More Schooling, More Generous?
Estimating the effect of education on intergenerational transfers

YIN Ting
RIETI

ZHANG Junchao
Institute of Statistical Mathematics

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YIN Ting

Research Institute of Economy, Trade and Industry

ZHANG Junchao

The Institute of Statistical Mathematics

Abstract

This paper studies the causal effect of education on intergenerational transfers from/to adult children. Using micro-data from the China Health and Retirement Longitudinal Study, we exploit exogenous variations in parents' schooling induced by China's Great Famine to take account of the endogeneity of education, and then estimate the effect of schooling on the probability of receiving/giving transfers from/to adult children. The instrumental variable estimates show that an additional year of schooling has a negative effect on the probability of receiving transfers, but a positive effect on the probability of giving transfers at old age. Our results have some policy implications on social security in aging societies.

JEL classification: D64; H55; I21
Keywords: Education, Intergenerational transfer, Instrumental variable

1 Introduction

The rapid aging process is a severe problem that China is now facing due to the one child policy. When the baby boom generation of 1960s are getting older and older, children of them will have a massive pressure of supporting the parents in old age. The old-age dependency ratio will be 40% in 2050 though it is only 13% in 2015. However, developed countries such as the U.S., Japan and EU countries whose social security systems cover the majority of the elderly before the aging of the population. China is still at a low level of economic development and with few social security systems, especially for elder cohort and rural people.

Other than social security systems, private transfers among adult generations within the family are the most important source of old-age care in China. With its long history and culture, China has unique traditional family values. The "filial piety", measured by monetary and time transfers from adult children to their elder parents, has effectively filled up the lack of social security systems. Also, intergenerational transfers behaviors have a crucial policy implication in human society, as many public programs, such as social security systems and the taxation of savings, are tend to depend upon the intergenerational link within families.

A large literature has investigated the patterns and determinants of private transfers (Becker 1974; Kotlikoff 1988) and a lot of theoretical models are conducted (Altonji et al. 1997; Fujiu and Yano 2008). The altruistic model suggests that parents care mainly about the happiness of their children, transfers flow from the least to the most financially needy generation independently of any present or future mutual help (Becker, 1991). In the exchange model, financial transfers from parents reflect the payment of services and visits provided by children (Cox, 1987; Cox and Rank, 1992). Cox and Stark (2005) develops a new theoretical model of transfers that is not based on the monetary mechanism. The

"demonstration effect model" considers that a child's propensity to furnish parents with attention and care can be conditioned by parental example.

Despite the debate against social security system, the literature on intergenerational transfers is growing in China. İmrohoroğlu and Zhao (2017) argues that family support plays a prominent role in the well-being of the elderly and often substitutes for the lack of government-provided old-age support systems in China. Using national level data, Zhu et al. (2014) investigates the transfers behaviors in the context of China's one child policy, and they find that a decrease in the number of children results in parents investing more in their children's schooling. However, evidence on the individual-level is lacked because of data limitations.

This paper makes two contributions to this literature. First, using micro-data from the China Health and Retirement Longitudinal Study, we provide new evidence suggesting that intergenerational transfers behaviors are causally related to education. Due to endogeneity issues arising from reverse causality, as well as unobservable factors that may be correlated with intergenerational transfers and education, few studies have investigated the causal link. We exploit the sudden change in schooling induced by China's Great Famine during 1959 to 1961, which caused millions of children to drop out of primary schools. Following Huang and Zhou (2013), we define the treatment group as those who were born during 1948 and 1953, suffering from China's Great Famine when they were primary school students. Our instrumental variable estimates show that an additional year of schooling has a negative effect on the probability of receiving transfers, but a positive effect on the probability of giving transfers at old age.

Second, we identify the pure education effect on transfers behaviors instead of using schooling as a proxy for incomes. Using rich information on household assets and individual incomes, we have eliminated the income effect of intergenerational transfers. Holding

incomes and savings constant, we find that education consistently shows a significant effect on transfers behaviors.

The reminder of this paper organized as follows. Section 2 is the identification strategy. Section 3 describes the dataset and offers descriptive statistics. The following section presents the results of OLS and IV estimation. Section 5 checks the robustness of our results. Section 6 concludes.

