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Changes of Patterns of Intergenerational Transfers in Urban and Rural China

Zhicui Wang

Abstract: In China, filial piety is regarded as a tradition that children should take care of old-aged parents with financial support and spiritual consolation. Thus, the intergenerational transfers that could be observed are usually upward from children to parents. Nowadays, China is undergoing great economic and social development, urbanization, population aging and infiltration of western culture. It is of great importance to know whether people have changed their thoughts and behavior toward the tradition patterns of intergenerational transfers. Using China Household Income Project (CHIP) in 1995 and 2002, this paper studies the determinants of intergenerational transfers, the change of patterns in urban and rural China over time and whether the altruism exists. In urban area, the recipients' income is significant correlated with transfer amount, but the result is inconsistent with altruism. In rural area, no significant effect could be got which means no altruism exists. The findings of this paper provide reference for policy making on old-age support in this fast changing society. Individuals, communities and government should jointly make the efforts.

Keywords: Intergenerational transfers, Altruism, Social Security

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Supervisor: Jonas Helgertz

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1. Introduction

This study is going to provide evidence for patterns of intergenerational transfers using the dataset of Chinese Household Income Project in year 1995 and 2002 which contains useful information of individuals in rural and urban area of China. This paper aims to answer the following three questions: 1) What are the determinants that would impact children's behavior on transfer decision making and transfer magnitude to parents? 2) Are there any differences could be observed from the results in different regions and do they change over time? 3) What's the motive of intergenerational transfers? Is it Altruistic?

Intergenerational transfers are widely discussed topics at the macro and micro level. At the macro level, aggregated savings and consumption in people's life cycles caused by demographic transition may influence a country's economic growth, whose simulations based on calibrated general equilibrium models could provide guidance for fiscal or social policy reforms. At the micro level, the focus is usually on individual's daily life and family functions where exists divergence in the West and the East because of different social standards and values on family structure and individual roles. The pattern of intergenerational transfers in developed countries is usually downward flow from parents to children. While in Asian countries, they are more likely to be upwards from children to parents. Albertini, Kohli and Vogel (2007) studied the transfer patterns of ten Western European countries¹ which is based on a survey conducted in 2004 and found that there's a net downward flow from parents to children in the form of inter vivos financial transfer and social support at the European level. Transfers from older generation to younger generation are more frequent than the ones in the opposite direction. In U.S., the study of Gale and Scholz (1994), who took a dataset based on interviews of households from 1983 to 1985, shows that 75.4% of the transfers are from parents to children, but the proportion of opposite direction only accounts for 14.6%². In Asian countries, the pattern is quite different. Chu and Yu (2007) conducted a kinship networks study on interview data from Taiwan in 1999, and found that more than 50% of the interviewees aged from 36 to 65 providing financial support to parents, but less than 5% of them getting transfers from their older generation.

Intergenerational relationships in households usually cover three parts that are widely discussed: general care, financial support and emotional consolation. The Chinese family is like a kind of community stretch whose axle is parenthood (Fei Hsiao-tung 1933). Families concern about the next generation, but the old-aged is the centre of the family. Influenced by Confucianism, family ethics stress filial piety and respect to the old. In developed countries, family members usually take the mode of "distant intimation"³(Xizhen Liu 2008). At the material level, it is reflected through the comparatively complete social security system and transfers in the form of social

¹ The ten countries in the study include Denmark, Sweden, Austria, France, Germany, Netherlands, Switzerland, Greece, Italy and Spain.

² The remaining transfers involve grandparents giving to grandchildren, grandchildren to grandparents and other types of transfers. Households can give to more than one recipient.

³ The intimate with distance mentioned in the article mainly means that the support from young generation to the old is realized by social security system at the macro level. Intra-family support from parents to children could be compensated by transfers of social wealth. It is the basic mode of intergenerational transfer in developed countries, thus the spiritual-resource circulation in the family is indirect.

wealth. At the spiritual level, it sets foot on community care and home care services assisted by old-aged institutions and children's emotional support. In Asian countries, the main financial and emotional resources are all from the family. Father generation raise up the young and when they are getting old, the young make the back feeding to their parents.

However, when the intra-family mode is undergoing changes, people's behavior may be affected. Demographic transition, industrialization and urbanization change the macro environment, diminish the family scale and restructure the components of families. In old times, children used to live with parents, especially the eldest son, even after getting married. Daughter-in-law takes the responsibility to take care of the parents-in-law (Feldman et al, 2007). Nowadays, families turn into core-family. Some traditional attitudes and expectations compromise in cities. People choose to live in a more independent way and young married couple has the opportunity to live on their own as soon as they get married (Logan and Bian, 1998). Young couples are busy with working. In rural area, young men and women go to cities looking for jobs and leave old parents alone at home. A survey shows that 49.7% old-aged people in urban area lives alone and the figure in rural area is about 38.3%⁴. The family theory developed by Goode (1963) thinks that with the deep going of social modernization, the kinship network is weakening and loosening the traditional family network. As the core-family becomes the main unit of society, family cohesion is weakened. Regarding the support to parents, attitudes also change over time. A study based on the data from Taiwan found that the number of people who think sons should take the responsibility to give financial support to older generation reduces from nearly 35% in 1960s to 8.5% in 1990s (Chattopadhyay and Marsh 1999). Then who should take the main responsibility to support old generation, equally distributed among offspring or substituted by social welfare system, is one of the focuses to be widely discussed today.

Taking the view of macro environment that increasing serious population aging problem exists, the worries make sense. The number and proportion of the old-aged has experienced a big enlarge since 1990s. The figure of proportion of the aged over 60 increases from 10.33% in 2000 to 13.26% in 2010, and will reach a peak in the middle of this century⁵. Low fertility rate continues. The new statistics released in April 2011 by National Statistics Bureau show that the cohort aged 0-14 only occupies 16.6% according to the national sixth census carried out in 2010, while this figure in 1990 is 27.69%. The reason is obvious. Firstly, the long time implementation of one child policy artificially decreases fertility rapidly, though good work has been done to relieve the pressure on social economic development. Secondly, the improving living standard and medical development inevitably prolong people's life. However, the negative impact may be influential and long run. In 1990, old age dependency ratio was 8.3 and was raised to 11.4 in 2010⁶. It's getting harder for younger generation to afford.

Moreover, public transfers system is not ready yet. In early 1990s, the State Council released a document named "Decisions on the Reform of Pension System for Enterprise workers". Following the new calculation method implementation in pension system taken by Jiang Xi province and Liao Ning province in 1992, reforms continued

⁴ Survey of Old-aged Population Status in Urban and Rural in 2006. National Statistics Bureau.

⁵ News report of the Central People's Government of the People's Republic of China. www.gov.cn, 2011-5-15

⁶ Human development report of UNDP, 2009. www.hdrstats.undp.org. 2011-5-15

to enlarge to all regions around the nation. In March 1995, a notice to deepen the pension system reform was informed everywhere. In principle, the nation is taking an insurance policy of social pooling combined with individual accounts. In the frame of social pension system, it consists of basic social pension insurance, supplementary pension insurance and personal savings pension insurance. The coverage of this program is tried to extend to cover non-public enterprise workers and other social workers in cities and towns, and in rich province, such as Jiang Su and Zhe Jiang, the village residences are considered. But the effect is limited. Till today, the coverage of this system is still below 50% among urban workers, and no more than 20% of the old population who's over 60 is in the system (Salditt, Whiteford and Adema, 2008). Moreover, the program is hard to practice in most of the rural regions where the population accounts for 63.78% of the total population announced by the Fifth census in 2000⁷. The insurance policy carried out in rural area is different from the one in cities and towns. The insurance fee is only afforded by peasant individuals. Except part of the rich ones, most of the peasants with low income haven't the economic ability to afford the insurance. From this point of view, no difference is found between the social insurance and commercial insurance, thus the rationality is widely doubted in the nation. Even in cities and towns, the pay-as-you-go (PAYG) system is not that sustainable (World Bank, 1997).

