

Exploring the determinants of transfers between
parents and their adult children: Evidence from
Indonesia

TENG ZIYANG

(Bsc Math and Econs(Hons), NTU)

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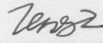
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DECLARATION

I hereby declare that the thesis is my original work and it has been written by me entirely. I have duly acknowledged all the sources of information which has been used in the thesis.

The thesis has also not been submitted for any degree in any university previously.



Teng Ziyang
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Abstract

We estimate the determinants of net transfers between elderly parents and children using the Indonesia Life Family Survey (IFLS) Data. In contrast to past studies, we use richer data, by including all four waves of the IFLS data. We also use a different methodology, choosing different instruments for the endogenous variables. The transfer behaviour is further examined by stratifying data into different sub samples, and assumption that parents' income is exogenous is further relaxed. Similar results as past studies such as Raut and Tran (2006) are obtained, where parents' and children's income have the expected sign. However, only the children's income is statistically significant in net transfer behaviour. Our findings that the children income is statistically significant in affecting the net transfers behaviour has policy implications. This might mean that government transfers to the adult children has the indirect effect of raising the impoverished elderly welfare as well, since the children will transfer half of their income to their parents.

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1 Introduction

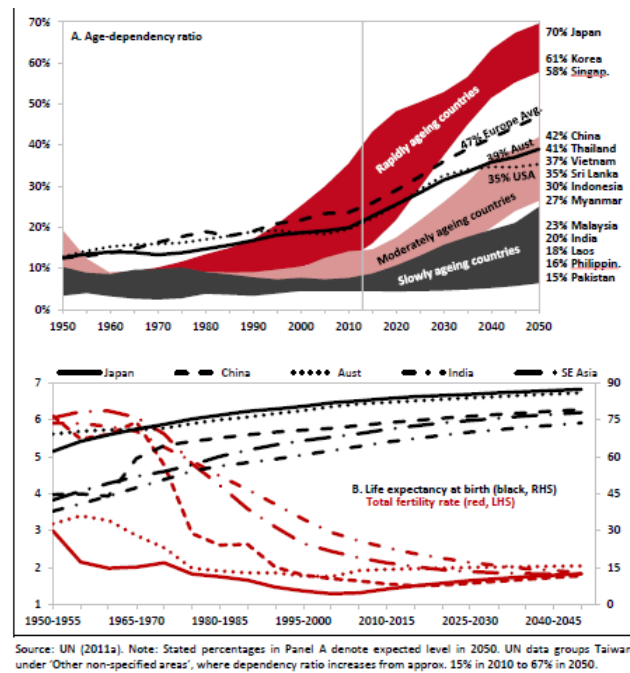


Figure 1:

The number of people aged 65 years and above in South-east Asian countries is expected to increase drastically (Chomik and Piggott, 2013) by year 2050. Coupled with the declining total fertility rate, this signals an impending change in the traditional family structure. Families in the future are likely to have more and older elderly with fewer working children. [Figure 1] This change in the dependency ratio might suggest that provision to parents by their adult children might not be sufficient in the future. Moreover, the issue of adequate provision for the elderly is exacerbated by the lack of sufficient pension payouts for many of the rapidly ageing South-east Asian countries (Park and Estrada, 2013) This might mean that the net monetary transfers between elderly parents and their adult children are likely to determine a large part of the parents' welfare and also their semi-private consumption. Therefore, it is important to know how much the children will give to the parents, or how much will they reduce their net transfers in the presence of government transfers.

The objective of this paper is to estimate the determinants of transfer between parents and adult children in Indonesia. In the implementation of the econometric methodology, we first look at the net monetary transfers between parents and children as a function of parents' income, total children's income and a other control variables. We next stratify into different sub samples to check if the transfers behaviour are different. Next, the paper relaxes the assumption that parents' income is exogenous and uses the parents' education as an instrument for the parents' income. Finally, the Hausmann specification test is conducted, under the null hypothesis that parents' income is exogenous.