2 Identification Strategy

To estimate the effect of schooling on intergenerational transfers from/to adult children, the benchmark model is specified as follows:

$$Transfer_i = \beta_0 + \beta_1 Educ_i + \beta_2 X_i + u_i \tag{1}$$

where the $Transfer_i$ is a binary outcome variable indicating receiving/giving transfers from/to adult children. β_1 is the coefficient of interest, which captures the effect of education. $Educ_i$ is measured by years of schooling. X_i is a vector of control variables including age, gender, marital status, *hukou* status, number of children, household assets, and individual incomes. u_i is the error term.

β_1 estimated by Equation (1) might suffer from omitted variable bias, as educational decisions are related to family background, individual ability, and other unobserved characteristics. To take account for the endogeneity of education, we use China's Great Famine as a natural experiment, and then perform an IV estimation. The first stage of IV estimation is specified as follows:

$$Educ_i = \gamma_0 + \gamma_1 Cohort_i^{1948-1953} + \gamma_2 X_i + v_i \tag{2}$$

where $Cohort_i^{1948-1953}$ is a binary instrumental variable that equals to 1 if individual i was born during 1948 to 1953 and 0 otherwise. X_i is the same vector of control variables as in Equation (1). v_i is the error term.

The instrument is valid when the following two necessary assumptions are satisfied:

$$Cov(Educ_i, Cohort_i^{1948-1953}) \neq 0 \tag{3}$$

$$Cov(Cohort_i^{1948-1953}, v_i) = 0 \tag{4}$$

we can check the first assumption by estimated coefficients in first stage results of IV. In Table 2, famine cohort has fewer years of schooling, which is significant in statistics at 1% level. That is to say, the first assumption is satisfied. For the second assumption, we assume that being born during 1948 to 1953 is not related to the error term v_i in Equation (2). Although we could not directly test the second assumption by design, it is a persuasive assumption because the binary variable of 1948-1953 born cohort is predetermined before China's Great Famine in 1959-1961. As parents could not predict the famine at the timing of 1948-1953, the probabilities of selection into pregnancy and birth are very low.

3. Data

Our data source is the CHARLS (China Health and Retirement Longitudinal Study) that is a high quality nationally representative sample of Chinese residents ages 45 and older. The baseline national wave of CHARLS is conducted in 2011 and includes about 10,000 households and 17,500 individuals. The respondents of CHARLS will be followed up every two years. We use only the national wave of 2011 while 2013 is still not available. CHARLS is based on the Health and Retirement Study (HRS), contains abundant information on demography, family, health, work/retirement, and income/expenditures/assets.

CHARLS includes main respondents and his/her spouses in the survey data. The main respondents are randomly selected. Because the intergenerational transfers are measured on household level, we only keep the main respondents to analyze the transfers behaviors among generations.

For the analysis of education and intergenerational transfers, the sample is restricted as follows: (1) We only use individuals whose birth information is not missing. Those who were born before 1930 or after 1970 are dropped, as they are not too old or young to analyze intergenerational transfers. (2) We only use individuals that have adult children living apart from them. Like any other international data, CHARLS does not measure the transfers of co-resident children because transfers within the household are not clearly specified. (3) We construct various covariate regarding gender, *hukou* status, marital status, number of children, ownership of residence and car, working status, labor and non-labor incomes, and savings, any observations having missing values in these variables are dropped. For the re-married family, the number of children is complicated because both of the couples may have children respectively from the previous relationship, and also they may have children in the newly constructed family. To simplify the analysis, we only take children who have biological relation with the respondents into account.

Schooling is the key variable in this study, which is obtained by recoding categorical educational attainment into equivalent years. Educational attainment is defined by nine discrete educational categories in CHARLS as following[1]: (1) illiterate, (2) less than primary education (includes who are semi-illiterate and those who drop out from the primary school), (3) primary school, (4) junior high school, (5) high school, (6) vocational school, (7) junior college, (8) college/university, (9) master degree. We calculate the years of schooling based

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[1] Those who went to home schools are dropped, because they could be totally different from their peers in the modern society. In full sample, only 0.4% people went to home schools.

on educational attainment and dropout status. For those who were dropped out of schools, schooling is corrected according to their completed grade.

