PAA, 2010 Annual Meeting

Out-migration of Young Adults and Gender Division of Intergenerational Support in Rural China

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Abstract: Using data from the baseline and follow-up surveys of "Well-being of Elderly in Anhui Province, China" conducted in 2001, in 2003 and in 2006 respectively by the Institute for Population and Development Studies of Xi'an Jiaotong University, this paper employs random effect models to explore the gender division of intergenerational support in elderly rural families. Analyses from both parents' and children's perspectives suggests there are gender differences in intergenerational support because of gender roles and division in family. Our analysis shows that older mothers receive more returns which compensate for their support, while older fathers benefit more from the out-migration of adult children. While sons take more responsibility for family support, daughters reciprocate more to support from their elderly parents. Enhancement of the role and function of daughters in families has accompanied out-migration of young adults, which suggests that gender differences in intergenerational supports between sons and daughters are reduced.

Key Words: *gender; intergenerational support; out-migration; grandchild-care*

Introduction

The patriarchal family system characterized as patriarchal, patrilineal, and patrilocal had a profound influence on Chinese society. The core value of the Chinese family system is filial piety, the idea that adult children have both the moral and legal obligation to support their elderly parents (Whyte 2004; Whyte and Xu 2003). In particular, essential support is clearly expected from sons rather than from daughters in a traditional family (Yang 1996). Therefore large gender differences in the family support of older parents in Chinese families should be expected.

According to Greenhalgh (1985)'s characterization of the Chinese patriarchal family system, the status and roles of children in the family vary systematically by the gender of children. Sons are permanent members of their natal family and retain lifetime contractual relationships with their parents. In contrast, daughters are only temporary members of the family, whose contracts last only until their marriage, when they move and begin to contribute to the families of their parents-in-law. Although daughters are expected to contribute to their natal families before marriage, married women are not expected to contribute family support for their aged parents (Greenhalgh 1985; Yang 1996; Das Gupta and Li 1999). Thus parents' long-term well-being depends crucially on their sons. On the other hand, the parent-child contracts also vary by the gender of the parent, from the perspective of a parent. As women have less access to economic resources for most of their lives, they tend to need more support in their old age (Nugent 1988).

The Chinese family may have undergone major transformations as a result of

economic development and social transition, and this stylized description of the family may no longer apply in contemporary Chinese society (e.g., Thornton and Lin 1994; Whyte 2004). These transformations include a great number of young workers migrating out of rural areas, a reduction in the size and complexity of the household, a shift from the traditional extended family to the nuclear family, and a decline in social resources available to older people (Goode 1970). Younger people who migrate to urban areas might have their traditional notions gradually altered by modern culture in ways that weaken their traditional obligations to provide family support, erode the authority of older generations, and produce greater equality between the generations (Lai 1995; Yuan 1987). Thus, the shifts concomitant with out-migration of young workers might be expected to influence the support behaviors and patterns of intergenerational support in family.

There have been several studies combining family support and out-migration of the labor force in rural China (e.g., Du and Du 2002; Zhang et al. 2007). Support behaviors between older parents and adult children may be evolving towards more equality between the two generations, neither of which can force the other to conform to its own rules. Thus it is necessary to examine the support situation from both parents' and children's perspectives. Estimates of intergenerational supports are seldom reported as identical from these two perspectives, except for a study based on data from Baoding (Sun 2002) and a study of Chinese rural families by Zhang (2004), both of which support the corporate group/mutual aid model from both parents' and children's perspectives. However, few studies have addressed systematically the

division by gender of intergenerational support among older parents and adult children. The purpose of this study is to examine the gender division of intergenerational support from both parents' and children's perspectives in the presence of out-migration of the labor force in rural China. We study gender division within a generation (adult son–adult daughter) and gender division between generations (older parent–adult children).

Research Framework

Intergenerational Support

In an early study on intergenerational support, the relationship between parent and children was viewed in terms of exchanges of rights and duties, or obligations and counter obligations, by different family members (Cohen 1976). While this revealed the exchange nature of parent-child resource flows, it told us little about the timing and nothing about the precise levels of flows between different family members (Greenhalgh 1985). Three (idealized) forms of exchange--balanced, generalized, and negative--were recognized by Sahlins (1972). In addition to these distinctions, Greenhalgh (1985) also distinguished between high-flow and low-flow contracts, depending on the share of total family resources that is exchanged between the parties to the contract. Those between parents and sons are higher flow contracts that approximate serial reciprocity, requiring a counter obligation or repayment later. On the other hand, contracts between parents and daughters are lower flow contracts with more equitable reciprocity, in which one thing is exchanged for another of equivalent

value with little delay (Greenhalgh 1985). While distinguishing the forms of intergenerational transfers, these studies did not explain the motivations behind and rules governing intergenerational transfers.

Three groups of theories of the family are relevant to the issue of intergenerational support; the power and bargaining model, the mutual aid model and the altruism/corporate group model, all of which demonstrate the exchange dynamics between older and younger generations in the family. Different from the power and bargaining model, which is determined by a "sharing rule" in which the amount that each member receives is an increasing function of his or her bargaining power (Chiappori 1992; Lee et al. 1994), the mutual aid model specifies that transfers between generations are made as needs in each generation arise, with the family functioning as an insurance policy (Frankenberg et al. 2002; Lee et al. 1994), while the corporate group model focuses on the criteria with which strategic investments are made to optimize collective and personal well-being (Becker 1991). Most studies on China indicate that the altruism/corporate group model best describes intergenerational transfers in Chinese families (Lee et al. 1994; Shi 1993; Song 2008; Sun 2002; Zhang and Li 2004). Zhang (2004) specifies the traditional corporate model put forward by western scholars, combining the empirical research results from foreign countries and domestic contexts in China. And altruism and son preference are distinguishing characteristics of the elderly in specified model, which is different from traditional corporate model.