In the view of traditional family mode and social reality faced by people today, the old-aged relying on family to make a living is an inheritance of culture and also a result of no alternative. The weak social security system doesn't provide people a second choice. A survey by National Statistics Bureau conducted in 1994 shows that in the main economic source, financial support from children and relatives ranks the first place with 57.1%, followed by personal income with 25% as the second source and the pension only supports 15.6% of people's living.⁸ Though in the following years, pension may become the second main source of income for the old-aged, the main source of financial support still comes from children and relatives. Fei Hsiao-tung, a Chinese sociologist, pointed out in 1983 that the back feeding mode is remained in most of the families, even married children leave home, the responsibility of children to support old-aged parents will never change⁹. Evidence from researches which is did before found that making private transfer to retired parents in urban China is a common behavior and the transfer amount is correspondent with the recipient's income levels. (Fang Cai, John Giles, Xin Meng, 2006).

The following sections of the paper would be divided into six. First, we will review some theories developed in the field of intergenerational transfers by scholars. Second, main findings in previous studies related to the patterns of intergenerational transfers are presented. Third, the dataset of this paper is introduced, followed by the empirical framework this paper is going to use. In fourth section, the main results are shown and discussed. Then, the following fifth section will have a discussion on some points regarding this paper. The last part delivers the conclusion and policy implications.

⁷ China Population and Employment Statistics Yearbook, 2000.

⁸ China Population, Population and Employment Division of National Bureau of Statistics of China, 2004.

⁹ In the symposium on modernization and Chinese culture hold by The Chinese University of Hong Kong in 1983, Fei Hsiao-tung made a report named Alimony Problem for the old-aged in the Transition of Family Structure, published by Journal of Peking University (Philosophy and Social Science), 03(1983).

2. Theoretical Background

Intergenerational transfers are going to play an important role in welfare distribution system. Family is a unit of society, the distribution of family wealth involves many parts such as fertility and offspring's living standard. Family wealth includes family income, resources and human capital. Intergenerational transfers not only consist of monetary transfer, but also include the time transfer (help with housework) and life care (parents spend time taking care of grandchildren and young generation take care of the life of old-aged parents). Nowadays, the motive is more complicated than before. Many hypotheses were put forward to explain the motive of intergenerational transfers of family wealth based on different points of view, which also describe different characteristics of family members who give or receive such wealth in a certain motive. In developing countries, intergenerational transfers are the main form to help family members getting through unstable period in life cycle and keep smooth consumption. The main stream hypotheses are as below.

2.1 The old-age security hypothesis

The old-age security hypothesis is one of the earliest hypotheses regarding family wealth of intergenerational transfers (Neher 1971, Willis 1980, Nugent 1985). In developing countries, undeveloped financial and economic institutions are unable for families and individuals to secure the properties. With the incomplete social regime and legal system, governments are usually helpless to implement social security program. Currency is more vulnerable to external environment. Thus, problems will come one after another with time passing by when individuals choose saving as capital accumulation for their old-age security. The hypothesis assumes that when capital accumulation methods are limited, individuals would choose to rely on next generations who can provide such support, though it's quite risk for them to do so because children would accidentally die or injured in half way, or their economic activities fail, or even the filial piety couldn't be inherited as the wish of the parents. In view of this, parents usually deliver more children to secure themselves. That's the reason why old-age security hypothesis is usually discussed with fertility. In developing countries, especially poor nations, children are the only method of security for the old-aged. Children can provide diversified ways to offer security including monetary transfers, housework help and general care. However, with the development of economic markets and improving financial system, social pension security and commercial operation is emerging. With the increasing dependence on the market and public sector and less dependence on children, the economic interests of raising more children will reduce, which will decrease fertility rate. On the other hand, the pattern of transfers in family wealth is changing as mentioned before. In Asian countries, worries are prevailing that the dependence on children's transfers will lead to the increasing transfers of wealth in family and reduce the savings in financial market, thus the inadequate of savings would limit the economic development. Lee, Mason and Miller (2003) did a study on saving, wealth and transfers on the data from Taiwan and U.S. to simulate saving rate from 1900 to 2050 and the result of Taiwan shows that the net private and household saving rate continues to increase till the early 2000s and will have a fall after that. But this estimation also had reservations that the effect of ending transfer system may not really lead to substantial increase in saving rates. No matter what the fact is, the thing we can observe now is when the fertility rate continues to decrease, the saving rate is still high in many countries, such as China, and it has experienced unprecedented economic booming. At the same time, we can easily observe old-aged parents making a living on the financial support their children provide.

2.2 Altruistic hypothesis

The theory is developed by Becker (1974). Altruistic hypothesis focuses on the altruistic feelings between family members. In other words, children's support is upon parents' needs (Becker 1991). If a household head who controls family resources has altruistic feeling towards other family members, he would probably transfer the economic resources in the way to maximum the weighted consumption utility of the whole household. Becker thought that the resource allocation in family economy is effective, which can provide family members the stable consumption in their life cycle when the outside world is unstable. Otherwise, they have to rely on outside activities such as borrowing in financial market or purchasing commercial insurance to tackle with risks and the instability. If combined with human capital model¹⁰ Becker developed, the more altruistic feeling exists from parents to children, the more investment on education will occur and the less return they need. Or in the circumstance of transfers from children to parents, adult children are willing to help parents even less contact involves between them or their relationship is adversarial (Riley 1983).

There are two points remained to be discussed. Firstly, many discussions on altruism imply the assumption of "preference homogeneity". The households with same characteristics would have same intergenerational transfer motive in the hypothesis of altruism, which means the net transfers to family members won't be influenced by other preference. In fact, "preference homogeneity" is just an assumption. Differences exist in altruism and intergenerational transfers among different households even they bear same characteristics. It is hard to prove by empirical methods to differentiate the transfers motivated by altruism or by the transfers under "effective contract" among family members (tangible and intangible contract regarding intergenerational transfers). For instance, a certain insurance contract will reallocate assets resource from the lucky member to the unlucky member, but the amount of allocation (money on insurance sheet) and beneficiary is decided in advance. The allocation is a kind of effective contract transfers and can also be regarded as a transfer with altruism. Given another example, the human capital investment from parents to children could also be regarded as an exchange of investment return in the future.

Secondly, the altruistic hypothesis could be mistaken by exchange motive in the intergenerational transfer behavior. For example, the education opportunity parents provide to children could be regarded as an exchange of return security when they get old. Or children treating their old-aged parents well could be regarded as an expectation of a return of bequest. So the key point is whether the transfers to parents could get a higher return or if the transfers have a low present value compared to the bequest. This is the way to judge the motive of people behind the behavior. If the answer is no, then we could regard the children are altruistic. Moreover, if the transfer amount received by parents in their period of low income is offset by the transfer they pay in the high income period, the children is not motivated by altruism. The evidence is hard to get through empirical research. But one of the indirect evidences is to analyze the correlation between the resource parents possess and the transfer amount their children pay. If the correlation is low, then we could say it is altruistic motive, or in the situation that children's transfer is independent of their siblings, the altruistic motive may exist.