Table 1 reports the descriptive statistics of the final sample, which is tabulated by famine and non-famine cohorts. In the full sample (Column 1), the average age is 60.46, and 47.4% of them are males. Most of individuals are married and living with their spouses, and the average number of children is 2.38. Only 14.1% individuals are still working, and only 16.2% individuals have non-labor incomes regarding pensions and various subsidies. Column (2) and (3) show the statistics for famine and non-famine cohorts, respectively. Compared to non-famine cohorts, famine cohort has higher/lower likelihood in receiving/giving transfers to adult children, and they have fewer years of schooling. To test the difference between famine and non-famine cohorts, we show the results of t-statistic in Column (4). For the covariates, the famine cohort is only different in marital status and number of children, however, is not different in individual incomes and household assets.

4. Results

In this section, we report the estimated coefficients of schooling on intergenerational transfers using OLS and IV methods. In all regressions, linear probabilities are used along with robust standard errors. Before presenting the results of the OLS and IV, we discuss the validity of China's Great Famine as an instrument for education.

4.1 The First Stage

A good IV in this case should be highly correlated with schooling but should not affect the intergenerational transfers except through schooling. In other words, a valid IV should not be correlated with unobserved characteristics that are captured by the error term, u_i, in Equation (1.)

Table 2 reports the first stage results of IV estimation, which consistently indicates negative effects of China's Great Famine on schooling. In particular, average schooling among famine cohort is approximately 0.68 years shorter than other cohorts. The estimates keep highly stable across different specifications controlling for demographical characteristics, household assets, and individual incomes.

4.2 OLS and IV

Table 3 presents the OLS and IV estimates of the effect of education on receiving transfers from adult children. Regardless of different specifications, education consistently indicates a small effect on receiving transfers from adult children in OLS estimation. According to Column (1), (2), and (3), one additional year of schooling is related to a 0.5% decrease in the likelihood of receiving financial transfers from children. After controlling for endogenous educational decisions, the corresponding IV estimates indicate larger effect of schooling in magnitude. According to Column (4), (5), and (6), one additional years of schooling causally decreases the likelihood of receiving transfers by 2.6-3.5%. Specifically, the effect of schooling remains significant in statistics, even when household assets and individual incomes are controlled (Column 6).

Table 4 presents the OLS and IV estimated of the effect of education on giving transfers to adult children. In all OLS specifications (Column 1, 2, and 3), education stably has very small effect on giving transfers to adult children. One additional year of schooling is related to a 0.5% increase in the likelihood of giving inter vivos transfers. On the contrary, the corresponding IV estimates are approximately 7 times larger than OLS, indicating a 3.7-3.9% increase in the likelihood of inter vivos transfers (Column 4, 5, 6). Similar with Table 2, additionally controlling for household assets and individual incomes does not alter our

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estimates. Other than education, gender, household assets, and number of children also have significant effects on giving transfers to adult children.

In both Table 3 and Table 4, the differences between OLS and IV estimates are quite large. When the endogeneity of schooling is not accounted for, the estimated coefficients of schooling on receiving/giving transfers from/to adult children are stably very small, although significant at 1% level in statistics. The IV estimates in each table do not alter the sign of OLS estimates, however, show larger coefficients in magnitude. The dramatic difference between OLS and IV suggests that schooling is related to intergenerational transfers through unobservable factors. As we have controlled for economic characteristics in both household and individual levels, the effect of education reflects a pure effect of education instead of acting as a proxy for incomes. Holding assets, incomes, and savings constant, the effect of schooling on transfers behaviors could be explained by generosity.

5. Robustness Checks

In this section, we check the robustness of our results by including more variables maybe correlate with both education and intergenerational transfers. In particular, we have additionally controlled for household incomes and health status. Household incomes are defined as the sum of labor and non-labor incomes for both husband and wife. Health status is measure by a vector of 14 objective dummy variables indicating the status of disease, which includes (1)hypertension, (2)dyslipidemia, (3)diabetes or high blood sugar, (4)cancer or malignant tumor, (5)chronic lung diseases, (6)liver disease, (7)heart disease, (8)stroke, (9)kidney disease, (10)stomach or other digestive disease, (11)emotional, nervous, or psychiatric problems, (12)memory-related disease, (13)arthritis or rheumatism, and (14)asthma.