Gender Patterns

From the parents' perspective, out-migration of adult children involves not only an increase in economic income and improvement of the family's economic status (Du et al. 2002), but also large geographic distances which reduce the probability of instrumental assistance (Zimmer and Kwong 2003). Thus children whose instrumental support is unreliable (because of distance) are more likely than other siblings to offer financial help to their parents (Sun 2002). Moreover, a traditional role for women is that they are the kinkeepers in the family (Zhang 2001), while financial incentives induce men to provide support (Silverstein et al. 1995). It might be inferred that out-migration of adult children would influence financial support received by older fathers and instrumental assistance between older mothers and their adult children.

On the other hand, as the traditional role of kinkeepers in the family integrates women into the family by maintaining contact with extended kin and by caring for the family's most vulnerable members (Coward and Dwyer 1990; Spitze and Logan 1990), older women have an advantage in intergenerational relationships, receiving more supports from their children (especially sons) (Ghuman and Ofstedal 2004). Yang (1996) found that older mothers, but not older fathers, receive greater monetary support from children when they both engage in child-care activities, suggesting that care through the paternal line, though more normative, may be based on the corporate group principle; that is, the most needy person receives the most supports.

From the children' perspective, since sons are long-term members of the family, parents invest as much as they can in their sons in order to increase the latter's ability

to provide for the former in the future. Especially when economic opportunities are brighter elsewhere, parents might encourage sons to leave and find a more promising line of work. Thus investing in a child is a long-term strategy for reducing uncertainty about old age support, while taking care of grandchildren so that adult children can obtain better wages is a shorter-term strategy to reach the same goal (Silverstein 2007). Since day-care in rural areas of China is scarce, older parents become valuable resources to families (Chen et al. 2000). As the transfers between parents and daughters are balanced, with one thing exchanged for another of equivalent value with little delay, daughters might be expected to return more financial support for grandchild-care from their older parents than sons.

The corporate group arrangement is also reflected in the relationship between living arrangements and the form of support. The choice of living arrangement is based on the needs of older parents rather than of children (Logan et al. 1998), and older people co-resident with their children are more likely to receive more support and assistance. Chi's (1996) study shows that in Hong Kong, co-residence is more important for the elderly to receive help with care than with financial support. Due to the "son preference" of the patrilineal family system, co-residence, especially with sons confirms the children's responsibility for support of their aged parents, and hence increases intergenerational transfers and family cohesion.

The role of children's gender in providing support can also fit into the corporate model. In rural areas of China, sons are expected to take the main responsibility for supporting parents in their old age, while daughters are more likely to provide

assistance to parents with routine activities or emotional support (Lee et al. 1994; Yang 1996; Sun 2002). With the change of career, economic status and expectation after out-migration, and the increase in the cost of time needed to provide service assistance, the division of intergenerational support should be adjusted among siblings to optimize the distribution of family resources, according to their relative external resources and the absolute cost of providing support (e.g., time, space, and money) (Song and Li 2008). Therefore, according to models for the family division of labor (Finley 1989), we analyze the effect factors on gender division of intergenerational support from the external-resources hypothesis, the time-available hypothesis, and the socialization/ideology hypothesis. The time-available hypothesis proposes that competing time and role demands determine the time available for tasks related to the family. If this hypothesis were true, it would be expected that for males more than for females competing demands on their time would leave little time for the family and that, consequently, males would do less to satisfy the needs of older parents. The socialization/ideology hypothesis, which suggests that gender-role attitudes learned in the socialization process influence the division of family, is difficult to be measured exactly by the abstract concept of gender ideology, and the surrogate variable--the level of education--is usually substituted, with a higher education indicating a weaker traditional gender ideology. In contrast, the external-resources hypothesis, which asserts that the relative resources obtained externally determine power dynamics in the family and, consequently, the division of family, particularly emphasizes the structural resources (that is the relative resources, e.g. the relative level of education),

which considered in comparison with other family members. However, as the social and economic status of migrant women improve, the traditional pattern of old-age support in the Chinese patrilineal rural societies may change as the traditional gender division of labor becomes less strict.

Hypotheses To Be Tested

In light of existing theories and earlier studies, the corporate group model still best portrays intergenerational transfers in Chinese elderly families, but gender division should be considered. From the parents' perspective, older mothers depend more on their children than do older fathers, and lose more when children migrate away. However, according the corporate group principle, older mothers should expect more returns for providing support to their children than older fathers. From the children's perspective, sons play a more important role in essential support of their parents, while daughters return more to reciprocate their parents' support of them. However, out-migration would reduce the gender division of children. Six testable hypotheses are developed from older parents' and children's perspectives, respectively:

From older parents' perspective on gender division:

Hypothesis 1: Older fathers with children who migrate away are more likely to receive increased financial support than older mothers whose children migrated, and older mothers whose children migrated are less likely to receive increased instrumental support than older fathers whose children migrate away.

Hypothesis 2: Older mothers who provide more grandchild-care are more likely

to receive increased financial support than older fathers.

Hypothesis 3: Older mothers who continue to live with their grandchildren (not children) are more likely to receive increased financial support than older fathers who continue to live with their grandchildren.

From adult children's perspective on gender division:

Hypothesis 4: Migrant daughters are more likely to provide increased financial support than migrant sons, and are less likely to provide increased instrumental support and emotional support than migrant sons.