¹⁰ Human capital model thinks that people choose to invest in human capital is on the basis of rational benefits and costs.

2.3 Reciprocal hypothesis

Reciprocal hypothesis could be regarded as the opposite hypothesis to altruism. This hypothesis assumes that there exists an unseen capital market with borrowing in the family. Parents and children carry out transfers in the forms of loan, investment and donation in the market. The main manifestation is investing human capital on children and children provide economic support to pay back the loan and investment from parents (Greenberg 1980).

In the theory of life cycle savings, an individual would take a loan to keep a stable consumption in his life cycle before he works and save money in the period of working (then pay back the loans) and spend the savings when he's old. In the human capital model of Becker, the ability of earning has direct correlation with the investment parents paid for their education and health and the time parents spent with them when they are young. Based on life cycle saving theory and model of human capital investment, parents have a budget for family, it is constrained by parents' income, land property and other assets. Parents allocate the assets concerning current family consumption, children's consumption, and the savings for their own old-age security. According to the assumption, the part used on children is regarded as reciprocity or an investment which could get back when they are old. Moreover, education level of children has positive correlation with the intergenerational transfers to their old-aged parents and it should be an increasing function.

From the view of economic theory, the effective investment to children should maximum the joint wealth of parents and children to make the marginal returns of human capital investment equals to the market interest rate. When the wealth of the family maximizes, the motive of intergenerational transfers will limit the wealth allocation between parents and children. If parents are altruistic motivated, they would support all the capital investment on their children when they are young. This hypothesis emphasizes intergenerational association in the family and also emphasizes on economic rational behavior of transfers.

In developing countries where economic reform is taking place, parents' income is less than next generation's income due to the rapid economic growth. If annual growth of income per capita is 5%, and the generational length is 25 years, the next generation's income will be 3.4 times of their parents'. In the view of development economics, with the economic growth, economic activities will convert from agriculture to industry and service which has a great requirement on more skillful and higher education labors. In considering of this, greater proportion of investment on human capital will be required. Low income puts parents under pressure. They choose to kill the current consumption or reduce the savings for their old-age. Another approach is to reduce fertility, or turn the part of their monetary savings into the human capital investment that aims to improve their consumption in old-age through the financial support from their children. Human capital is playing a great role in developing countries' economics. The monetary transfers from children could provide a way for parents to share the fruit of economic growth.

2.4. Exchange hypothesis

Another important motive is exchange hypothesis which focuses on "exchange" instead of stabilizing family consumption. Adult children usually pay for the extra services for their parents which could be got outside the family. The exchange hypothesis is put forward by Cox (1987) which assumes that if intergenerational

transfers are regarded as a kind of unseen pay for the invisible service of children and if the service outside household is not demand elasticity, parents are willing to transfer more money to the children who earn more, because they have more economic ability to afford higher cost services to parents outside the household. Parents can get more benefits from high income children through intergenerational transfers. However, in the circumstance of altruism, parents are more likely to give support to the children whose income is lower. Generally speaking, for both parents and children, exchange motivation is a kind of intergenerational transfers that pay money to trade time or getting time in the cost of money.

On the other hand, if the service that one child provides could be substituted by other children, or be gained in the market, the intergenerational transfers will probably turn to the children who can provide the service cheaper in the exchange motivation (low income children with low time opportunity cost). But with the development of market, this kind of motivation is gradually weakened because parents can get such kind of service in the market.

From the view of transfers from children to parents, if parents can provide free services to children, children are likely to give more monetary transfers to their parents. (It's very common in East Asia and China¹¹). On the other side, from the view of transfer from parents to children, though old-aged parents have less transfer amount to give due to the low income, the probability of transfer would still increase if children could provide housework help or life care to parents.

2.5 Intra-household bargaining hypothesis

Following Becker's work on intra-household economics (Becker 1991), economist continue to complete household theories, but criticism also comes along with the assumption of Becker's theories. For instance, the household head with altruism can represent the tastes and preferences of his family. And the control of household head over family's resources allows him to allocate family wealth (Julie Nelson 1995). A theory of the recognition of gender and age-based power relations in households was developed and discussed (Folbre 1984, Katz 2002). The main idea of intra-household bargaining is that the more powerful side of the spouse can allocate more proportion of the family resources and change household's consumption structure. This influence depends on the earning ability of the person. The one who earns more may have more rights to speak. The hypothesis assumes that the intergenerational transfers are decided by the more influential side of the spouse whose characteristics determines the transfer direction and amount.

If family members and spouses have different preference, the consumption mode should be totally different. The consumption mode can be observed on the point of time, but the change of consumption is hard to be observed in a period of time. If the change of consumption of households could be analyzed, change of intergenerational transfer motives could also be analyzed. For instance, if the woman has more influence than her husband in a household and if she has more altruistic feeling towards parents, the household would transfer more to parents.

As the same as above hypotheses, this hypothesis is more likely to be observed in Asian countries. In China or other East Asian countries, man priority exists. Man

¹¹ The services include helping with the housework of children or helping to take care of grandchildren.

usually controls the family resources and with the economic development, men have more opportunities to get income. Thus they have more influence when decisions are made in households and the direction and amount of intergenerational transfers are more likely to be controlled by men. Their preference would directly influence the pattern of intergenerational transfers in families. Gender difference is widely discussed in this case. It becomes a very important determinant when analyzing intergenerational transfers.

3. Previous literatures

Due to the inadequate and poor quality of data, there are few literatures that have studied on intergenerational transfer patterns in China.

Kwok Ho Chan (2010) used the data called China Health and Retirement Longitudinal Study (CHARLS) which was collected in Jiangsu and Gansu province indicating rich and poor regions respectively. Results show that in the rich region, transfer amount increase with the increase of the pre-transfer income. One extra yuan of income will lead to 0.17-0.2 yuan transfer. But it's not consistent with altruism. In poor region, no significant result was found, which is inconsistent with altruism too. Donor's characteristics such as average age, mean year of education and their square terms significantly affect the amount of transfers. In the comparison of two regions, poor regions have more traditional thinking that sons are regarded as the major source of financial support to old parents. And these transfers partly come from the remittance of children who are working in cities. Questionnaires got from the respondents of two provinces show difference on how people view the support. Poor regions regard their children the best choice to make a living of old-age life while people in rich regions think it's better to rely on themselves.

Lu Zhou (2010) studied the effects of children's gender and birth order in rural area of China. It is the first study that connects gender and birth order to intergenerational transfers in China. The data comes from a survey which random selected 1,224 respondents in one of the rural regions¹² in 2009. The result shows that the children's gender has no impact on intergenerational transfers but children's birth order has a significant effect.

Cai, Giles and Meng (2006) used CULS (China Urban Labor Survey) data on five important cities in China in 2002 to look for evidence on how people would react to low household income when their income is under poverty line. The result shows that it is consistent with altruistic motive, though the amount of transfers is not enough to cover the shortcomings of pension system. In detail, when people's income is above the poverty line, one yuan reduction in income would increase 16 cents transfer, however, the figure is 26 cents when the recipient's income is under the poverty line. Secondly, public pension system will not rule out private transfers even the income level is quite low. The paper suggested that designing policy that can encourage children to meet their filial obligations would be quite helpful in today's social background.