Table 5 reports the effect of education on receiving/giving transfers from/to adult children, after controlling for household incomes and health status. Specification 1 includes full controls as in Equation (1) and (2), which are also listed in the descriptive statistics in Table

1. Specification 2 controls for household incomes, and specification 3 additionally includes objective health status. The coefficients on education are highly stable across different specifications, although the sample size is different with Table 1 because of missing values on household incomes and health status. One additional year of schooling consistently reduces the likelihood of receiving inter vivos transfers, and increases the likelihood of giving inter vivos transfers. Including household incomes and health status does not alter our results.

6. Concluding and policy implications

In this paper, we estimate the causal effect of education on intergenerational transfer, using micro data from the China Health and Retirement Longitudinal Study (CHARLS), which was conducted by the National School of Development (China Center for Economic Research) at Peking University. More specifically, we use the subsample of older respondents who were born between 1930 and 1970 and have adult children living apart from them. We exploit China's Great Famine as a natural experiment to take account for endogeneity issues of educational choices. As a result, we find that schooling is causally related to lower probabilities of receiving transfers from adult children, and higher probabilities of giving transfers to adult children.

Our results have important policy implication regarding education and social security systems. According to the estimates in Table 3 and Table 4, the effect of schooling is robust across different specifications, indicating a positive impact on giving transfers and a negative impact on receiving transfers at old age, even when household assets and individual assets are holding constant. It implies that parents who have more years of schooling are not likely to depend on their children (this effect is not through higher incomes). Thus, in turn, implies that in addition to improving average educational attainments (e.g. extent compulsory schooling, enrollment expansion of colleges), it is also essential to put effort into social

security systems simultaneously. For example, introducing not only a public but also private long-term care insurance program to meet various elderly' demands.

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Table 1 Descriptive Statistics

		Cohort		
	(1)	(2)	(3)	(4)
VARIABLES	Full	Famine	Non-Famine	Difference
Receiving transfers	0.456	0.466	0.452	0.013
	(0.498)	(0.499)	(0.498)	(0.011)
Giving transfers	0.095	0.076	0.101	-0.025***
	(0.293)	(0.265)	(0.301)	(0.006)
Years of schooling	4.881	4.433	5.035	-0.602***
	(4.155)	(3.855)	(4.243)	(0.089)
Age	60.463	60.389	60.489	-0.100
	(8.821)	(1.680)	(10.178)	(0.189)
Male	0.474	0.482	0.471	0.011
	(0.499)	(0.500)	(0.499)	(0.011)
Urban *hukou*	0.191	0.191	0.191	-0.000
	(0.393)	(0.393)	(0.393)	(0.008)
Marital Status				
Married and living together (base)	0.813	0.853	0.799	0.054***
	(0.390)	(0.354)	(0.401)	(0.008)
Married but not living together	0.069	0.064	0.071	-0.007
	(0.253)	(0.245)	(0.256)	(0.005)
Separated	0.004	0.005	0.004	0.001
	(0.067)	(0.074)	(0.064)	(0.001)
Divorced	0.007	0.008	0.007	0.001
	(0.084)	(0.086)	(0.083)	(0.002)
Widowed	0.107	0.070	0.119	-0.049***
	(0.309)	(0.255)	(0.324)	(0.007)
Household Assets				
# Children	2.380	2.271	2.417	-0.146***
	(1.409)	(1.116)	(1.495)	(0.030)
Ownership of residence	0.895	0.906	0.892	0.014*
	(0.306)	(0.292)	(0.311)	(0.007)
More residential property	0.096	0.103	0.093	0.009
	(0.294)	(0.304)	(0.291)	(0.006)
Having a car	0.046	0.041	0.048	-0.008
	(0.210)	(0.198)	(0.214)	(0.005)
Individual Incomes				
Working	0.141	0.139	0.142	-0.004
	(0.348)	(0.346)	(0.349)	(0.007)
Working*Labor income	0.717	0.611	0.754	-0.143

		(5.296)	(3.824)	(5.715)	(0.114)
Other income(Pension+Subsidy)		0.162	0.139	0.170	-0.031
		(1.897)	(1.827)	(1.921)	(0.041)
Saving		4.863	5.287	4.717	0.570
		(46.530)	(63.211)	(39.187)	(0.998)
Observations		11,420	2,923	8,497	11,420

