, income only affects the amount of financial help to natal parents. Giving financial help to parents-in-law significantly increases the actual amount of financial help to parents. Cohabitation has a negative effect on the actual amount of financial help. Those whose spouses remain in their rural hometown give less financial help to parents.

As to parents' characteristics, parental living status, living arrangements, main financial source, and whether they provide financial help to migrant children have significant effects on the actual amount of financial help. Compared with those whose parents are both alive, those with only a father alive give less financial help. Parents and parents-in-law living with respondent's children have positive effects on the actual amount of financial help received. The actual amount of financial help increases when natal parents' main source of income is from children. Unlike the effect on the likelihood of increasing amount of financial help, giving financial help to the migrant child has a positive effect on actual amount of gross financial help to parents-in-law.

Table 5 here

In summary, after controlling for migration experience, migrants' and parents' characteristics, migrants' gender has significant effects on the actual amount of financial help to parents-in-law. Female migrants give more financial help to their parents-in-law. In other words, the elderly remaining in rural areas receive more financial help from their daughters-in-law than from their sons-in-law. There is no significant difference in the actual amount of financial help to parents between male and female migrants.

CONCLUSION

Our study site, Shenzhen, is a well developed coastal city in south China, with the highest proportions of rural and female migrants in China. Thus, it provides an excellent place to investigate intergenerational exchange between migrant children of both sexes and their parents and parents-in-law remaining in rural hometown. These data allow us to study the impact of migrant children's gender on their provision of financial support for parents, and to explore implications of these findings for the current and future Chinese society of rural and urban areas. In sum, our study of migrant children's old-age support for their non-coresiding parents in Shenzhen reveals the following.

Children's gender has significant influence on both their likelihood of increasing the amount of gross and net financial help and the actual amount of financial help to their parents-in-law after migration, but no significant influence on those to natal parents. In other words, both male and female migrants provide more financial support to their natal parents after migration, but female migrants are likely to give their parents-in-law more financial support. It indicates that the traditional patrilineal pattern of old-age support is still dominant in rural society, but out-migration of rural females tends to shrink the gender difference in terms of old-age support. The original strongly male-biased pattern of old-age support is likely to be influenced by

increasing income of female migrants and the host city's modern culture, which will have ramifications later for eldercare and gender issues.

The earlier the children's migration, the higher their likelihood of increasing the amount of gross and net financial help to their natal parents after their migration, which is consistent with previous findings (Li Q., 2001). However, migration experience of children has no significant effect on the actual amount of financial help to both sets of parents after migration. Thus, earlier out-migration of adult children helps to increase the probability of parents' receiving more financial help but not the actual amount of financial help, possibly because the financial demands of older parents in rural China is usually quite limited.

Education level and income of migrant children have positive effects on the actual amount of financial help to their natal parents, and income of migrant children's spouse also has a positive effect on the actual amount of financial help to the spouse's parents. Those whose spouses are also living in cities give less financial help to their natal parents because the total expense of a couple living together in cities is much higher. Giving financial help to their parents-in-law increases the likelihood of increasing the amount of financial support to natal parents after migration, and giving financial help to natal parents also increases the likelihood of increasing the amount of financial support to parents-in-law. Thus the probability of receiving financial help from migrant children is basically balanced between two sets of parents.

Parents' coresiding with migrants' children provide care for their grandchildren. Coresiding with migrants' children significantly increases the actual amount of financial help the parents and parents-in-law receive from these migrants. Accordingly, the intergenerational transfer between rural-urban migrants and their parents and parents-in-law is basically reciprocal.

Our study has some limitations. First, the survey of "Shenzhen Rural-Urban Migrants" in 2005 is not a survey specifically designed to study all aspects of older people's life in rural China. As a result, some factors that may affect children's intergenerational financial transfer with parents may not be represented in our survey, such as the impacts of other forms of old-age support.

Second, because over 70 percent of migrant children are below 40 years old, their parents remaining in rural hometown are not very old. Therefore, the analysis of their intergenerational transfer refers to younger children and parents, and those between older migrant children and parents needs further study. Third, the measure of intergenerational financial transfer is based only on self-reports from children, not from both children and parents. This may produce bias against parents and underestimate downward flow from parents to children while overestimating children's likelihood of providing help to parents.

The conclusions in this paper concerning financial support of migrant children for their parents and parents-in-law remaining in rural areas are based on observations in Shenzhen which is a developed coastal city with a high prevalence of rural-urban migrants. Some features of the city, such as geographic location, structure of industries, local culture and regulations, composition of outflow regions, might also affect the intergenerational financial transfer between migrant children and parents. Therefore, these observations might not be valid in other urban areas. In spite of this, our findings have potential implications for the current and future population and social development of rural China.