Liu and Reilly (2004) analyzed the data on male migrant workers in Jinan in 1995, the capital of Shandong Province. The paper aims to study the migration behavior at the micro level and the determinants of private transfers from the migrants to their rural

¹² Chaohu area, Anhui province

households. The results show that migrants' education level has little influence on either the event of remittance or the amount of remittance, which is inconsistent with the work of Knight (1999) before¹³. However, this research could not find evidence to differentiate altruistic or exchange motive. Moreover, the selection bias may exist because all data is exclusively male migrants. But as the author claimed that the survey was not designed to test the migration decision itself. In order to eliminate the influence of intra-generational transfers, they also tested non-married migrant workers. But no significant correlation between recipients' income and the remittances could be found.

Except the data on Chinese mainland, several papers based on the survey carried out in Taiwan could bring ideas on how to analysis intergenerational transfers in the particular Asian background.

Lin, Goldman, Weinstein and Lin (2007) analyzed high quality data in 1989 and 1999 on the Survey of Health and Living Status of the Elderly in Taiwan which basically consists of same households during the ten-year gap. Information was collected in four kinds of intergenerational transfers: help with daily activities living, household work help, financial support and material support. However, the paper only used financial support as dependent variable. The aim was to study whether people's behavior would change over time and how old-aged demographic and economic characteristics affect the changes. Two-thirds of the old parents received stable financial transfers from children and the empirical results are in favor of altruistic hypothesis: poor parents without working, pensions or assets are more likely to receive transfers. However, separated parents, or the widowed, or the divorced are not likely to receive support from children. And more children in the household would bring more financial support to their parents.

Another paper on Taiwan focused on theory of social network that could explain children's behavior to their parents. Chu and Yu (2007) put forward a theory that in Taiwan the main motive behind transfers to old parents is the norm instead of the benefit from assets. The data was collected during 1999 and 2000 and consisted of detailed demographic and economic characteristics of the respondents and their parents. Compared to other papers, it included the distance of residence variable indicating how far the married children lived away from their parents. It also included parents' assets allocation status which could examine whether the distribution of assets before transfers would have an impact on transfer behavior of children, because the possibility of bequest return from parents for children's services was excluded. Results are quite consistent with common sense. Children with higher education and living far away from parents intend to transfer more money, which could be regarded as a compensation for not being around and taking care of parents' old life. Closer distances that children live away from parents mean closer kin network, which could also impact the amount of transfers. Children who have tighter kinship network towards parents would transfer more money.

Different papers' studies mainly focus on the points similar to this paper: what's the motive of intergenerational transfers from children to parents? Is it altruistic? What are the determinants of transfer patterns? Different source of data may conclude different results even the date was collected in same regions. This may indicate that the quality

¹³ In Knight's research, education level is significantly correlated with the remittances from migrant workers to rural households.

of data is not credible enough which means the survey methods needed to be improved in some ways.

4. Empirical Analysis

4.1 Data

The datasets that are used to examine come from a survey called Chinese Household Income Project¹⁴ (CHIP). The project was conducted in three years in urban and rural areas in China: 1988, 1995 and 2002. The purpose of this survey is to measure the distribution of people's income and expenditure in urban and rural area in China. For the dataset in 1988, no valuable information could be found about the description of intergenerational transfers. So this study will focus on the datasets in 1995 and 2002. The questionnaires and datasets in rural and urban are separated in each year. The questionnaires are basically similar in both years covering demographic features and economic factors gained in the form of on-site observation and face-to-face interview, but the questionnaire of rural area is specially designed to fit different situation compared to urban regions. To differentiate different sources of information, the questionnaire is also divided into individual and households.

The advantages of the dataset series in studying intergenerational transfers are obvious. Firstly, they provide a wealth of information about the possible determinants of intergenerational transfers. They have information about age, gender, marital status, education year, health status, labor market participation, income sources of the household head and household members, and also include the income and expenditure structure of the household. These characteristics are all crucial for the empirical analysis of intergenerational transfers. Moreover, as a part of income and expenditure distribution, questions about transfer income and transfer expenditure were asked. In the questionnaires of individual, transfer income includes pension, compensation, insurance benefit, donation, fee from the relative and friend who regular eat in and so on, among which the data of "transfer for aged" is listed. In the questionnaires of households, transfer expenditure for aged is also listed.

Secondly, previous studies in china could not distinguish intergenerational transfers and intragenerational transfers (Kwok Ho Chan 2010). They used the datasets which combine financial transfers and remittances from family members outside the household and friends. However, in these datasets, intergenerational transfers could be differentiated from intragenerational transfers. In original questionnaires written in Chinese, the item indicating "transfer for aged" under the item of transfer income is called "Shan Yang¹⁵", which particularly means the money from children to parents, not from friends or relatives.

The datasets still have some defects to analysis intergenerational transfers. Firstly, household data is not family data. Though it can be figured out the number of people living in this household including their relationship with the recipient, it's impossible

¹⁴ The Chinese Household Income Project is a joint research effort sponsored by the Institute of Economics, Chinese Academy of Sciences, the Asian Development Bank, and the Ford Foundation. Additional support was provided by the East Asian Institute, Columbia University.
<http://www.icpsr.umich.edu>

¹⁵ Shan Yang means the economic support, life care spiritual comfort from children to parents in Chinese. Detailed definition refers to "Protection Law for the Old-aged in People's Republic of China".

to know how many children the recipient has. For example, if the household head is an old-aged father, household data shows that he lived with a son, it has no way to know whether the son is the only child in this family, the parents may have other children living outside this household. Number of children is tested to be a significant explanatory variable to the transfer behavior in previous work of economists. Thus, an important explanation may be lost in this analysis. Secondly, the datasets have no information about the donors. The respondents were asked how much they got in the item of “transfer for aged”, but they are not supposed to answer which children delivered the transfers, from male or female children, equally distributed among children or the rich children afford more transfers. So it’s impossible to know the donor’s characteristics. Ideally, an analysis of inter vivos transfers should have information about both donors and the recipients. In reality, it’s impossible to identify and match the related donors, which may lose an important aspect to study. In the context of unavailable of such information, it is also quite common to focus on one side (on donors or on recipients separately) (Bhaumik 2007). Thus, this paper is going to analyze the intergenerational transfers from recipients’ side. Thirdly, the individuals and households interviewed in 1995 and 2002 are not the same individuals and households, which is a pity because if they are the same, it would be more meaningful when analyzing whether people’s behavior changes over time. Different characteristics of people could also pose different economic behavior on the individual basis. However, in the background of lacking high quality dataset, it’s also meaningful to observe different results in people’s behavior in two different years, and it could demonstrate the patterns of people’s behavior in the macro-environment as well.

The original dataset of rural area in 1995 consists of 34,739 individuals and 7,998 households covering 19 provinces in the nation both north and south¹⁶ and urban dataset covers 21,698 individual and 6,931 households. Dataset of rural area in 2002 consists of 37,969 individuals and 9,200 households and urban covers 27, 818 individuals and 6,835 households. After the process of data, the rural data for both years shrinks to 5,559 and 800 individuals, while for urban area, the figure is 5,073 and 5,681 individuals.

4.2 Explanatory variables

The choice of explanatory variables mainly refers to previous studies regarding the field of intergenerational transfers, covering demographic characteristics, income and wealth of recipients. And it also refers to the specific characteristics of these datasets. In detail, they are age, gender, education, marital status, health condition, working status, financial assets, debt, income, household size, house dimension and the ownership of the house. These explanatory variables are thought to have impact on people’s behavior more or less.