The main empirical result is that the children income have a significant and positive impact on net transfers between the elderly parents and their children. An increase in a thousand rupiah of the total children's income will result in a net transfer of 460 rupiah to the parents after controlling for factors such as rural/urban distinction and other factors. Parents' income in our study is not statistically significant in affecting the net transfer but it has the anticipated negative sign. The IV estimates for parents' income remain statistically insignificant. We do not reject the null hypothesis of the Hausmann test for both households with a single elderly parent and households with two elderly parents.

The rest of the paper proceeds as follows; Section 2 gives a review of the relevant literature on transfers between parents and children, Section 3 discusses the data that we use, Section 4 describes our econometric strategy, Section 5 lists and discusses the results, while Section 6 concludes the paper.

2 Literature Review

There have been many theoretical explanations for transfer behaviour between family members. Becker (1974) first proposed the one sided altruism model where parents transfer to children because the parents are altruistic. Raut and Tran (2005) then proposed a two sided altruism model and a loan contract exchange model to account for transfer behaviour between parents and their adult children. The study introduces a dynamic factor into transfers behaviour between parents and their adult children by making different assumptions on how the agents behave. In the two sided altruism model, both parents and children care for one another. Parents first decide on how much to invest and transfer to their children when young and the children then decide on how much to transfer to their parents when their parents are old. In the loan contract model, parents decide on how much to transfer as education investment in their children in the first period, based on how much they are likely to receive in transfer from children when they are old.

Ham and Song (2014) further extended the study of transfer behaviour by using the family bargaining model to allow for transfers between a married couple and both sets of parents. In their structural model, it is assumed that both the wife and the husband only care about their own parents but do not value transfer to their in-law parents. They then estimated the determinants of net transfers between elderly parents and adult children in South Korea by allowing for bargaining between the wife and husband, bargaining between the husband and his parents and bargaining between the wife and her parents. All three papers have the testable predictions that parents will transfer more to their children when their income increase and vice versa. Other theoretical literatures have proposed exchange motives (Foster and Rosenzweig (2001), Bernheim et al. (1985)). Under the exchange motives, one of the testable implications will be that there could be exchange of money from parents for non-market services received from their children. Moreover, there is also the insurance motives (Townsend, 1994) where the testable predictions are that the direction and magnitude of transfers should only be affected by aggregate consumption within a family. Net transfers will not be affected by factors such as parents or children income, their health status or any other socio-economic factors. Thus none of these factors should affect transfers conditional on aggregate family

consumption.

Notwithstanding the list of other theoretical studies on inter-vivo transfers, one of the main questions these studies often sought to address is the magnitude of transfer behaviours in response to changes in the parents' and adult children's income. Addressing this might allow us to better understand how to help the impoverished elderly since transfers by the government or public to the elderly might reduce the transfers which adult children make to their elderly parents.

In discussing the magnitudes of transfer effects, we focus on studies using data from developing countries. Ham and Song (2014) study of transfer behaviours between elderly parents and their adult children in South Korea found that both parents' and children's income are statistically significant in affecting the net transfer behaviours. In general, a 100000 won rise in parents' income will result in children transferring 50000 won lesser to their parents. The results that the transfers amount is negatively affected by the recipient's income is also supported by Raut and Tran (2005) and Kazianga (2006) study on Indonesia and Burkina Faso respectively.

We would like to highlight that the paper by Raut and Tran (2005) uses the same data, Indonesia Family Life Survey data that we are using and also looks at the two way transfers behaviour between parents and children. However, we would claim that this paper would differ from their study since we used a richer amount of data and the methodologies also differ from them.

Firstly, Raut and Tran (2005) uses the total number of children the parents have to capture the variation in altruism of a child towards his parents due to his siblings. In their paper, it is believed that a children with more siblings might be less altruistic and transfer lesser to their parents after factoring the transfers from his siblings to their parents. We believe this approach might be ambiguous, since it does not reflect how well off each child is. A child might transfer more to his parents if he has well off siblings who have not transferred much to their parents. In our study, we seek to address this by using the average income of the children or the total children's income to include how well off the parents' children are. A high average children's income or total children's income will imply that the children are generally well off and we would expect this to lead to more monetary transfers by the children to their parents. We believe using total children

income instead of average children income among the households might lead to better standard error since there are more variation for each households. Moreover, Raut and Tran (2006) only used data from year 1993. In our study, we use four waves of the IFLS longitudinal data, from 1993, 1997, 2000 and 2007. This might improve the power of our estimates and the accuracy of the study. Also, it is believed that including the year's fixed effects might enable us to understand the transfer behaviour during different economic environments. For instance, we are able to study transfer behaviour in times of economic hardship, where Indonesia experience the Asian Financial crisis in year 1997.