Table 2 First Stage Results of China's Great Famine on Years of Schooling

	(1)	(2)	(3)
VARIABLES	Schooling	Schooling	Schooling
Famine cohort	-0.662***	-0.686***	-0.679***
	(0.071)	(0.071)	(0.070)
Male	2.770***	2.726***	2.570***
	(0.065)	(0.065)	(0.066)
Age	-0.146***	-0.128***	-0.121***
	(0.004)	(0.005)	(0.005)
Urban *hukou*	3.912***	3.804***	3.655***
	(0.092)	(0.092)	(0.093)
Marital Status			
Married but not living together	-0.228*	-0.234*	-0.350***
	(0.131)	(0.130)	(0.128)
Separated	-0.555	-0.522	-0.505
	(0.468)	(0.468)	(0.473)
Divorced	0.641*	0.671*	0.705**
	(0.367)	(0.362)	(0.352)
Widowed	-0.295***	-0.308***	-0.336***
	(0.103)	(0.103)	(0.103)
Household Assets			
# Children		-0.176***	-0.166***
		(0.059)	(0.059)
Ownership of residence		0.191	0.187
		(0.224)	(0.223)
# Children*Ownship of residence		0.013	0.021
		(0.061)	(0.061)
More residential property		0.316***	0.245**
		(0.108)	(0.108)
Having a car		0.714***	0.604***
		(0.162)	(0.159)

Individual Incomes

Working			0.917***
			(0.103)
Working*Labor income			0.010**
			(0.005)
Other income(Pension+Subsidy)			0.075***
			(0.018)
Saving			0.004***
			(0.001)
Constant	11.888***	10.990***	10.458***
	(0.236)	(0.328)	(0.332)
F-Statistic of excluded instrument	87.61	94.16	93.38
Observations	11,420	11,420	11,420

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3 The Effect of Education on Receiving Transfers from Adult Children

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Years of schooling	-0.006***	-0.005***	-0.005***	-0.026*	-0.035**	-0.035**
	(0.001)	(0.001)	(0.001)	(0.016)	(0.016)	(0.016)
Male	-0.007	0.001	-0.002	0.049	0.081*	0.075*
	(0.010)	(0.010)	(0.010)	(0.045)	(0.043)	(0.042)
Age	0.012***	0.007***	0.007***	0.009***	0.003	0.004*
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Urban *hukou*	-0.175***	-0.152***	-0.151***	-0.095	-0.040	-0.042
	(0.012)	(0.012)	(0.013)	(0.063)	(0.060)	(0.059)
Marital Status						
Married but not living together	0.037**	0.040**	0.037**	0.033*	0.034*	0.027
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)
Separated	-0.035	-0.027	-0.027	-0.047	-0.043	-0.043
	(0.067)	(0.065)	(0.065)	(0.068)	(0.067)	(0.067)
Divorced	-0.024	-0.032	-0.034	-0.011	-0.013	-0.013
	(0.052)	(0.052)	(0.052)	(0.054)	(0.055)	(0.055)
Widowed	0.049***	0.053***	0.052***	0.044***	0.046***	0.044***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Household Assets						
# Children		0.042***	0.042***		0.038***	0.038***

	(1)	(2)	(3)	(4)	(5)	(6)
		(0.009)	(0.009)		(0.009)	(0.009)
Ownership of residence		-0.067**	-0.069**		-0.059*	-0.061*
		(0.031)	(0.031)		(0.032)	(0.033)
# Children*Ownship of residence		0.003	0.004		0.003	0.004
		(0.009)	(0.009)		(0.009)	(0.009)
More residential property		0.058***	0.058***		0.067***	0.065***
		(0.015)	(0.015)		(0.016)	(0.016)
Having a car		-0.046**	-0.046**		-0.024	-0.027
		(0.021)	(0.021)		(0.024)	(0.023)
Individual Incomes						
Working			0.018			0.045**
			(0.014)			(0.020)
Working*Labor income			0.001			0.001
			(0.001)			(0.001)
Other income(Pension+Subsidy)			-0.003			-0.001
			(0.002)			(0.003)
Saving			-0.000			0.000
			(0.000)			(0.000)
Constant	-0.188***	0.014	0.002	0.052	0.334*	0.309*
	(0.036)	(0.047)	(0.048)	(0.191)	(0.175)	(0.168)
Observations	11,420	11,420	11,420	11,420	11,420	11,420
R-squared	0.072	0.087	0.087	0.053	0.046	0.046