Hypothesis 5: Daughters who receive more grandchild-care are more likely to provide increased financial support than sons.

Hypothesis 6: Sons who moved to live with older parents are more likely to increase intergenerational transfers than daughters in the same position.

Methods

Data

Data for this study derived from the three waves of the survey "Well-being of Elderly Survey in Anhui Province", which was carried out in 2001, 2003 and 2006 by the Institute for Population and Development Studies of Xi'an Jiaotong University, in conjunction with the University of Southern California. The survey location, Anhui Province, was chosen specifically for its relatively high density of older adults and high levels of out-migration of working age adults (Chaohu Statistical Bureau 2001). A stratified multistage method was used to select potential respondents within 12

randomly selected rural townships, from each of which six villages were randomly selected. The respondents were identified from all residents aged 60 and older with a small proportionate over-sampling of people 75 years of age and older. Of 1,800 individuals identified as eligible respondents, 1,715 completed the survey in 2001, a response rate of 95.3%. 1,391 respondents completed the follow-up survey in 2003, and 1,067 respondents were re-interviewed in 2006.

During the two survey intervals after the baseline survey, the physical and psychological health, socio-economic status and living arrangements of the older people, as well as the careers and geographic distance from older parents of adult children, might have changed. As in studies of dynamics of variables and their associations that have been applied in gerontological studies (e.g., Waldron 1997; Liang et al. 2005; Gu and Xu 2007), the three waves of data were pooled as two survey intervals in our analysis: 2001-2003 and 2003-2006, to produce more robust estimates. Time 1 referred to the start-point of each interval in which subjective health may change, whereas Time 2 referred to the end-point of each interval. Therefore, Time 1 in this study could be 2001 or 2003 and Time 2 could be 2003 or 2006. After omitting respondents without children and cases with missing data on relevant study variables, the total number of observations at Time 1 was 2,035, including 922 older men (45.31%) and 1113 older women (54.69%). From the children's perspective, the total number of observations of children-parent pairs, was 8023, including 4246 son-parent pairs (52.92%) and 3777 daughter-parent pairs (47.08%).

Measurement

Dependent Variables

The dependent variable, intergenerational support was subdivided into financial support, instrumental support, and emotional support. From the older parents' perspective, intergenerational support was measured by the amount of transfer between each older parent and their all children. The amount of support provided or received by each child was assessed from the children's perspective. Differences between Time 1 and Time 2 support for the same individual measured the change of intergenerational support provided and the change of intergenerational support received. Because the change of support was affected by the level at Time 1, this level was also included in the analysis.

Financial support received was assessed by answers to the question "*Did the child send you (or your spouse living with you now) money, food or gifts?*". This was a measure of the total amount received from each child during the past 12 months. If the respondents did not respond with the exact amount, the options were the following categories based on Chinese RMB currency: 0= "none", 1= "less than 50", 2= "50-99", 3= "100-199", 4= "200-499", 5= "500-999", 6= "1000-2999", 7= "3000-4999", 8= "5000-9999", 9= "More than 10,000". The log of the median value of each interval was taken as the amount of financial support from children at Time 1. From the parents' perspective, the log of the sum of financial transfers received from all children by one elderly person was taken to be the financial support received by that elder at Time 1. Financial support provided was assessed by answers to the

question "*Did you (or your spouse living with you now) send the child money, food or gifts?*" Scoring of financial support from children to older parents was the same as for financial support from older parents to their children. Comparing the amount at Time 1 and Time 2, the change of financial support received was coded as 0 if there was no increase (including decrease), 1 if there was an increase. Similarly, the change of financial support provided, comparing levels at Time 1 and at Time 2, was coded as 0 if there was no increase (including decrease), 1 if there was an increase.

Instrumental support was reported as two kinds: (1) *household tasks, such as cleaning the house and washing clothes*, and (2) *personal care tasks, such as bathing and dressing*, each of which was recorded as four values: (1) Every day=7.5, (2) At least once per week=1.5, (3) Several times per month=0.5, (4) Seldom or None=0; this scoring followed the method proposed by Bian et al. (1998). The sum of the two kinds of assistance by one child was taken as the measure of instrumental support from a child to his/her elderly parent. Summing the measures of instrumental support from each child across all children at Time 1, the total score was considered as the support received at Time 1 by an elder. The scoring of instrumental support from older parents to children was the same as instrumental support from children to older parents. Comparing Time 1 and Time 2, the change of instrumental support received or provided was coded as 0 if there was no increase (including decrease), 1 if there was an increase.

Emotional support was assessed using the three questions: (1) *Overall, how close do you feel to (this child)?* (2) *Overall, how well do you and (this child) get along*

together? (3) *How much do you feel that (this child) would be willing to listen when you intend to talk about your worries and troubles?* The responses were coded as follows: 1="Not at all close/not at all well/not at all", 2="Somewhat close/somewhat well/somewhat", 3="Very close/very well/very much". An additive scale was computed, ranging from 3-9, with a higher score indicating a higher quality of parent-child relationship. The alpha reliability coefficient for these items was 0.86, 0.96 and 0.83 respectively. To avoid multicolinearity between emotional support and number of children, we took the mean of the total score across all children for each elderly parent at Time 1 to indicate the emotional support from a parent's perspective, Comparing Time 1 and Time 2, the change of emotional support was coded as 0 if there was no increase (including decrease), 1 if there was an increase.

Independent Variables

The main predictor variables were of two general types: (1) variables specific to older parents, including their personal characteristics and characteristics of their household structure, and (2) variables specific to adult children, including their personal characteristics and characteristics of their relationships with older parents.