Also, in contrast to the structural approach adopted by Ham and Song (2014) study, our reduced form model does not consider transfers to in-laws for married couples. This is because the IFLS data does not include transfers between in-law parents, and lacks information on the children's spouse characteristics. Nonetheless, the upside of our study is that instead of only examining the transfer behaviour between parents and married children, we examine the behaviour for adult children in general, including unmarried children. Moreover, this study also includes transfers from siblings, not just considering only net transfers between one child and his parents. Also, in Ham and Song's paper, the child's income was present but the parents' income was missing and was imputed. In our study, the parents' income is present but the adult children's income is missing and hence we impute the missing adult children's income instead. We believe these differences might mean that our reduced form model will not estimate the coefficients as accurately as the structural model, if it is correct.

Also, Kazianga (2006) study of two-sided transfer behaviour between parents and children allowed the family's income to be endogenous. Kazianga used family assets as instruments for permanent income and rainfall as an instrument for transitory income. Our study also allow the family income to be endogenous. However, we use the elderly parents' education as instruments instead. Also, unlike other studies that consider zero transfers and employ Rosett's model (1959) (Rosett, 1959) to deal with the large spike of zero transfers, we still employ linear regression in our study. This is one area for improvement in future work. We present our econometric strategy in the next section.

3 Econometric Strategy

Our baseline specification is:

$$NET_TF_i = \beta_0 + \beta_1 Parents_Inc_i + \beta_2 Total_Child_Inc_i + \delta_1 1997_i + \delta_2 2000_i + \delta_3 2007_i + \beta X_i + \epsilon_i$$

where NET_TF_i is the Net transfer between parents and children. $Parents_Inc$ refers to parents' total income while $Total_Child_Inc_i$ is the total income for all children in the household. We cluster by each household to account for correlation within each family.

The identifying assumption for the net transfer determinants in our OLS specification is for net transfers to be independent of the parents' characteristics. This identifying assumption is adopted so that the parents' income could be made endogenous in later analysis. Parents income is likely to be jointly determined with the net transfers since the elderly parents might choose how long to work based on the amount of transfers they received from their children. Having the initial identifying assumptions might mean that the baseline specification might suffer from omitted variable bias by not including the parents' characteristics. However, we would be able to use the parents' characteristics as instruments for the parents' income in later analysis where we would relax the assumptions that parents' income is exogenous. Moreover, we would also like to note that since we are imputing the total children's income due to missing data, the total children income is allowed to be endogenous in our baseline specification.

For robustness checks of the OLS specification, we regress net transfers against separate samples of households who have only one living elderly parent and households who have two elderly parents. We also run separate regressions for urban and rural households. This is done to check if the transfer behaviour might differ substantially for single elderly parent household and on urban households. Also, to account for the fact that differences in how well off each child is might affect the net transfers behaviour differently, we also perform the same set of regressions with average child income replacing the total child income variable.

However, even under the identifying assumption, parents' income might still be endogenous. Parents' income might be jointly determined with the net transfer

between their children, since the extent to which elderly parents choose to work may depend on the transfers by their children. Moreover, the parents' current income might not be a true reflection of their permanent income that affects the net transfer behaviour Altonji et al. (1996). This might result in a bias of the estimates towards zero. Hence we relax the assumption that parents' income is exogenous and use the parents' education level as instruments for parents' income.

For households that only have one elderly parent, we let the number of years of education received by the head of household be the instrument for parents' income. For households that have two elderly parents, we let the years of education received by the head of household and years of education received by the spouse of the head of household to be the instruments for parents' income. Under the exclusion restriction principle, we would require that the parents' education to only affect the net transfers through the parents' income only. As with the case that all exclusion restrictions cannot be tested, we claim that this assumption might be reasonable to a certain extent since whatever other effects a higher education might have on net transfers, such as better knowledge of investing in children, will most likely be captured in having a higher income for the parents due to better education.