Since the paper is going to study intergenerational transfers, appropriate adjustment on the datasets is required to fit the new situation. Besides the missing data is peeled from the datasets, several adjustments are as below. First of all, the age of recipients is set over 50. In China, female workers retire at the age of 50 if they don’t retire from the public institution or government offices, while men retire at the age of 55¹⁷. In order to keep the consistence of data, the age of all individuals is set above 50. When parents

¹⁶ In detail, the 19 provinces are: Beijing, Hebei, Shanxi, Liaoning, Jilin, Jiangsu, Zhejiang, Anhui, Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Sichuan, Guizhou, Yunnan, Shanxi, Gansu.

¹⁷ It is stated in Interim Provision of Retired or Resign released by State Council, 1978, document no.104.

are at the age of 50, their adult children usually have started working and have income, so they probably have the ability to give the monetary transfers to parents. As to the income, it's necessary to calculate it into pre-transfer income which gets rid of the influence of other forms of transfers (including pension, government compensation, donation from other people and presents from relatives). In order to eliminate the impact of inflation, the amount of income, assets and transfers in 2002 is turned into the correspondent amount of the level in 1995. As it shows in *Compile of Statistics of 60 years in China* published by China Statistics Press of National Bureau of Statistics in Jan 2010, the consumption price index in 2002 is 1.08 times as the one in 1995 in rural area and 1.1 times in urban regions¹⁸. In addition, in order to get a more credible result of the effect that the income of recipients influences the transfer amount from children, the income of recipient is transformed into logarithm in Tobit model. The distribution of original statistics for both years is shown in table 1 and table 2.

For rural area in 1995, the data of intergenerational transfer may be downward biased because it doesn't include the remittance of children who is working in cities, which is widely observed in people's behavior today. However, compared to the figure in urban, the proportion of receiving transfer from children is still quite low. In both regions, it is clear to be observed that the amount of income and financial assets when transfers are observed is higher than the amount when no transfers are observed, which indicates that people with more wealth is less targeted for being transferred. The gap of income and financial assets between rural and urban area is large. However, in rural area, the debt of recipients seems not to be a reason for children to give money to parents, because the higher debt is observed when no transfers are made. In rural area, houses are privately owned by recipients, but in urban regions no more than 50% of the recipients have private owned house. No pension was received by recipients when transfers were received, which indicates that lack of social security system in rural region may be a reason that children would give support. But it doesn't support the logic in urban, because recipients with more pension also get more transfers than those who get less pension. Regarding the recipients' demographic data, no obvious sign could be seen from the description, but working status of parents may be a reason in both regions for children to transfer money, because it shows significant difference on figure between transfer received and no transfer received. In the dataset of 2002, same things happen to the pension data in urban. When parents receive pension, they seem to receive more intergenerational transfers from children. The amount of debt in recipient's household is not a reason for transfer, because more debt corresponds with less transfer amount.

Comparing the different years, transfer amount in rural area has increased a lot. In 1995, the amount of transfer in urban is three times as the figure in rural area, however, in 2002, the figure shows to be more equal. This may be due to the quick economic development in rural area that people's income and living standard is improving. The gap between rural and urban is shrinking. Moreover, it is interesting to see that the proportion of people that receive transfers in two regions changes a lot. In rural area, the proportion of receiving transfers increase to about 10% in seven years, but in urban area, the proportion of receiving transfer from children reduced to about 10%. It may indicate that in rural area, more and more parents are receiving transfers from children as the time passes by, but in urban area, parents are more independent and rely on other

¹⁸ The consumer price index is 291.4 and 315.2 in 1995 and 2002 in rural area based on 1985=100, while in urban area, the data is 429.6 and 475.1 in two years based on 1978=100.

source of income. For instance, pension or self-employment in business may become the main economic sources.

Table 1. Descriptive statistics for rural and urban in 1995

Variable	Rural		Urban	
	TRD95=1	TRD95=0	TRD95=1	TRD95=0
<i>Transfer</i>				
TRA95	299.3256(349.1424)	0	945.2944 (1293.521)	0
<i>Income & Wealth</i>				
Income	430.1705(1197.713)	509.7376(2737.124)	2493.772(4385.107)	6631.607(8691.559)
Financial assets	4207.38(5923.846)	5131.038(8958.886)	13033.78(28604.74)	40355.32(74744.81)
Debt	339.1705(726.6429)	510.8578(2356.309)	669.7237(4168.228)	32.7869(362.143)
House ownership	1	0	0.4118(0.4922)	0.4508(0.4996)
House area	96.5892(59.3586)	104.1941(60.342)	53.0186(29.8291)	47.1066(22.8429)
Pension	0	24.6584(291.0255)	4530.418(2389.555)	2858.934(3471.846)
<i>Household head characteristics</i>				
Age	63.6512(10.2543)	60.6764(9.4575)	60.3175(8.0443)	59.7787(8.2005)
Male	0.4961(0.5019)	0.5227(0.4995)	0.5155(0.4998)	0.5328(0.5010)
With spouse	0.7907(0.4084)	0.8149(0.3884)	0.8857(0.3182)	0.8867(0.3170)
Employed	0.5039(0.5019)	0.6164(0.4863)	0.3363(0.4725)	0.4344(0.4977)
Disabled	0.0698(0.2557)	0.0755(0.2642)	0.0139(0.1172)	0.0164(0.1275)
Schooling	3.3721(3.5002)	3.1814(3.2842)	9.2426(4.0443)	8.8115(5.1831)
<i>Household Characteristics</i>				
Household size	3.7209(1.8370)	4.6820(1.6218)	3.1850(1.1320)	3.6885(1.1928)
Number of observations	129	5,430	4,951	122

Notes:

(a) Standard errors are reported in parentheses.

(b) ***Denotes statistical significant at the 1% level. **Denotes statistical significance at the 5% level and * denotes statistical significance at the 10% level.

Table 2. Descriptive statistics for rural and urban in 2002

Variable	Rural		Urban	
	TRD02=1	TRD02=0	TRD02=1	TRD02=0
<i>Transfer</i>				
TRA02	1099.707(1526.652)	0	1312.839(2286.332)	0
<i>Income & Wealth</i>				
Income	650.4545(2608.619)	857.1769(2964.799)	2472.916(5795.197)	4904.257(7728.5)
Pension	190.6667(1304.05)	57.0114(502.1962)	5945.607(5700.16)	4871.038(5682.737)
Financial assets	7170.384(10389.59)	7540.917(12872.81)	31007.52(43241.9)	42240.08(75929.77)
Debt	356.5657(1055.081)	933.1526(3595.398)	2625.123(12176.69)	5677.259(80516.45)
House ownership	1	0.9872(0.1127)	3.4193(1.2731)	3.5142(1.2355)
House area	103.7273(53.0190)	124.4208(65.0979)	52.1384(21.3633)	55.5443(28.1019)
<i>Recipients characteristics</i>				
Age	61.1616(8.9985)	58.9557(9.0640)	62.9157(8.4930)	59.3878(8.5571)

Male	0.5354(0.5013)	0.5363(0.4990)	0.5012(0.5006)	0.5103(0.4999)
With spouse	0.8283(0.3791)	0.8531(0.3543)	0.8289(0.3770)	0.8954(0.3061)
Employed	0.6667(0.4738)	0.6776(0.4677)	0.1855(0.3892)	0.3179(0.4657)
Disabled	0.1010(0.3029)	0.0785(0.2691)	0.0193(0.1377)	0.0137(0.1161)
Schooling	5.1087(2.8649)	5.1211(3.2203)	8.3511(4.0823)	8.9406(4.0873)
<i>Household Characteristics</i>				
Household size	3.5657(1.5660)	4.2539(1.5950)	2.7084(1.0920)	3.1181(1.0939)
Number of observations	99	701	415	5,266

Notes:

(a) Standard errors are reported in parentheses.