Parent-level.

Due to the change in the spatial distribution of children as a result of out-migration or return of children, the change in migration status of children was introduced to our analysis.

Care for grandchildren provided by older parents was measured as the frequency

with which "older parents provided child-care for the offspring of each adult child during the past year". This variable ranged from 0-6, with 0= “not at all”, 1= “seldom”, 2=”once per month”, 3= “several times per month”, 4= “at least once per week”, 5= “every day, but not for the entire day”, and 6= “every day, for the entire day”. Grandchildren were treated in sets--as groups nested within the adult child who was their parent. Thus, a single value was ascertained for each set of grandchildren. Summing the score of grandchild-care across all children at Time 1, the total score was considered as the care provided at Time 1 by an elder. Comparing Time 1 and Time 2, the change of grandchild-care was coded as 0 if there was no increase (including decrease), 1 if there was an increase.

The following are the possible changes in living arrangements during the survey intervals included: (1) not living with children or grandchildren, (2) not living with children or grandchildren → living with children, (3) not living with children or grandchildren → living with grandchildren (no children), (4) living with children → not living with children or grandchildren, (5) living with children, (6) living with children → living with grandchildren (no children), (7) living with grandchildren (not children) → not living with children or grandchildren, (8) living with grandchildren (no children)→living with children, and (9) living with grandchildren (not children).

The income of an older parent at Time 1 was measured as the log of the total yearly earning of an elder (including spouse). Comparing Time 1 and Time 2, the change of income was coded as 0 if there was no increase (including decrease), and 1 if there was an increase.

Health status was measured as the sum of 15 items reflecting the ability to perform three types of tasks: (1) personal activities of daily living (dressing or undressing, walking around the room, getting out of bed, standing up from a chair), (2) instrumental activities of daily living (preparing meals, shopping, doing housework, taking the bus or train, managing money), and (3) activities requiring physical strength, mobility, and flexibility (lifting a 10 kg bag of rice, climbing one flight stairs, walking 100 meters, and stooping, crouching or kneeling). An elder rated the level of difficulty performing each task: (1) no difficulty, (2) some difficulty, (3) cannot do it without help. A summed scale was made from the 15 items (alpha= 0.94, 0.96, and 0.96 respectively) with scores ranging from 15 (performs all tasks without difficulty) to 45 (unable to perform all tasks independently). As the health status at Time 2 was compared to the status at Time 1, both the change in functional health during the survey intervals and the level at Time 1 were included in our analysis.

In addition, age, education, career, relative social status, and marriage status were introduced as control variables, the first four of which did not change during the survey intervals. Marriage status was also considered as a static variable as it changed in less than 5% of our subjects. The levels at Time 1 of these variables were controlled in our analysis.

Child-level.

Most of the measures of children's characteristics were similar to those of older parents, such as dependence variables--intergenerational support, grandchild-care.

The dynamic variables from the children' perspective included the change of

out-migration status, living arrangement and career. The change of migration of children was measured with four dummy variables: (1) not out-migrating, (2) not out-migrating → out-migrating, (3) maintaining out-migrating, and (4) return, that is out-migrating → not out-migrating. Change in living arrangement was coded as 0 if still not living with older parents, 1 if changed from not living with older parents to living with older parents, 2 if still not living with older parents, and 3 if changed from living with older parents to not living with older parents. The change of career of children during survey interval included: (1) agricultural → agricultural, (2) agricultural → non-agricultural, (3) non-agricultural → non-agricultural, and (4) non-agricultural→agricultural. This dynamic variable addressed the time-available hypothesis.

Finally, age, education, and relative education of children were static variables in our analysis. The education represented the socialization/ideology factor, and relative education represented the factor addressing the external-resources hypothesis (Blair and Lichter, 1991; Yang, 2006), which was measured by the relative level of education in comparison with other children in family, with two dummy variables: (1) not lower than average level of all children in family, and (2) lower than average level of all children in family. The characteristics of older parents were controlled in the analysis from children's perspective.

Multivariate Estimation

As the three waves of data had two survey intervals in order to produce more robust estimates, the three waves of data were pooled together. Random effects logit

models were employed using STATA version 9 (STATA 2005), which corrected for intra-subject correlation due to multiple observations of some respondents in the pooled data set (e.g., Liang and Zeger 1986). With our interest in exchanges between individual children and parents, the likelihood of children's support could not be modeled entirely in the same way, because in most cases there were multiple children in each family. Thus, family heterogeneity had to be controlled. We used a 3-layer random effects model in STATA (2005), a procedure suited to unbalanced hierarchically nested data.

Since the outcome variables in this study were binary, a Generalized Linear Mixed Model was employed. This study relied on logit as the link function and fitted a logit mixed model, which can be written as the following (Rabe-Hesketh et al. 2004):

$$\log\left(\frac{p_{ijk}}{1-p_{ijk}}\right) = \alpha_k + \beta x_{ijk} + \varepsilon_{jk} + \varepsilon_k$$

where p_{ijk} is the probability of providing a certain type of help from the *k*th family and *j*th child at *i*th time, and α_k served as a family indicator, controlling for the effect of unobserved family heterogeneity. ε_{jk} in this model was assumed to be random with a normal distribution and to be the intercept of *j*th child in *k*th family, ε_k was assumed to be the random intercept of *k*th family also with a normal distribution.