Under the OLS specification, we expect the signs of the parents' income coefficient and the total children's income coefficient to be negative and positive respectively. This would be in agreement with most empirical literature on intergenerational transfers to date, where the recipient's income will negatively affect the net transfers behaviour.

Finally we conduct a Hausmann specification test with the null hypothesis that parent's income is exogenous. This is done to check if it is necessary to remove the bias and inconsistency of the OLS estimates for the less efficient IV estimator. Two separate Hausman tests are conducted on households with 2 elderly parents and on households with one elderly parents only.

4 Data

We use the IFLS (Indonesia Family Life Survey) data. The IFLS is a longitudinal household survey that studies the fertility behaviour, infant and child outcomes, migration and employment patterns and health and socio-economic functioning of the population in Indonesia. The survey examines 7224 households from 13 provinces, tracked over different periods of time. This accounts for 83 % of the population in Indonesia. We used the IFLS data that contains the years 1993, 1997, 2000 and 2007. Also, year 1993 as the base year in computing all the variables real monetary values. Net transfers are defined as the difference in monetary transfers received from parents and the monetary transfers parents made to children. Hence a positive net transfers meant transfers are going net to parents, while a negative net transfer implies the reverse.

For each separate period, we exclude households whose head or spouse are not both above 55 years old and also for households where the elderly parents do not have any non-residing children. We construct the parents' total income by summing both the elderly parent and their spouse's labor and non-labor income together. The labor income consist of the total income of the parents' primary and secondary job income while the non-labor income consists of the income from the parents' assets.

Moreover, because the total yearly income of the adult children is important to our analysis but is missing from the survey, we impute each of the child's yearly income using an earnings equation. Firstly, all individual income are deflated using the 1993 price index. Next we drop individuals who have no income. Since we are only interested in the adult children's income and the elderly parent's children are likely to be in the middle age bracket, we only keep individuals who are between 25 to 45 years old. We next trim the data by dropping off the top and bottom 5 percentile of income. Finally, since it is likely that the male and female have their own separate earnings equation in Indonesia, we impute each individual's yearly income separately with regards to their gender.

However, in the imputation of the children's income, the years of education of children are missing and only the children's highest attained education is recorded. Hence, we convert this information into years of education. Individuals who have graduated from their highest level of education are allocated the typical number of

years needed to complete their highest level of education. For instance, individuals who list secondary school as their highest level of education will have 10 years of education. (6 years for primary education and 4 years for secondary education). For individuals who have listed only partially completing their highest level of education, we determine their years of education by taking the typical number of years needed to complete their next highest level of education and adding the remaining years. For instance, individuals who only completed up till year 3 of Secondary education will have 9 years of education. (6 years for primary education and 3 years for the remaining secondary education.) We did this for both the parents and the children. We would also like to highlight that imputing the income for children allow us to treat the total children's income as endogenous in our baseline specification. The imputed income is shown in **Table 1**.

The imputed earnings is consistent with the signs of the earnings equation from previous studies. We have both a positive marginal returns of education and experience for both male and female adults, and a diminishing marginal returns to experience also. The variables education, experience and experience squared are all significant to the 1 % level. Moreover, because the IFLS 2 data for the 1997 cohort was collected in 1996, before the Asian Financial crisis, it had one of the highest yearly fixed effects compared to pre-crisis (1993) and post crisis period where the economy was recovering. (2000 and 2007).

Each of the household's non co-residing children's income are then summed up to obtain the total children's yearly income variable. Since there is no information about net transfers for co-residing children within the household, we drop the income of co-residing children.

With the imputed relationship between the children's education and their income, we proceed to impute the income of non co-residing children of the elderly parents for each household. We only impute the income of the adult children between the ages of 25-45 years old and drop adult children outside this age bracket. Children with incomplete data such as missing education or age are dropped off in our sample.

Moreover, in order to deal with outliers of the net transfers, we further trim the data by dropping off the bottom and top 5 percentile of net transfers of the sample.

