How private transfers respond to parental income in urban and rural China? Evidence from national surveys

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China is entering a new historical era that has as its demographic hallmark an ageing population. The fact that China is ageing before it becomes a modernised, wealthy country, presents serious challenges, one of the most direct and important of which relates to support for older members of society. Intergenerational transfers are vital, because in all types of economies they help to smooth out consumption over the economic life cycle and, in particular, finance income deficits during the long "dependent" periods of childhood and old age. This is particularly true in China where, on the one hand, only half of its retired population are coved by formal pension scheme; On the other hand, within Confucian paradigm, traditionally, old parents are taken care of by their adult children. Empirical analyses which have considered how attitudinal characteristics of parents and children determine transfer behaviours, and distinguishing different transfer motives, have been of great interest within academic and policy-making circles. Several theories modelling intergenerational transfer motive have been developed, among which the altruism and exchange hypotheses are fundamental to most other theories, and form the basic framework in this field. Identifying the transfer motive is crucial, because it helps improve the effectiveness of social welfare programmes, and distributes the cost of ageing between generations in society.

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This study examines how private transfers respond to parental income by using two nationally representative datasets: The Sampling Survey of the Aged Population in Urban/Rural China and the Follow-up Sampling Survey of the Aged Population in Urban/Rural China that were conducted by the China Research Center on Ageing (CRCA) in 2000 and 2006 respectively, covering 20,000 samples aged 60 and over. The main target is to distinguish between altruistic and exchange-based transfer motives. Emphasis is also placed upon a comparing and contrasting urban and rural differences, in order to observe how different settings of economic and societal development influence transfer behaviour. The dataset and methodology used in this study have some clear advantages over previous empirical studies of intergenerational transfer in China. The surveys collected information from older people directly, allowing me to differentiate between intergenerational transfers and intra-generational transfers. In providing data on pensions received by older people in China, the surveys also afforded me the opportunity to directly investigate and analyse the relationship between public transfers and private transfers from the children of the older people concerned. Thirdly, the panel nature of the two datasets enabled me to reduce bias from non-time-varying endogenous variables. In addition, the non-linear methods I have adopted to investigate transfer motives in this study enabled me to take into account the co-existence of multi-transfer motives, and to present a non-parametric relationship between public transfers and private transfers.

1. Factors determining the incidence of financial support from children

The dependent variables in this section are the incidence of old parents receiving from children a larger amount of financial transfer than the amount parents gave

(Yes=1, No=0). Moreover, if the amount the parents gave to their children was the same or larger than the amount they received, then the net amount received is considered zero and the incidence of receiving support is coded as zero. A positive estimate of the explanatory variable implies such variable increases the probability of receiving a net transfer from adult children, and *vice versa*.

Table 1: *Logistic regression of incidence of positive net transfer, urban areas, 2006*

	Coe.	P-value
Age	-0.130	0.128
Age 2	0.001	0.121
Men	0.008	0.915
Widowed	0.276	0.002
Number of children	0.193	0.000
Number of unemployed children	-0.130	0.000
Number of children in other city	0.066	0.109
School year	0.024	0.298
School year square	-0.001	0.315
(never worked omitted)		
Have a formal job	-1.677	0.040
Self-employed	0.414	0.027
Retired from GNI	-0.618	0.000
Retired from SOE	-0.647	0.000
Retired from Collective	-0.451	0.001
Retired from private	-0.794	0.041
Retired from other sector	0.275	0.241
Pension/1000	-0.055	0.000
Other pre transfer/1000	-0.018	0.037
Owned properties	0.031	0.636
Savings/1000	0.006	0.000
Chronic disease	0.171	0.059
Difficulty in ADL	0.164	0.045
Help take care kids	0.159	0.083
Help housework	0.011	0.918
Provinces	yes	
Pseudo R^2	0.133	
N	4876	

Note: provincial dummies are included but not reported.
The Pseudo R^2 is McFadden's R^2 and is reported by Stata automatically.