Results

Gender Division: From Parents' Perspective

Table 1 shows the results of testing for likelihood of increase of intergenerational support during the survey interval by gender from the parents' perspective. The results indicate that older parents whose children migrated out have a greater probability of receiving increased financial support and, comparing the coefficients by gender, older fathers whose children migrated out are more likely to receive increased financial support than older mothers in the same situation. This result supports hypothesis 1 with regard to financial support. Older mothers who increase their provision of grandchild-care have a greater probability of receiving more financial support (OR=1.512), but there is no significant effect of older fathers, which supports hypothesis 2. Compared to older fathers who continued to live without children during the survey interval, older fathers who changed from living away from children to living with grandchildren or with children to living with grandchildren, as result of out-migration of children, have a greater probability of receiving more financial support (OR=3.012, OR=1.912). Older mothers who continued to live with grandchildren have a greater probability of receiving increased financial support than other older mothers (OR=3.954), which supports hypothesis 3. With regard to financial support provided by older parents, older fathers who changed from not living with their children to living with their children have a greater probability of providing more financial support than other older fathers (OR=2.101), while older mothers who changed from living with children to not living with children have a greater probability of providing more financial support than other older mothers

(OR=3.954). However, older parents who changed from living with grandchildren to not living with any offspring are least likely to provide increased financial support (older father, OR=0.284; older mother, OR=0.128). In addition, older parents who increase grandchild-care have a greater probability of providing more financial support (older father, OR=2.070 older mother, OR= 2.954).

--- Table 1 about here ---

Estimates for instrumental support by parent's gender show that older fathers who changed their living arrangement to live with some child(ren) have a greater probability of receiving more instrumental support. Older mothers who changed from living alone to living with children have a greater probability of receiving increased instrumental support than other older mothers (OR=4.175). Out-migration of children diminishes the probability of instrumental support provided by older parents. However, out-migration of sons does not reduce the probability of an increase in instrumental support provided by older fathers, which implies that out-migration of children has less effect on instrumental support provided by older fathers than on that by older mothers. Concordant with the roles expected of each gender, older fathers play less of a role in caring for the family, which tends to be the role of their spouse; hence out-migration of children has less effect on the level of fathers' instrumental transfers. Hypothesis 1 is not supported regarding instrumental support. The return of daughters reduces the probability of an increase in instrumental support provided by older fathers (OR=0.269) as result of daughters' contribution to housework.

Estimates of the likelihood of increase of emotional support by gender in Table 1

show that older parents who receive more financial support or more instrumental support have a greater probability of increasing emotional support than other older people. Out-migration or return of daughters enhances the probability that emotional support of older parents is increased. Older mothers whose sons return are more likely to increase emotional support (OR=1.372), and older mothers living with children have a greater probability of strengthening emotional closeness than other older mothers (OR=2.696). Older fathers who provide more grandchild-care have a higher probability of increasing emotional support (OR=1.479).

Gender Division: From Children' Perspective

Estimates of the likelihood of increase in intergenerational support by gender from the children' perspective are presented in Table 2. We see that children who receive increased grandchild-care have a greater probability of providing more financial support, and daughters are more likely to provide an increase in financial support than sons; this supports Hypothesis 5. Sons are more likely to provide greater financial support to older mothers than to older fathers (OR=1.218). Sons who change from not living with parents to co-residence have a greater probability of giving more financial support than sons who continued to live away from their parents (OR=1.526). Investment in sons' education is positively related to the financial return from sons. However, as sons provide the main support for the elderly, increase in financial support by sons is not significantly influenced by their out-migration. In contrast, daughters who were away from the village during the survey intervals have a greater probability of providing increased financial support than those who remained in the

village (OR=1.306). Daughters with relatively more education also have a greater probability of giving increased financial support (OR=1.232), while daughters who changed from non-agricultural to agricultural work are less likely to provide increased financial support (OR=0.743). In light of the these results, we infer that although son preference in living arrangement and its indirect effects reflect the expectation that sons provide financial support to their elderly family, for the likelihood of increasing financial support in the future, sons are inferior to those daughters whose socio-economic status is improved as a result of a change in their earning ability. The difference in financial support between sons and daughters is reduced, supporting Hypothesis 4.

--- Table 2 about here ---

Daughters who are away from their village are less likely to receive increased financial support than those remaining in the village. Daughters who switched from agricultural work to non-agricultural work have a greater probability of receiving more financial support from parents than those who continued to work in agriculture. Sons who changed from living away from parents to co-residence with parents are more likely to receive increased financial support than those who lived away from parents during the survey interval. These results support Hypothesis 6 regarding financial support.

Estimates of instrumental support provided by children reported in Table 2 show that co-residence with parents enhances the likelihood of providing increased instrumental support, especially by children who lived with their parents during the

survey intervals. Co-resident daughters are more likely to provide increased instrumental support than co-resident sons. Sons are more likely to provide increased instrumental support to older mothers than to older fathers (OR=1.536). Sons who moved from living with parents to living away from parents have a greater probability of providing more instrumental support (OR=2.010). However, out-migration reduces the probability that instrumental support is provided by children. Daughters who are away from their village or who return during the survey intervals are less likely to provide increased instrumental support (respectively, OR=0.217 and OR=0.481). Daughters who switched from agricultural work to non-agricultural work have the lowest probability of providing more instrumental support (OR=0.439). This suggests that although sons have primary responsibility for support, their spouses, that is daughters-in-law, occupy a particular place in providing assistance. The change of time or space availability accompanying career transitions has little effect on change of instrumental support by sons, while daughters who are non-agricultural workers are less likely to provide increased instrumental support. Hypothesis 4 regarding instrumental support is supported.