(b) ***Denotes statistical significant at the 1% level. **Denotes statistical significance at the 5% level and * denotes statistical significance at the 10% level.

4.3 Econometric Framework

Based on the hypothesis, the paper is going to test what's the probability of receiving transfers and how much would a recipient get from the donors. In order to examine the probability and magnitude of transfers, the stylized practice is to use Probit and Tobit model, which is widely applied in the existing literature (Bhaumik 2007, Kwok Ho Chan 2010, Chu and Yu 2007, Liu and Reilly 2004). In probit model, intergenerational transfers are regarded as a binary indicator of decision making. When a decision is made to transfer, it turns to be 1 and otherwise 0. The equation could be expressed as follows.

$$TRD_{year}^* = a_0 + a_1 I_i + a_2 X_i + u_i$$

and

$$TRD_{year} = \begin{cases} 1 & \text{if } TRD_{year}^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

where TRD_{year} indicates the dummy dependent variable that determines receiving or not in a given year, TRD_{year}^* means the exact amount that the recipient received, I_i expresses individual's pre-transfer income of recipient, X_i is the vector indicating different determinants that may impact on transfer decision making, u_i is the error term whose mean is zero, i index the different individuals. According to the hypothesis of transfer motive, the altruism and exchange will all make the coefficient of income a_1 negative.

For the amount of transfer, the equation is as follows.

$$TRA_{year}^* = b_0 + b_1 I_i + b_2 X_i + \varepsilon_i$$

and

$$TRA_{year} = \begin{cases} TRA_{year}^* & \text{if } TRD_{year}=1 \\ 0 & \text{if } TRD_{year}=0 \end{cases}$$

TRA_{year} is the observed data received by the individual in a given year in the condition that the transfers are actually made. Otherwise, the value of transfer is 0. Other variables are as the same as the above equation. The coefficient of income b_1 is the key point which is no longer interpreted into the effect of income on transfer amount, but a combination of probability equation. And it's the focus to figure out motive of donors. The information can be known in previous background that altruistic motive has negative relationship with income while exchange motive is positive in the case of

inelastic demand of the donor. Thus, the expected coefficient for income should be negative and significant and moreover, the coefficients for other determinants should be positive in the case of altruism if they influence the donor's behavior. The reason that ordinary least square is not used here is that the latent variable TRD_{year} cannot always be observed when income is observed. In the case that transfer is not randomly made to recipients, ordinary least square estimation which may cause bias is no longer valid. So Tobit model is used here as a special case of censored regression model.

How to properly use Tobit model in the case of intergenerational transfers is widely discussed, because bias may exist. Some researches claim that an individual with high probability to receive transfers, the amount of transfer may also be high (Jurges 1999), so a two-step methods developed by Heckman (1979) is widely used in this case. He used probit model in the first stage and corrected the bias of selection problem in transfer amount and used ordinary least squares estimates in the second stage. The sample selection bias usually arises because of a self-selection problem when an individual is investigated or because of an operation problem when analysis and data processor tend to treat data in the same fashion. Heckman's correction involves a normality assumption and an exclusion restriction that is required in the model in order to generate credible estimates. Specifically, an extra variable used as exclusion restriction should be included in the probit model (the first step). In several articles of intergenerational transfer analysis, different kinds of variables are used. For example, whether the parents take care of their grandchildren is used as the exclusion restriction (Kwok Ho Chan 2010) or household land ratio is used (Liu and Reilly 2004). However, only in the case that there's high correlation between the error terms and the collinearity exists among independent variables in the selected samples, Heckman's two steps should be applied (Puhani 2000). Whether to use Heckman's two steps should be decided case by case.

Besides the contribution of Heckman, the work of Escanciano, Chavez and Lewbel (2010) on the two step estimator provides researchers new ways to examine the datasets and gain valid estimates. The identification found on functional form without exclusions or instruments could be achieved using semi-parametric model. In practice, it needs variables having impact on first step nonlinearly and second step linearly (Kwok Ho Chan 2010). It simplifies the procedure of testing.

In this paper, Heckman's two steps are not used because in rural area, the variables do not show strong correlation with each other. In urban area, employment status shows comparatively strong correlation with pre-transfer income, because if a recipient is working, he would probably have more income. In consideration of this, the Tobit model test in urban area doesn't include the employment status as a variable, which get the results better than including it.

5. Results

5.1 Determinants of probability of transfers

The probit estimates of rural and urban regions in two years are presented in table 3. In 1995, age, schooling, employment status and household size are four significant explanatory determinants that would influence people's decision on whether making transfers to the old-aged in rural area. One year older of the recipient would increase the probability of receiving transfers by 2.2%. One more year schooling would bring 4% to 5% more chance for the recipients to get transfers from children. If the recipient is working in the year, the probability to get financial support is lower than those who

are not engaging in employment. The lowered probability is from 20% to 30%. Household size is negatively correlated with the dependent variable. Fewer people living with parents would increase the probability of receiving transfers by 20%. Wealth of recipients doesn't show any significant result. In urban area, gender, marital status, employment status, years of schooling, household size, income and financial assets are the variables that show significant impact on the behavior of children. The probability of receiving transfer is nearly 50% more if the recipient is male. Father has more chance than mother to get money from children. If the recipient has a living spouse, the probability of get support increases from 60% to 80%. If parents are working, the chance that they could get monetary support from children would be 62.4% less. Less years of schooling will make the children having no intent to give money. If the number of person decreases by one, the chance to receiving transfers would increase 40%. As for the wealth of recipients, less income and financial assets would make children to transfer. If the recipient hasn't his own house, he has more opportunity to get financial support. The same thing happens if the recipient has smaller house area.

In 2002, the situation is different. In rural area, age, household size, personal income and pension are the variables having impact on decision making. Recipients could have 2.2% more chance to get financial support if they are one year older. Household size still has significant effect on transfer decision. If the number of people decreases by one in the household, the recipient would have 16% more probability to receive financial support from children. The recipients who receive pension from government have more probability to get money from children. Lower income of parents will make children to give more money. In urban area, age, household size and income are the three determinants of transfer decision. Recipient's personal characteristics don't influence the decision of children much. Children prefer to transfer money to those who have fewer cohabitant and less income.

Comparing the different regions, schooling, employment status and household size are all significant factors that impact on children's behavior in rural and urban area in 1995. But in rural area, the factors children concern are more likely to be their parents' personal characteristics. In urban area, children would also pay attention to the wealth parents owned. In 2002, the patterns of determinants are consistent in rural and urban region. Age as an important factor is significant all the way. Marriage status such as whether the recipient is widowed or divorced doesn't influence children's behavior in both regions, which is out of expectation. Household size is still the key factor. In table 1 and table 2, we can see that the average household size is smaller in urban area than rural region. In both regions, children would like to give financial support to parents as a kind of compensation for not living with them and not taking care of them by side.