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Table 1 presents the result of the logistic regression for old parents in urban areas. It shows that intergenerational transfers in urban areas respond to parents' financial need. Old parents who receive more pensions or have more other pre-transfer incomes are less likely to receive net transfers from their adult children. Additionally, the

significant negative effect of pensions (-0.055) is larger than that of other incomes (-0.018). The results also show that intergenerational transfer in urban areas is targeted to old parents who have limited access to public resources[2]. Compared to those not working and ineligible for pensions (as is the case with housewives), old parents working in formal sectors, and those retired from government institutes, state-owned enterprises, collective-owned enterprises or private enterprises, are less likely to receive net transfers from children. Among these estimates, "still working in formal sectors" has the largest significant negative effect. Recall that in China, especially prior to the period of reform and opening up, government institutes provide more retirement benefits than state-owned enterprises and collective-owned enterprises, whereas private firms generally offer much less retirement resources than public sector counterparts. In contrast, parents that are self-employed and ineligible for pensions are more likely to receive net transfers. This should not indicate that net transfer is positively correlated with the decision to work. Instead, it should imply that net transfer is driven by low income of self-employed older people. This is because in China, it is not likely that a worker in a formal sector will turn to self-employment before retirement. Rather, it is more likely that an individual will remain self-employed until his/her retirement, or engage in self-employment after retiring from a fixed wage employment. Therefore, self-employment should reveal the decision to work in terms of whether it was driven by a lack of public resource and low income. The findings of significant coefficients of working status should indicate the effects of nonmonetary

[2] Parents that work in the public sector may expect greater retirement benefits and may have given less to children if they expected to rely less on children later in life. If this is the case, a negative probability of receiving from children does not imply a need-based transfer motivation. However, we should notice that this is not likely to happen in China, where individuals that have worked in public sectors use "*dingti*" (meaning replacement) options to transfer their job positions to their adult children (Li & Xiao, 1998) and old parents still rely on children for emotional assistance which work units cannot provide.

resources that various occupational groups of retirees had access to, given that monetary income is controlled in the regressions.

If transfer is altruistically motivated, even if parents have low contemporaneous income, one may observe a lower probability of net transfers if children recognise that their old parents have sufficient accumulated wealth to support themselves in old age. Nevertheless, the logistic model shows that the possibility of receiving net transfer is positively associated with parents' savings and the ownership of property, although the latter is not statistically significant. The positive signs of saving and ownership of property may imply a long term exchange-based transfer motive. In other words, adult children give money because they expect bequest or financial support from their parents.

Apart from socioeconomic variables, demographic and health characteristics of parents are also significant in affecting the probability of receiving transfers. Widowed parents are found to be more likely to receive net transfers. Indeed, widowed parents may need more time-related care rather than money transfers. Therefore, when old parents are in an unfortunate marital status (widowed or divorced), adult children tend to live with them to provide care[3]. As far as samples not living with adult children are concerned, the positive sign of widowhood is likely to be because children tend to give more financial support to compensate for lack of instrumental and time-related care. Not surprisingly, having a larger number of surviving children is related to higher probability of transfer occurrence, even controlling for health and pre-transfer income. On the one hand, more children means a larger total transfer amount that parents will receive, given that all other conditions are unchanged. On the other hand, children tend to transfer more frequently to parents if they are in competition with their siblings, but

[3] This conjecture has been confirmed by the findings in chapter 5: widowed elderly parents are more likely to co-reside with adult children.

at the same time if they share the burden of support, this may lead to fewer transfers per capita. Unfortunately, the dataset does not allow me to identify which child transfers money and the relationship between the number of siblings and the amount of transfer given by each child. In contrast to the above, old parents with more unemployed children are less likely to receive monetary transfers from their adult children. Old parents that have more difficulties in undertaking daily activities or that have a major chronic disease[4] are more likely to receive transfers in urban areas. This further supports the hypothesis of need-based intergenerational transfers.

The insignificance of coefficients on ages, age squared, gender, years of schooling and year of schooling squared in urban areas reveal that parents' age and gender generally do not affect the incidence of transfers when taking into account income and health. Maybe it is because parents' health declines as they age, thus requiring more medical or instrumental care, paid for or provided by the adult children. This is supported by the findings in chapter 6 that co-residence which should imply more instrumental care from adult children becomes more prevalent when parents grow old.

Table 2 presents the results of the logistic regression for old parents in rural areas. Contemporary pre-transfer income and working status are found to have the same significant effect on the incidence of receiving net transfers in urban areas. Old parents with higher pre-transfer incomes are less likely to receive net transfers from their adult children. Additionally, old parents that have retired from a formal job (usually with better retirement benefits) or those are still farming are less likely to be a net recipient than those who are not farming and do not qualify for pensions. By contrast, widowhood, having more adult children or babysitting grandchildren increases the probability of receiving transfers from adult children. For the other variables, although

[4] For details of how major chronic disease is defined, please see Chapter 5.

they have the same signs as those in the urban regression, they are not statistically significant. The insignificance of age, gender and health-related variables may reveal that children tend to live with frail parents to provide instrumental assistance rather than give monetary support in rural areas. This is consistent with what I have found, namely that old parents with more serious ADL difficulties are more likely to live with children (see Tables 6.6 and 6.7 in chapter 6). Currently, older people in rural China have relatively little time to accumulate savings and lack land wealth. Given this, it is reasonable that one does not observe significant estimates of wealth-related variables.