The results concerning instrumental support received by children show that daughters who are away from their village are less likely to receive more instrumental support from their parents than others (OR=0.394), while sons are more likely to receive increased instrumental support from their parents after they leave their village (OR=1.710). Co-resident children have a greater probability of receiving increased instrumental support than others, especially those who continue living with their

parents. However, daughters living with parents are more likely to receive increased instrumental support received than sons. Thus, probably due to the caring role of women in the family, daughters living with their parents during the survey intervals have a greater probability of increasing instrumental transfers than sons who are co-resident with parents. This does not support Hypothesis 6 regarding instrumental support.

Results for emotional support from the children's perspective are also shown in Table 2 where we see that children (no matter sons or daughters) are more likely to enhance emotional closeness with older mothers than with older fathers. Sons who receive more grandchild-care have a greater probability of increasing emotional support (OR=1.360). Sons who ever lived with their parents during the survey intervals are more likely to increase emotional support, especially sons who lived continuously with their parent (OR=2.939). These suggest that co-residence strengthens the division of supports to their older parents among children, especially among sons, and enhances older parents' well-being. The frequent transfers between older parents and co-resident sons enhance emotional closeness. Hypothesis 6 regarding emotional is therefore supported. Sons who are away from their village have a greater probability of increasing emotional support, while only for daughters who return is the emotional closeness between generations enhanced (OR=1.779). In addition, the higher the level of education of children, the higher is the likelihood of increasing emotional support, and sons with higher education have a greater probability of increasing emotional support than daughters, suggesting that gender

ideology factors have greater effects on emotional support by sons than by daughters. Thus migrant sons are more likely to increase emotional support of parents than migrant daughters, which may be a result of selection for out-migration. That is, children with higher education are more likely to leave their village for a job. Alternatively, people with higher education may more easily adopt modern notions (generally, the education of sons is at a higher level than that of daughters in rural areas of China), or there may by a greater expectation of "bringing honors to ancestors" for sons. Hypothesis 4 regarding emotional support is supported.

Discussion

We have explored gender division of intergenerational transfers from the older parents' perspective and from the adult children's perspective respectively taking account of out-migration of labor in Chinese rural areas. The results support the corporate group model. However, there were gender differences in intergenerational support of elderly parents and adult children that are apparently attributable to gender roles in families. The results from the parents' perspective showed that older mothers received more returns, which reciprocate the support they provide, while older fathers benefitted more from out-migration of adult children. From the children's perspective, while sons took on more responsibility for family support, daughters reciprocated more to support received from their elderly parents. The role of daughters in regard to elderly family members has been enhanced by the out-migration of young adults. As a result gender differences between sons and daughters in intergenerational support

have been reduced.

From the older parents' perspective, the patterns of intergenerational transfers between older parents and their children by gender support the corporate group model; that is, the objective of intergenerational transfers is still to satisfy the needs of older parents, and due to their disadvantages in economic status and health, older mothers depend more on their children. The results were consistent with the older mothers' status in the Chinese traditional patrilineal family system--“be faithful to husband, and be faithful to son”. On the one hand, older mothers depended more on their spouses, which suggests that a husband, especially one whose socio-economic status is relatively higher, not only provides economic security for older mothers, but also enhances financial transfers between generations (the result reported in Table 2). On the other hand, older mothers depend more on their sons. We found that adult sons provided more intergenerational support to their older mothers, corresponding more to a higher-flow contract. However, in the context of modernization and urbanization, as the traditional responsibilities rooted in the notion of filial piety (Zhang 1999) and "community opinion" regulating the role of children have weakened, older parents have had no choice but to provide more assistance and support to grandchildren in order to improve their children’s abilities to provide for them in the future; thus children's adherences to the contract is ensured by increasing their debt. We found that older mothers who had less resources did not benefit more than older fathers from increasing income as result of out-migration of children, but received more return in compensation for their assistance, such as caring for grandchildren.

From the children' perspective, we found that daughters who received support from their older parents (e.g., grandchild-care) returned more in the form of financial support and instrumental assistance, suggesting that intergenerational transfers between daughters and elderly parents were short-term, approximating reciprocal exchanges, while intergenerational transfers between sons and elderly parents were long-term "contracts". There was a gender difference in the regulation of family support, which also acted on living arrangements and its consequences. Co-residence can be seen as a form of contract to distribute obligations among siblings, and to ensure family support for older parents. We found that co-residence enhanced financial transfers between sons living with parents and these older parents, as a result of which older parents increased support to strengthen the contacts with co-resident sons. Sons living with older parents had a greater probability of receiving increased financial support than other sons, and the likelihood that co-resident sons receive increased financial support was higher than that of providing increased financial support by co-resident sons. We infer that, as a complement to instrumental support, an increase of financial support provided by sons living away from parents would be partially transferred to those sons living with parents to compensate for their assistance to the older parents.

Our analysis of factors that increase the probability of intergenerational support, such as career, out-migration of children, and living arrangement has demonstrated the effects of out-migration of children on gender division of intergenerational support. Combining the effects of external-resource factors, we found that although sons had

an advantage in financial support, as the socio-economic status of migrant daughters was improved, gender division of financial support tended to be reduced. Change of time or space availability accompanying the transformation of children's careers diminished the probability that daughters provide more instrumental support, which reduced the traditional gender division of instrumental support. Further, as out-migration improved the emotional closeness between sons and older parents, the gender gap of emotional support between generations is apparently weakened. In sum, although there remain gender differences in intergenerational transfers between generations, out-migration of children reduced these differences between sons and daughters. This heralds a change in the traditional pattern of gender division of family support in Chinese patrilineal rural societies.