Comparing the different years, in a gap of seven years, parents' characteristics are no longer key factors that influence the decision making, because in 1995, we find a lot of personal characteristics have impact on children's behavior, but in 2002, the only factors that would influence are age and household size. The probability of receiving transfers affected by age doesn't change a lot through the years. The effect of household size on probability of getting money decreases over the years, especially in urban area, it reduces half. It indicates that though children would transfer money to parents for not living around, the influence is getting smaller. Other personal characteristics are no more significant in 2002. Table 1 shows that the education level is quite low in rural area in 1995 with an average of three years in recipients, which has a big gap compared to urban ones. However, sever years later, it has increased to five

years education, while the urban recipients have a stable education level of eight to nine years. When the gap of schooling of people is shrinking, it becomes an insignificant explanation for children's transfers. In rural area, income and pension become the important factors over the time. But in urban area, the wealth of parents is not focused by children any more, except the income of the recipient.

Table 3. Probit estimates of net transfer amount received

Variables	1995		2002	
	Rural	Urban	Rural	Urban
<i>Characteristics</i>				
Age	0.022 (0.005)***	-0.012 (0.013)	0.022 (0.009)**	0.0175(0.003)***
Male	-0.077(0.088)	0.468 (0.181)***	0.042 (0.143)	0.072(0.051)
With spouse	0.121(0.114)	0.590 (0.243)**	0.134 (0.208)	-0.117 (0.087)
Employed	-0.199(0.105)*	-0.624 (0.242)***	0.163 (0.167)	-0.056 (0.090)
Disabled	-0.162(0.154)	---	-0.077 (0.260)	-0.081(0.227)
Schooling	0.040(0.014)***	-0.043 (0.021)**	-0.006 (0.025)	0.001 (0.007)
Household size	-0.191(0.028)***	-0.389 (0.059)***	-0.160(0.044)***	-0.183 (0.025)***
<i>Income & Assets</i>				
Pension	---	-0.00002 (0.00003)	0.0002 (0.0001)**	-0.00000422 (0.00006595)
Income	-0.00000315 (0.00001)	-0.0001 (0.00003)***	-0.00008 (0.00004)*	-0.00001 (0.00000639)***
Financial assets	-0.00000668 (0.00000624)	-0.00001 (0.00000321)***	-0.00000221 (0.00000551)	-0.000000869 (0.000000569)
Debt	-0.00002(0.00002)	0.0002 (0.0002)	-0.00007(0.0004)	-0.00000134 (0.0000017)
House ownership	---	-0.588 (0.170)***	---	-0.013 (0.020)
House area	0.0009(0.0007)	-0.011 (0.004)***	-0.001(0.001)	0.00002 (0.001)

Notes:

(a) Standard errors are reported in parentheses.

(b) ***Denotes statistical significant at the 1% level. **Denotes statistical significance at the 5% level and * denotes statistical significance at the 10% level.

5.2 Determinants of transfer amount

Table 4 presents the estimate results of the net transfer amount recipients get from children. In 1995, age, gender, marriage status, pension and financial assets are the main significant explanatory variables that impact the transfer amount from children in rural area. When parents are getting older, the amount of received transfer would increase accordingly. The recipients who are one year older get 1 to 1.5 extra yuan from children. If the recipient is male, the amount of transfer from children would decrease by 23 to 30 yuan. It may indicate that children would transfer more money to mother rather than father. This phenomenon can be explained that in rural area, women usually don't participate in working, so they would probably get no income and children would transfer more money to them. If the recipient has a living spouse, they receive less money than those who has divorced or being widowed. For those who has pension from social security system after retirement, they receive less from children. It makes sense that if parents can get money from other sources, children would limit their support. Financial assets show slightly significant impact on net transfer amount. More financial assets reduce the amount of transfer. In urban regions, age and income significantly affects the transfer amount. One year increase in age would get 10 to 15 extra yuan transfer from children, which is 10 times the number in rural area. Refer to

the income listed in table 1 and table 2, it can be easily understood that when children have more money, they transfer more to their parents. Income as a strong explanatory variable in the intergenerational transfer is significant here. 10% increase in income corresponds to 2.3 to 3.4 yuan increase in transfer amount.

In 2002, age, household size and house size are three strong explanations for rural area. Due to the increasing income of rural people, one unit increase in age would get 7 to 10 extra yuan transfer from children. More people living in household reduce the transfer amount by 26 yuan or more. The reason is that children can do housework for parents, provide spiritual care if they live together. And adult children are responsible for the expenditure of whole household, so parents have no need to pay living expense. Parents with big house expressing that the living condition is good are less likely to receive more money. In urban regions, age is still a significant explanation for receiving more money, the same as household size. Income turns out to be a strong explanation for transfer amount. 10% increase in income would reduce 2.6 to 3.5 yuan in transfer amount.

Comparing the different regions, the disabled of parents or education level doesn't influence the transfer amount children would give throughout regions. Either does financial assets, debt and whether parents have their own house. Marital status and gender are never the reason in urban regions, which reflects that in urban area, children treat mother and father in an equal way. Income is significant for urban area but not for rural area, though the direction is totally different over the years. In 1995, parents with more income would get more transfers and in 2002, parents with lower income would get more money from children.

Comparing the different years, age is the significant factor all the way. The difference is that in 1995, the gap of received money from children between rural and urban area is large, however, in 2002, when parents are getting one year older, the money they could get from children is equal (around 7 yuan) in rural and urban regions. Household size influenced the transfer amount in both rural and urban area in 2002, but is not significant in 1995. And if the household size is smaller by one person, the money parents get from children increase more in 2002 than the amount in 1995.

Table 4. Estimates of net transfer amount received

Variables	1995		2002	
	Rural	Urban	Rural	Urban
<i>Characteristics</i>				
Age	1.141(0.408)***	10.640(4.436)**	7.083(3.631)**	7.154(2.621)***
Male	-23.532(7.518)***	11.663(49.961)	-7.052(39.417)	18.395(26.078)
With spouse	-19.830(9.558)**	-24.782(84.470)	67.384(79.352)	-44.865(57.700)
Employed	-8.875(7.323)	---	79.352(63.740)*	---
Disabled	-31.555(24.948)	-126.849(747.567)	-75.986(97.019)	-127.360(178.331)
Schooling	0.827(0.780)	-7.667(6.191)	-2.773(9.196)	3.202(3.743)
Household size	-0.305(1.475)	-16.945(20.505)	-26.489(15.178)*	-41.399(12.330)***
<i>Income & Assets</i>				
Pension	-0.007(0.003)**	0.014(0.010)	-0.006(0.035)	0.004(0.003)
lnIncome	2.167(1.546)	23.680(12.966)**	4.462(17.288)	-27.033(10.491)**
Financial assets	-0.0003(0.0002)*	-0.00001(0.0007)	-0.0001(0.001)	0.00008(0.0001)
Debt	-0.0009(0.0008)	-0.004(0.007)	-0.007(0.007)	-0.00004(0.0001)
House ownership	10.657(1.546)	45.253(47.167)	15.082(78.157)	4.512(9.539)

House area	0.002(0.035)	-0.308(0.751)	-0.194(0.390)*	0.185(0.455)
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Notes:

(a) Standard errors are reported in parentheses.

(b) ***Denotes statistical significant at the 1% level. **Denotes statistical significance at the 5% level and * denotes statistical significance at the 10% level.