Table 2: *Logistic regression of incidence of positive net transfer, rural areas, 2006*

	Coe	P-value
Age	0.001	0.995
Age 2	0.000	0.884
Men	-0.108	0.179
Widowed	0.144	0.092
Number of children	0.135	0.000
Number of children in other city	0.029	0.171
School year	0.020	0.539
School year square	-0.001	0.691
(never worked omitted)		
Still farming	-0.419	0.000
Retired	-1.260	0.000
Pre transfer income/1000	-0.020	0.066
Owned properties	0.020	0.768
Savings/1000	-0.003	0.593
Chronic disease	0.090	0.237
Difficulty in ADL	-0.008	0.913
Help take care kids	0.196	0.011
Help housework	-0.027	0.743
Provinces	yes	
Pseudo R^2	0.119	
N	4169	

Note: provincial dummies are included but not reported.
The Pseudo R^2 is McFadden's R^2 and is reported by Stata automatically.

2. **Factors determining the amount of financial support from children**

The analysis of the determinants of the amount of transfers that parents received shows a complex pattern of association between parental income and transfers from

children. In urban areas, different linear models have shown a statistically significant positive relationship between the amount of pension income and children's transfers (Table 3). The application of a semi-parametric model found a mix of transfer motives in urban China; private transfers are negatively associated with public transfers when parents' income is very low, and appear to become positively correlated with public transfers when parents' income becomes relatively high (Figure 1). The results suggest that a gradual increase in public transfers aimed at improving the well-being of older people will not serve to further weaken private transfers, and may serve to actually strengthen private transfers – particularly within cities. This may be because appropriate old-age policy is fundamental for children to practice filial obligation. By lessening the burdens of old-age support, young adult are likely to be more – not less - willing to fulfil their filial obligations towards their old parents.

Table 3: *Summary of the estimated transfer derivatives, urban and rural areas*

	OLS	OLS	2SLS	OLS	2SLS
	2006 data	Pooling data	Pooling data	Panel data	Panel data
Urban areas					
Pension	27.14	0.04***	0.17***		
Change in pension				-0.06***	0.20*
Rural areas					
All pre-transfer incomes	3.85	0.01			
Change in pre-transfer				0.01	

Note:
1) Both underidentification and Sargan (overidentification) tests have confirmed the validity of IVs in the 2SLS models.
2) ***Denotes statistical significance at the 1% level, **denotes statistical significance at the 5% level, and *denotes statistical significance at the 10% level.

In rural areas, although the semi-parametric model suggests a gradual negative correlation between recipient income and transfer from children (Figure 2), I did not find statistically significant coefficients of pre-transfer income from linear models (Table 1). A possible reason may be because the income resources of older people in the agricultural sector are difficult to classify, and may have measurement bias in the

data used. Adult children may offer financial support thorough cultivating parents' land, instead of giving money directly to the parents, in which case income from agriculture should be counted as a form of in-kind transfer.

Figure 1: *Non parametric relationship between net transfer and pension after removing the outer layers, urban areas*

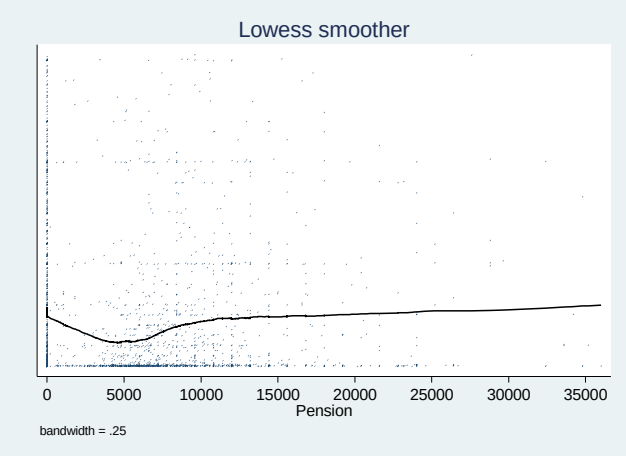
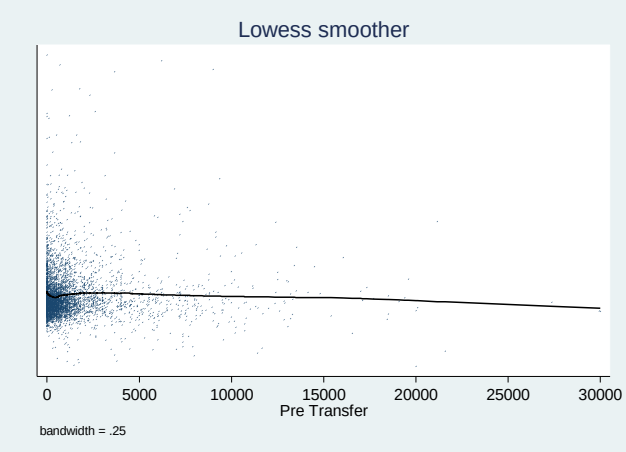