The main limitation of this study was that, due to the limited distribution of respondents' education and careers, the analysis could not estimate the effects of factors concerning gender division of labor on gender division of intergenerational transfer by older parents. In future studies, in addition to assessing the probability of intergenerational support, the net flows of intergenerational transfers should be analyzed from both the older parents' and adult children's perspectives.

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Table 1

Random Effects Models Predicting Intergenerational Transfers by Gender from Parents' Perspective (N=2035)

Independent Variables	Financial Support				Instrumental Support				Emotional Support	
	Father		Mother		Father		Mother		Father	Mother
	Child→Father	Father→Child	Child→Mother	Mother→Child	Child→Father	Father→Child	Child→Mother	Mother→Child		
Intergenerational Support:										
Financial support received: Time 1	0.259***		0.314***							
Change of financial support received (Increase)		1.551*		1.037					1.642**	1.493**
Financial support provided: Time 1		0.777*		0.772**						
Change of financial support provided (Increase)	1.527*		1.252						1.070	1.365
Instrumental support received: Time 1					0.845***		0.894***			
Change of instrumental support received (Increase)						2.214*		1.901**	1.455+	1.649***
Instrumental support provided: Time 1						0.801*		0.906***		
Change of instrumental support provided (Increase)					2.712**		2.049**		1.071	0.891
Emotional support: Time 1									0.350***	0.422***
Change of emotional support (Increase)	1.514**	1.004	1.405*	1.243	1.159	0.772	1.371*	0.985		
Children Status										
Out-migration of sons (One or more)	1.401+	1.122	1.359*	1.065	0.722	0.818	1.186	0.669*	0.995	1.220
Out-migration of daughters (One or more)	1.889**	0.863	1.725**	0.722	1.184	0.329**	0.982	0.519**	2.165**	1.566**
Return of sons (One or more)	1.156	0.685	1.282	1.050	0.725	1.268	0.969	1.203	0.858	1.372+
Return of daughters (One or more)	1.302	0.874	0.905	0.896	1.411	0.269*	1.119	1.261	1.791*	1.671*
Grandchild-care provided	1.002	1.075**	0.967	1.089**	1.049+	1.055	1.054*	1.069*	1.024	1.032
Change of Grandchild-care provided (Increase)	0.923	2.070**	1.512+	2.954***	1.079	2.236*	0.765	2.439**	1.479+	1.150

(***Continued***)

Living arrangement: *Continuing to live apart from children*										
Not living with children → Living with children	0.935	2.101*	1.039	0.765	2.017+	4.021*	4.175***	0.890	0.834	1.165
Not living with children → Living with grandchildren	3.012**	1.587	2.041+	1.250	0.368	8E-11	0.917	0.310+	1.085	0.838
Living with children → Not living with children	1.161	0.684	2.889*	3.954**	0.430	0.264	0.697	2E-11	1.633	0.812
Continuing to live with children	0.990	0.913	2.799***	0.575+	2.125*	4.055**	2.803**	2.960**	1.401	2.696***
Living with children → Living with grandchildren	1.912+	1.839	2.215+	1.757	0.936	9E-11	0.789	0.776	1.032	1.878
Living with grandchildren → Not living with children	0.795	0.284*	1.911+	0.128**	0.424	0.247	0.779	0.103*	0.669	1.208
Living with grandchildren → Living with children	0.486+	1.934	2.365*	0.555	2.530*	2.140	1.935	1.027	1.269	1.368
Continuing to live with grandchildren	1.147	2.059*	3.725***	1.688	0.739	1.136	0.889	0.133**	1.107	1.029
Control variables										
Age group: *60-69*										
70-79	1.797**	0.524**	1.337+	0.784	0.780	0.579	1.075	0.328***	1.052	1.933***
80+	2.806**	0.173**	1.662*	0.333**	0.698	0.155*	1.810*	0.210***	2.052+	3.046***
Marital status (Married)	1.088	1.063	1.631*	1.717	0.668	1.278	0.76	0.923	1.718*	2.721***
Education (Literate)	1.043	1.009	1.002	1.294	0.841	0.776	0.776	0.678	1.153	1.131
Occupation (Non-agricultural work)	0.876	1.819+	1.353	1.061	0.899	0.927	0.894	0.899	1.314	1.336
Relative socio-economic status (Lower than spouse)	0.394	2.056	0.779	2.163*	2.058	2E-11	0.990	0.988	0.294	1.316
Income	0.979	0.967	0.910	1.107	0.689***	0.869	0.873	0.978	0.861+	1.097
Change of income (Decrease)	1.155	0.792	1.497+	0.725	1.760*	0.878	1.287	1.228	1.643*	1.133
Functional status	1.064***	0.969**	1.045***	0.956***	0.969**	0.965*	0.952***	0.969**	1.139***	1.090***
Change of functional status (Decline)	1.051	0.543**	0.880	0.719+	1.998**	0.347**	1.960***	0.880	0.656*	0.636***
-2LL	555.357	437.133	683.775	418.672	327.363	219.872	577.482	373.387	481.469	606.623
N	922	922	1113	1113	922	922	1113	1113	922	1113

(1)The reference categories of the categorical variables are omitted, including no increase of financial support received, no increase of financial support provided, no increase of instrumental support received, no increase of instrumental support provided, no increase of emotional support, none of migrant sons, none of migrant daughters, none of sons return, none of daughters return, no increase of grandchild-care, unmarried, illiterate, farming or housework, not lower than spouse, no decrease of income, no decline of functional status.

(2) All variables of static control variables are measured at Time 1.