While the sustained low fertility in rural China accelerates population aging, rapid increase in the proportion of no-son families seriously challenges the traditional model of family support for the elderly that relies fundamentally on sons. Further, low fertility and the concomitant demand for old-age security intensifies the son preference in rural China and decreases the survival rates of female children as evidenced by a high sex ratio at birth and excess girl child mortality (Das Gupta and Li, 1999; Li and Zhu, 2001). These would affect improvement of women's status and the sex balance in future marriage markets (Tuljapurkar et al., 1995), which inevitably affects long term and sustainable development of rural population and society (Das Gupta and Li, 1999). It has been proved that the traditional old-age support pattern of reliance on sons has disappeared in urban China: aging parents are as much or more likely to rely on married daughters as on married sons, and in several realms daughters provide significantly more assistance (Whyte and Xu, 2003). Other research also reveals that most sons and

daughters in urban China gave financial support to their parents regularly (Yu et al., 1990). As a form of urbanization and modernization, rural-urban migration plays an important role in reducing the difference of old age support pattern between rural and urban areas. Although our analysis reveals that the traditional patrilineal pattern of old-age support is still dominant in rural society, out-migration of rural females helps to weaken the gender difference in old-age support. Thus, with increasing rural-urban migration and the proportion of no-son families increasing in rural areas caused by "one child policy", the traditional patrilineal pattern of old-age support could be weakened and possibly even eliminated, as has happened in urban China (Yu et al., 1990; Whyte and Xu, 2003). Therefore, out-migration of rural women on a large scale might help to resolve problems related to old-age security and son preference in rural China.

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Table 1 Descriptive Statistics of Regressions

Variables	To Parents	To Parents-in-law
Dependent Variables		
Give more gross financial help	.585	.493
Give more net financial help	.633	.510
Actual amount of financial gross help after migration	1467.626	1313.467
Actual amount of financial net help after migration	1315.469	1154.865
Independent Variables		
Gender (Male)	.603	.603
Female	.398	.398
Migration experience		
Years since first out-migration: (0-1)	.055	.055
1-5	.393	.393
5-7	.190	.190
7^{+}	.363	.363
Times back home per year: (0)	.292	.292
1	.519	.519
2+	.190	.190
Individual Characteristics		
Age: (29^{-})	.126	.126
30-39	.602	.602
40^{+}	.273	.273
Education: (Elementary school and lower)	.183	.183
Junior high school	.583	.583
Senior high school and above	.235	.235
Number of offspring	1.569	1.569
Spouse living in hometown: (No)	.735	.735
Yes	.265	.265
Income: (800^{-})	.308	.308
801-1000	.204	.204
1001-1500	.242	.242
1501+	.246	.246
Spouse's income: (800^{-})	.514	.514
801-1000	.145	.145
1001-1500	.114	.114
1501+	.228	.228
Current financial help to the other set of parents: (No)	.133	.102
Yes	.867	.898
Parents' characteristics		
Parent alive: (Both alive)	.685	.666
Only father alive	.102	.092
Only mother alive	.213	.242
Age: (59^{-})	.322	.403
60-69	.372	.356
70^{+}	.306	.242
Physical status: (Cannot take care themselves)	.057	.036
Can take care themselves	.228	.239
Can do homework only	.367	.363
Can do agricultural fieldwork	.348	.363
Coresiding with respondent's children: (No)	.659	.751
Yes	.341	.249
Coresiding with respondent's married siblings: (No)	.637	.547
Yes	.363	.453
Main source of income from children: (No)	.467	.453
Yes	.533	.547
Financial help to migrant child after migration: (No)	.829	.827
Yes	.171	.173

Table 2 Comparison of mean amount of financial help before and after migration (yuan)

	Samples	To parents			To parents-in-law		
		Before migration	After migration	T test	Before migration	After migration	T test
Gross help							
Male	254	843.58	1516.69	***	860.59	732.09	ns
Female	168	745.54	1393.45	***	1131.98	2192.45	***
Net help							
Male	254	458.82	1327.87	***	720.39	625.83	ns
Female	168	453.04	1296.73	***	878.64	1954.72	***

Table 3 Comparison of mean increment of financial help after migration by gender (yuan)

	Gender	Samples	Mean	T test
increment of gross help to parents	Male	254	673.10	Ns
	Female	168	647.92	
increment of gross help to parents-in-law	Male	254	-128.50	*
	Female	168	1060.48	
increment of net help to parents	Male	254	869.05	Ns
	Female	168	843.69	
increment of net help to parents-in-law	Male	254	-94.57	*
	Female	168	1076.08	

Table 4 Odd ratios of logistic regression for likelihood of increasing the amount of financial support to parents after migration