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4 The Effect of Education on Giving Transfers to Adult Children

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Years of schooling	0.005***	0.005***	0.004***	0.039***	0.038***	0.038***
	(0.001)	(0.001)	(0.001)	(0.010)	(0.009)	(0.009)
Male	-0.004	-0.004	-0.011*	-0.097***	-0.094***	-0.097***
	(0.006)	(0.006)	(0.006)	(0.027)	(0.026)	(0.025)
Age	-0.004***	-0.004***	-0.004***	0.001	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Urban *hukou*	0.079***	0.081***	0.075***	-0.053	-0.045	-0.047
	(0.009)	(0.009)	(0.009)	(0.038)	(0.036)	(0.035)
Marital Status						
Married but not living together	0.011	0.011	0.003	0.018	0.018	0.014

	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Separated	0.010	0.014	0.014	0.030	0.032	0.032
	(0.039)	(0.040)	(0.039)	(0.045)	(0.045)	(0.044)
Divorced	0.036	0.042	0.045	0.014	0.020	0.021
	(0.043)	(0.042)	(0.042)	(0.043)	(0.043)	(0.043)
Widowed	-0.002	-0.000	-0.002	0.006	0.008	0.006
	(0.007)	(0.007)	(0.007)	(0.009)	(0.009)	(0.009)
Household Assets						
# Children		0.012***	0.012***		0.016***	0.016***
		(0.004)	(0.004)		(0.005)	(0.005)
Ownership of residence		0.072***	0.072***		0.063***	0.063***
		(0.017)	(0.017)		(0.019)	(0.019)
# Children*Ownship of residence		-0.015***	-0.014***		-0.014***	-0.014***
		(0.005)	(0.004)		(0.005)	(0.005)
More residential property		0.034***	0.031***		0.024**	0.023**
		(0.010)	(0.010)		(0.011)	(0.011)
Having a car		0.009	0.005		-0.015	-0.016
		(0.015)	(0.015)		(0.017)	(0.016)
Individual Incomes						
Working			0.058***			0.027*
			(0.011)			(0.014)
Working*Labor income			0.000			-0.000
			(0.001)			(0.001)
Other income(Pension+Subsidy)			0.005**			0.002
			(0.002)			(0.002)
Saving			0.000			-0.000
			(0.000)			(0.000)
Constant	0.316***	0.237***	0.213***	-0.081	-0.119	-0.130
	(0.023)	(0.029)	(0.029)	(0.110)	(0.099)	(0.095)
Observations	11,420	11,420	11,420	11,420	11,420	11,420
R-squared	0.042	0.044	0.050	-0.114	-0.103	-0.100

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5 Robustness Checks

	From Children			To Children		
	(1)	(2)	(3)	(4)	(5)	(6)
	Spec 1	Spec 2	Spec 3	Spec 1	Spec 2	Spec 3

Years of schooling	-0.032*	-0.032*	-0.031*	0.035***	0.035***	0.036***
	(0.016)	(0.016)	(0.016)	(0.010)	(0.010)	(0.010)
Constant	0.275	0.275	0.248	-0.115	-0.115	-0.126
	(0.174)	(0.174)	(0.178)	(0.098)	(0.098)	(0.100)
Observations	10,942	10,942	10,942	10,942	10,942	10,942
Household Income	No	Yes	Yes	No	Yes	Yes
Health Status	No	No	Yes	No	No	Yes

Notes: Robust standard errors in parentheses. Specification 1 includes full control variables in Table 3 and Table 4. *** p<0.01, ** p<0.05, * p<0.1

Appendix

Table 5   The Effect of Education on Receiving Transfers from Adult Children, By Gender