(3) N is the total number of observations.

(4) *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

Table 2

Random Effects Models Predicting Intergenerational Transfers by Gender from Children's Perspective (8023)

Independent Variables	Financial Support				Instrumental Support				Emotional Support	
	Son		Daughter		Son		Daughter		Son	Daughter
	Son→Parent	Parent→Son	Daughter→Parent	Parent→Daughter	Son→Parent	Parent→Son	Daughter→Parent	Parent→Daughter		
Intergenerational Support:										
Financial support received: Time 1	0.501***		0.310***							
Change of financial support received (Increase)		1.005		1.462*					1.827***	2.011***
Financial support provided: Time 1		0.453***		0.320***						
Change of financial support provided (Increase)	1.087		1.570***						1.132	1.780*
Instrumental support received: Time 1					0.839***		0.760***			
Change of instrumental support received (Increase)						2.081***		1.621	1.572**	1.715*
Instrumental support provided: Time 1						0.845***		0.803***		
Change of instrumental support provided (Increase)					2.017***		1.786		1.005	0.734
Emotional support: Time 1									0.296***	0.135***
Change of emotional support (Increase)	1.375***	0.973	1.339***	1.702***	1.192	0.947	1.130	0.640		
Child-level variables										
Grandchild-care received	1.055**	1.270***	1.034	1.252**	1.143***	1.509***	1.097	1.828***	0.987	1.111+
Change of Grandchild-care received (Increase)	1.356*	5.267***	1.622*	6.149***	0.998	32.58***	0.708	20.81***	1.360+	1.782
Out-migration: *In village → In village*										
In village → Out of village	1.237	1.274	1.044	0.392+	0.723	1.710*	0.217***	0.550	1.284	1.233
Out of village → Out of village	1.070	0.889	1.306*	0.509*	0.401***	1.172	0.163***	0.394*	1.761***	1.317
Out of village → In village	0.873	0.668	1.184	0.505	0.968	0.828	0.481*	0.442	1.169	1.779*
Living arrangement: *Continuing to live apart from parents*										
Not living with parents→Living with parents	1.526*	1.824+	1.393	3.520	7.755***	6.597***	11.15***	18.583**	1.870**	1.471
Continuing to live with parents	1.052	1.439	0.403*	2.907	9.320***	10.99***	27.64***	29.33***	2.939***	0.871
Living with parents→Not living with parents	0.764	0.597	0.908	0.434	2.010*	0.821	1.079	1.755	1.638*	0.396

(***Continued***)

Occupation: *Agricultural work→Agricultural work*										
Agricultural work→Non-agricultural work	1.123	1.034	1.043	1.801*	0.760	1.087	0.439*	2.268*	1.215	1.200
Non-agricultural work→Non-agricultural work	1.293*	1.313	1.487***	1.077	0.774	1.050	0.548*	2.043*	1.189	1.623**
Non-Agricultural work→agricultural work	1.136	1.120	0.743*	0.921	0.714	1.282	1.147	0.388+	1.352	1.170
Education: *Illiterate*										
Primary school	1.359*	1.143	1.102	1.446	0.804	0.830	0.815	0.932	1.572*	1.590*
Middle school education	1.459*	1.766+	0.976	2.713*	1.106	0.652+	1.244	1.253	1.833**	1.705+
Relative Education(Not lower than average level of all children in family)	0.949	0.546**	1.232+	0.533*	0.984	1.005	0.915	0.965	1.063	0.920
Age	1.011*	0.939***	1.010+	0.919***	0.991	0.936***	0.985	0.958*	1.043***	1.066*
Parent-Level variables										
Age group: *60-69*										
70-79	1.327**	0.764	1.256*	0.522*	1.294	0.893	0.979	1.057	1.106	1.886**
80+	1.027	0.514	0.949	0.117**	2.068*	0.796	1.601	0.218	1.523+	2.561**
Gender (Female)	1.218+	0.887	1.121	0.708	1.536*	1.032	1.495	0.814	2.085***	3.340***
Marital status (Married)	0.927	2.036**	1.031	3.267***	0.463***	0.708*	0.656+	0.662	1.527**	2.215***
Education (Literate)	1.069	1.190	0.974	0.859	0.971	0.715*	1.006	0.970	1.648**	1.287
Occupation (Non-agricultural work)	1.226	1.362	0.924	2.358*	1.16	1.266	1.849	1.233	1.122	1.506
Income	0.945	1.206**	1.001	1.172	0.881	1.040	1.034	0.989	1.000	0.901
Change of income (Decrease)	1.159	0.742+	0.985	0.553*	1.469+	0.769+	1.153	1.061	1.273+	1.477*
Functional status	1.001	0.978*	1.035***	0.974+	0.936***	0.990	0.948***	0.938**	1.092***	1.234***
Change of functional status (Decline)	0.925	0.544***	0.711***	0.535**	1.940***	0.749*	2.580***	0.629	0.720***	0.590***
-2LL	2738.056	1292.727	2373.064	836.618	1151.541	1140.899	827.438	303.733	1996.450	1482.927
N	4246	4246	3777	3777	4246	4246	3777	3777	4246	3777

(1)The reference categories of the categorical variables are omitted, including no increase of financial support received, no increase of financial support provided, no increase of instrumental support received, no increase of instrumental support provided, no increase of emotional support, no increase of grandchild-care, lower than average level of all children in family, male, unmarried, illiterate, farming or housework, not lower than spouse, no decrease of income, no decline of functional status.

(2) All variables of static variables are measured at Time 1.

(3) N is the total number of observations.

(4) *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$