Variables	Gross help		Net help	
	Parents	**Parents-in-law**	**Parents**	**Parents-in-law**
Gender				
Female(Male)	1.023	2.044*	.984	1.745+
Migration experience				
Years since first out-migration: (0-1)				
1-5	2.165	1.279	2.032	1.631
5-7	6.274**	1.468	5.264**	1.418
7^{+}	4.904**	2.393	4.345**	2.158
Times back home per year: (0)				
1	1.058	.853	1.023	.689
2+	1.080	.979	1.295	.898
Individual Characteristics				
Age: (29^{-})				
30-39	.739	1.268	.518+	1.336
40^{+}	.459	.999	.271**	.887
Education: (Elementary school and lower)				
Junior high school	.843	.867	1.018	.848
Senior high school and above	.617	.661	.732	.866
Number of offspring	.783	.839	.835	.967
Spouse living in hometown: (No)				
Yes	.823	.960	.732	.980
Income: (800^{-})				
801-1000	1.014	.990	.911	.966
1001-1500	2.098*	1.344	1.945+	1.219
1501+	1.332	.944	1.400	.823
Spouse's income: (800^{-})				
801-1000	.869	1.322	.927	1.262
1001-1500	.640	.979	.631	.825
1501+	.686	.558	.648	.694
Current financial help to the other set of parents: (No)				
Yes	2.353*	4.003**	1.831+	3.900**
Parents' characteristics				
Parent alive: (Both alive)				
Only father alive	.574	1.083	.534	1.095
Only mother alive	1.104	.701	.796	.710
Age: (59^{-})				
60-69	.898	.824	1.195	.900
70^{+}	1.104	1.600	1.129	1.584
Physical status: (Cannot take care themselves)				
Can take care themselves	1.601	1.173	1.634	1.002
Can do homework only	2.481+	1.030	2.200	.798
Can do agricultural fieldwork	2.618+	.694	1.978	.632
Coresiding with respondent's children: (No)				
Yes	1.485	1.855*	1.275	1.484
Coresiding with respondent's married siblings: (No)				
Yes	1.362	1.280	1.406	1.400
Main source of income from children: (No)				
Yes	1.635+	.807	1.902*	.915
Financial help to migrant child after migration: (No)				
Yes	.594+	1.147	/	/
-2LL	511.07**	520.33***	497.67**	534.14**
Samples	**422**			

Table 5 Estimates of OLS regression for actual amount of financial support after migration

Variables	Gross help		Net help	
	Parents	**Parents-in-law**	**Parents**	**Parents-in-law**
Gender				
Female(Male)	-.019	.261***	.007	.291***
Migration experience				
Years since first out-migration: (0-1)				
1-5	.160	.015	.104	.000
5-7	.128	-.033	.085	-.048
7^{+}	.075	-.030	.036	-.028
Times back home per year: (0)				
1	-.071	-.046	-.079	-.030
2+	-.023	.010	-.052	.021
Individual Characteristics				
Age: (29^{-})				
30-39	-.033	.006	.028	.036
40^{+}	-.104	-.106	-.045	-.079
Education: (Elementary school and lower)				
Junior high school	.140*	.010	.150*	.085
Senior high school and above	.184**	.012	.165*	.087
Number of offspring	.054	.038	.069	.018
Spouse living in hometown: (No)				
Yes	-.116*	.097+	-.136*	.051
Income: (800^{-})				
801-1000	.102+	.007	.048	.010
1001-1500	.057	.027	.052	.008
1501+	.245***	.074	.209**	.063
Spouse's income: (800^{-})				
801-1000	.018	.114*	.007	.082
1001-1500	.013	.172**	.015	.107*
1501+	-.026	.107+	-.029	.090
Current financial help to the other set of parents: (No)				
Yes	.144**	.064	.122*	.061
Parents' characteristics				
Parent alive: (Both alive)				
Only father alive	-.119*	-.017	-.115*	-.024
Only mother alive	-.071	-.046	-.054	-.092+
Age: (59^{-})				
60-69	.006	.008	-.005	-.001
70^{+}	-.030	.070	-.071	.083
Physical status: (Cannot take care themselves)				
Can take care themselves	.102	.074	.119	.117
Can do homework only	.080	.068	.066	.085
Can do agricultural fieldwork	.187+	-.049	.166	-.004
Coresiding with respondent's children: (No)				
Yes	.203***	.194***	.156**	.157**
Coresiding with respondent's married siblings: (No)				
Yes	-.013	-.033	-.015	-.057
Main source of income from children: (No)				
Yes	.191***	.036	.198***	.100+
Financial help to migrant child after migration: (No)				
Yes	.022	.125**		
R^2	.237***	.289***	.191***	.259***
Samples	**422**			