Figure 2: *Non parametric relationship between net transfer and all pre-transfer income, rural areas*



3. Discussion

Sociologists and economists have long studied intergenerational transfers, which in China and most developing countries tend to refer to transfers of money from adult children to old parents; a phenomenon that is totally different from that which

characterises developed countries. Several empirical studies have been devoted to investigating the crowding-out hypothesis and the motives behind these transfers, most of which focus on distinguishing between altruism and exchange motives. Previous findings in this area are mixed, with multiple motives identified under different conditions. However, as previous studies on private transfers in China could not differentiate between intra-generational and intergenerational transfers, prevalent preconceptions of the situation with respect to intergenerational transfer can be misleading. This study has examined how private transfers respond to parental income, while it is likely that both the demographic transition and reform of the pension system are putting traditional family-based support mechanisms under considerable strain in China. The uniqueness of the two national surveys used here has enabled me to analyse the situation in both urban and rural China. The findings have significant implications for understanding of how well traditional family-based support mechanisms are functioning, and of public programmes (pensions) impact upon private parental monetary support.

The empirical results presented reveal a complex pattern of association between parents' income and children's transfers. On one level, the analysis shows that most intergenerational transfers in China tend to target parents that are in greater financial need. In both urban and rural areas I note that parents with higher incomes, or better access to retirement benefits, are less likely to receive transfers from their children. In contrast, parents in less good marital circumstances (for instance widowed) or who are in poor health, are found to be more likely to receive transfers from their children. The reason for this is most likely to be that children are naturally concerned with the well-being of their old parents. If parents' income is low, the children will be more

likely to transfer money to their parents in order for them to be able to achieve a decent level of consumption, which is optimal from the children's point of view.

Nevertheless, one cannot say intergenerational transfer is altruism motivated and would be crowded out by public transfers at this point, because both altruism and exchange models predict a negative association between recipient income and the probability of receiving a transfer[5]. One can distinguish between altruism and exchange only through the transfer derivative in the regression of the transfer amount. To achieve such a goal, I have adopted several models to estimate the transfer derivative in order to obtain more accurate and robust results. Different linear models have shown a significant positive relationship between the amount of pre-transfer income and children's transfers in urban areas and seem to reject the crowding-out hypothesis. The application of a semi-parametric model found a mix of transfer derivatives in urban China, where intergenerational transfers are negatively associated with public transfers when parental income is very low, and are positively associated with public transfers when parents' income is relatively high. These findings together imply that altruism alone could not explain intergenerational transfers in urban China and suggest a co-existence of transfer motives.

In rural areas, although the semi-parametric model suggests a gradual negative correlation between recipient income and transfer from children, I did not find statistically significant coefficients of pre-transfer income from linear models. A possible reason may be because the income resources of older people in the agricultural sector are difficult to classify, and may have measurement bias in the data used. Adult children may offer financial support through cultivating parents' land, instead of giving money directly to the parents, in which case income from agriculture should be counted

[5] See section 2.2 of Chapter 2.

as a form of in-kind transfer. This insignificance may also come from the endogeneity introduced by pre-transfer income of older people in rural areas. As noted in section 7.2, if old parents decide not to farm or work because they had received sufficient monetary support from children, the coefficient of pre-transfer is upward biased. Conversely, if adult children believe that a parent on low income is not looking hard enough for employment, the coefficient of pre-transfer is downward-biased. The latter case is not very likely to happen in rural China where filial piety is still prevalent, and where supporting one's parents is generally regarded as the responsibility of the children. The coefficient of pre-transfer income is more likely to be biased upward in rural areas. This may explain why the estimations of pre-transfer income coefficients are positive and not significant in the transfer amount regression, because the bias may make it less negative or even positive. Accordingly, despite a lack of concrete evidence, results suggest that intergenerational transfer is more likely to be driven by altruism than by exchange motives in rural areas.