	Male		Female	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Years of schooling	-0.004**	-0.063***	-0.007***	-0.013
	(0.002)	(0.023)	(0.002)	(0.021)
Age	0.009***	0.001	0.006***	0.005**
	(0.001)	(0.003)	(0.001)	(0.003)
Urban *hukou*	-0.159***	0.032	-0.146***	-0.119
	(0.017)	(0.077)	(0.018)	(0.089)
Marital Status				
Married but not living together	0.042*	0.022	0.032	0.030
	(0.025)	(0.027)	(0.025)	(0.026)
Separated	-0.031	-0.091	-0.033	-0.032
	(0.087)	(0.099)	(0.099)	(0.099)
Divorced	-0.113*	-0.094	0.102	0.109
	(0.060)	(0.063)	(0.090)	(0.095)
Widowed	0.001	-0.033	0.080***	0.080***
	(0.028)	(0.033)	(0.019)	(0.019)
Household Assets				
# Children	0.045***	0.045***	0.038***	0.037***
	(0.013)	(0.015)	(0.012)	(0.012)
Ownership of residence	-0.056	-0.034	-0.083*	-0.082*
	(0.046)	(0.052)	(0.043)	(0.043)
# Children*Ownship of residence	0.000	0.001	0.007	0.007
	(0.013)	(0.015)	(0.012)	(0.012)
More residential property	0.061***	0.079***	0.055**	0.056**
	(0.022)	(0.025)	(0.022)	(0.022)
Having a car	-0.050*	0.000	-0.042	-0.039
	(0.030)	(0.038)	(0.029)	(0.030)
Individual Incomes				
Working	0.002	0.051*	0.055**	0.063*
	(0.018)	(0.027)	(0.024)	(0.035)
Working*Labor income	0.001	0.002**	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Other income(Pension+Subsidy)	-0.002	0.002	-0.005*	-0.005
	(0.003)	(0.003)	(0.003)	(0.004)
Saving	-0.000	0.000	0.000	0.000

	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.097	0.684**	0.093	0.156
	(0.072)	(0.319)	(0.066)	(0.220)
Observations	5,412	5,412	6,008	6,008

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6 The Effect of Education on Giving Transfers to Adult Children, By Gender

	Male		Female	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Years of schooling	0.004***	0.038***	0.005***	0.038***
	(0.001)	(0.014)	(0.001)	(0.012)
Age	-0.004***	0.001	-0.004***	-0.000
	(0.001)	(0.002)	(0.001)	(0.001)
Urban *hukou*	0.076***	-0.033	0.076***	-0.058
	(0.012)	(0.046)	(0.013)	(0.051)
Marital Status				
Married but not living together	-0.001	0.010	0.009	0.019
	(0.016)	(0.018)	(0.016)	(0.017)
Separated	0.016	0.050	0.008	0.005
	(0.051)	(0.061)	(0.060)	(0.064)
Divorced	0.070	0.059	-0.003	-0.042
	(0.057)	(0.057)	(0.059)	(0.062)
Widowed	0.023	0.042**	-0.013	-0.008
	(0.015)	(0.019)	(0.008)	(0.009)
Household Assets				
# Children	0.007	0.008	0.017***	0.024***
	(0.006)	(0.007)	(0.006)	(0.007)
Ownership of residence	0.063**	0.050*	0.082***	0.075***
	(0.025)	(0.029)	(0.024)	(0.026)
# Children*Ownship of residence	-0.013**	-0.013*	-0.016**	-0.015**
	(0.006)	(0.007)	(0.006)	(0.007)
More residential property	0.021	0.011	0.040***	0.033**
	(0.015)	(0.016)	(0.014)	(0.015)
Having a car	0.019	-0.010	-0.008	-0.022
	(0.023)	(0.026)	(0.019)	(0.021)
Individual Incomes				
Working	0.048***	0.020	0.080***	0.041*
	(0.013)	(0.017)	(0.019)	(0.024)

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Working*Labor income	0.000	-0.000	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Other income(Pension+Subsidy)	0.002	0.001	0.008**	0.005
	(0.002)	(0.003)	(0.004)	(0.004)
Saving	0.000	-0.000	0.000**	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.219***	-0.230	0.198***	-0.124
	(0.045)	(0.179)	(0.039)	(0.122)
Observations	5,412	5,412	6,008	6,008

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1