5.3 Transfer motive of children

As one of the questions in this paper, what's the motive for children to make intergenerational transfers to parents is to be examined. According to the altruistic theory, altruistic behavior predicts that the donor's utility should be positively correlated to the wealth of recipients, which means that the transfer amount in the Tobit model should be positively correlated to the income of the donor. In this case, the increase of income of children will lead to the increase of probability and the amount they transfer to parents. From the view of parents, if their income is decreased, they are more likely to receive transfer with increasing amount from children. For the exchange motive, the increase of donor's income would also increase the probability and amount of transfer, because it's the payment for service exchange as discussed above. But the donor's demand elasticity will have different impact on his behavior on transfer. In detail, if the demand is elastic, the donor will look for cheaper substitution for the same kind of service he needs, thus he would reduce the transfer amount to parents. However, if the demand of service is inelastic, he will probably transfer higher amount to get the service within the household. Thus, if the intergenerational transfer is motivated by exchange, the result will show positive correlation between parents' income and transfer probability or amount.

To this extent, altruistic and exchange model all observe negative correlation between donor's behavior and recipient's income, but if the increasing income of recipient trigger the high likelihood to get transfer or get higher amount, the only possibility is explained by exchange motive.

In this study, we can see from table 3 that the relationship between parent's income and the possibility of receiving transfers from children is negative correlated in both rural and urban area. In table 4, the income of recipient in rural area in both years is positive correlated with the transfer amount but they are not significant. In urban area, the results show strong significant over time. In 1995, income of recipients had a significantly positive relationship with transfer amount which could be only explained into exchange motive. In 2002, the result turns into negative in 1% significant level which could be explained into altruistic and exchange motive both, so it's not consistent with altruistic motive. Combined the result of probability examination and the estimates of transfer amount, the 2002 urban data shows the consistent behavior of children to parents: higher income of recipients will have less chance to get the transfer and when a transfer occurs, it seems to be in less amount. However, the result is not consistent with altruistic motive.

The findings are very important to public policy because whether public transfer such as pension and government compensation for the retired has an effect of crowd out private transfer is widely discussed in the field. If the transfer is motivated by altruism, the pension retiree get from government would increase their income and reduce the amount that children would give. The well-being of retiree is unclear but could be figured out by testing how much extent the crowd out would be. If the transfer is triggered by exchange motive, increasing pension or compensation would help the

recipient to get more from children which obviously could polish up their fortune and living standard.

6. Discussion

6.1 public transfer and private transfer in China

Whether public transfer would crowd out private transfer is a heat topic nowadays. Taking another angle of view on the datasets, for example, in rural area 1995, all the recipients who receive pension didn't get money transfer from children (see table 1) and the results gained from Tobit model show that pension is significantly negative correlated with the transfer amount. In urban area 2002, more than 3,000 recipients in the dataset who had pension income didn't receive transfer from children.

In 1997, an important reform is conducted in national pension system in order to establish a unified pension system that could be suitable for urban employees all over the nation¹⁹. And minimum living standard security system is firstly set in 1999. CHIP survey which is carried out in 1995 and 2002 is just before and behind the reform year. Changes in interaction patterns of public transfer and private transfer could be observed. He and Sato (2008) analyzed the same dataset in order to study the redistributed income and pension system prevailed in China. However, due to the great difference of social security system in different regions, they did the study only on urban data. Interesting findings have been gained. They found that the redistributed income based on social security system is not from high income group of people to low income, but from labor workers to old-aged people, which means that the income redistribution in social security system mainly works on intergenerational transfers instead of on different income levels of workers. The function of social security system to shrink income gap is declined in 2002 compared to 1995. When redistribution of social security system mainly relies on intergenerational transfers, it will easily meet financial crisis in the background of population aging.

7. Conclusion

This paper studies the patterns of intergenerational transfer in rural and urban China. It tries to address the following questions. Firstly, what are the determinants of transfer decision making and of transfer amount? Secondly, do patterns of transfer differ from regions and change over time? Thirdly, what's the motive for children to make transfer? Is it altruistic?

This paper uses the survey of Chinese household Income Project which contains two different years 1995 and 2002, and covers 14 different provinces and regions in China to testify the questions put forward. And as a result, it concludes some findings as below.

Regarding the first question, empirical analysis shows that in rural area, recipients' characteristics are significant factors that would influence the decision making of children to give transfers or not, but in urban area, children are more likely to focus on the income and wealth their parents possess when making decisions in 1995. Seven years later, recipients' characteristics are no more influential factors, pension in rural area and income of both regions show the significant impact on transfer making. With

¹⁹ The document named "The decision of establishing a unified system of basic pension insurance for enterprise employees by State Council, [1997]26".

regard to the amount of transfer, age, gender, marriage status, household size, income, pension and financial assets are influential factors distributed in different regions and years.

For the second question, the number of people living with parents is one of the main factors that influence children's decision making for transfers in both regions. The explanation as discussed above is that people who don't live with parents are more likely to provide financial support to parents for not being able to take care of them regularly. Rural children like to transfer more to mother while urban children prefer to transfer more to father. In urban area, women are more likely to have other economic sources but in rural area, money from children is the only source for female. Wealth of parents possess is more likely to be reason in urban regions but not in rural. By the change of time, gender and schooling of parents are no longer significant factors that would influence, parents are equally treated. And income becomes a very important factor that influences the amount of transfers in urban area. 10% increase in income of recipients would reduce 2.6 to 3.5 yuan in transfer amount in 2002.

As to the third question, in 1995 urban area, the transfer amount is positive correlated with recipients' income which could be regarded as an evidence of exchange motive. In 2002, urban data shows that the probability and transfer amount is significantly negative correlated to income. However, negative correlation could be explained into altruistic or exchange motive either. So the altruistic motive is not supported here. It is unclear about the rural area because the data doesn't show any significant results.

The results of empirical analysis have important policy implications. In the background that social security system is not complete, especially in rural regions, people should be encouraged to provide family support to old-aged parents including financial support and mental care. Nowadays, old-aged parents are more likely to choose living closer to children. It's not in the consideration that they can rely on children. Instead, it's a way to take care of each other. The intergenerational support among father generation and younger generation exerts great social and economic benefits in the background that the old-age support industry in China is still in the phase of beginning (Zhu Dong-mei 2008). For example, if old-aged parents can provide spiritual and monetary support when their adult children are laid off from work, it would ease a lot of pressure on children and on the society as well. In rural area, if parents could help taking care of grandchildren when their children are working in cities, the benefits are not limited in the family. On the other hand, government should make more efforts to enlarge the coverage of social security system. In the data sample of this paper, the coverage of pension is small and the amount of transfer is also not large, especially in rural regions. So how to balance the social security system in urban and rural area would be a heavy task for Chinese government to deal with. Besides the family support and government policy, to develop the function of communities who could provide convenient and considerate services and activities for old-aged people living in neighborhood would also help to offer spiritual consolation when adult children are working in the day time. Only under the efforts of three parties, the old-age business in China could be carried out effectively. And at the same time, relevant laws should be improved to protect the interests of the elderly.

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Appendix

List of Variables

Transfer received	Dummy variable with binary value on if a transfer was made
Transfer amount	Amount of transfer made to parents in yuan
Income	Annual income in yuan for the given year
Pension	Annual pension the recipient received in the given year in yuan
Financial assets	Total amount of financial assets the recipient possessed in yuan
Debt	Total amount of debt in the year the recipient owed in yuan
House ownership	Dummy variable describes whether the recipient owned a private house
House area	The square meter that the recipient living in
Age	The age of the recipient in the survey year
Male	Dummy variable describe whether the recipient is male or not
With spouse	Dummy variable express whether the recipient had a living spouse in the year
Employed	Dummy variable of employed or not in the survey year
Disabled	Dummy variable if the recipient is disabled or not
Schooling	The education year that the recipient had finished when the survey conducted
Household size	The number of person living in the household