The summary statistics of the constructed sample is seen in **Table 2**. For the

constructed sample, each of the elderly household heads received an average of 3.46 years of education and each of the elderly household spouses received 1.48 years of education across the four cohorts. The parent income is the sum of the elderly parents' labour and non-labour income. Moreover, from the table, we can see that the year 1993, 1997, 2000 and 2007 consist of 14%, 31.2%, 31.2% and 23.6% of the sample respectively. Finally for our constructed sample, the urban population consists of 40.3% of the population while the remaining are from rural populations. Since both urban and rural account for a large portion of the sample respectively, it thus would be interesting to stratify the data into two different sub samples and compare their transfer behaviours. This is done in later analysis as well.

5 Results and Discussion

Table 3 shows the OLS regression results. The first column shows the baseline regression without any control variables. Parents and children income have the expected signs but only children income is statistically significant. The second column controls for the time effects. It is observed that the 1993 time dummy has a much larger effect than the 1997 base year dummy, we believe this might be due to the Asian Financial Crisis that takes place during the third quarter of 1997. The third column controls for the a dummy variable on whether there are two elderly in the household. The effect of having two elderly in the household is not well identified.

The fourth column controls for the urban/rural fixed effects. The effect of living in an urban area on the net transfers behaviour is also not well identified. The subsequent fifth, sixth and seventh column controls for two out of the three different dummy variables, mainly the time fixed effect, two elderly parents in household fixed effect and urban fixed effect.

The main result is in the column eight of **Table 3**. After controlling for yearly fixed effects, urban-rural characteristics and the two elderly parents in the household fixed effect, we find that an increase in 1000 rupiah of the total parents' income will result in children transferring 508 rupiah less to their parents. Moreover, a 1000 rupiah increase in children's income will result in children transferring 461 rupiahs net to their parents.¹ The sign and magnitude are consistent with past studies that used IFLS data. Raut and Tran estimated that a child will transfer half of his extra income to his parents for each child-parent pair. However, in our study, only children's income is statistically significant while elderly parents' income is not statistically significant.

¹We used year 1997 as the base year. At January 1997, the exchange rate is 1 SGD to 32.10 rupiah. The information on exchange rate is obtained from the website: <http://freecurrencyrates.com/en/exchange-rate-history/SGD-INR/1997/cbr>

Table 4 uses the same specification but replaces total children income with average children income instead. The format is completely analogous to **Table 3**. Considering column 8, which has all the explanatory variables of interest, the average children income is statistically significant to the 5% level but parents' income is not statistically significant in affecting the net transfer behaviour across all specifications. Moreover, both variables have the expected signs across all specifications, with parent income having a negative effect on net transfers and children income having a positive effect on net transfers behaviour.

Table 5 shows the OLS regression of the full model estimated for urban and rural samples separately. Upon stratifying into urban and rural sub samples, we find that children's income is statistically significant in only the urban sub sample. Parents' income remains statistically insignificant in affecting transfer behaviour. Although this might suggest that the transfers behaviour could differ for people living in the urban or the rural areas, we believe this might occur due to the measurement errors of the income for the people in rural areas. Moreover, the coefficient estimate for the children's income in the urban sample is also rather high and should be taken with a degree of scepticism. Finally, the coefficient year 1993 time dummy variable is very large for the urban equation.

The first and second columns of **Table 6** show the full OLS regressions for the sub-samples of households that only have a single elderly parent and households that have two elderly parents respectively. Just like the initial OLS specification, we are unable to get statistically significant estimates of parents' income while children's income is significant at 10 %. Further work needs to be done on the puzzling result. As noted above, parents income might be endogenous. This would occur if the parents take transfers into account when deciding how much to work. Hence we use parents education as an instrument for parents income and check if we are able to obtain different results.

Table 7 shows the first stage IV regression for sub-samples of households with one elderly parent and households with two elderly parents. Both instruments have F statistics greater than 10, suggesting that the parent's education is a strong instrument for parent income. **Table 8** shows the second stage IV regression. However, parents income remains statistically insignificant in the second stage

for both sets of regression. Although children income has the correct sign, it is statistically insignificant with two parents. Moreover, the Hausmann test statistics for both sets of households with one parent and household with 2 parents implies we do not reject the null hypothesis that parent's income is exogenous in both cases. We believe the Hausman test is not able to get any conclusive results due to the large standard errors for both the OLS regression and IV regression.

Taken together, our results imply that we did not find significant evidence of crowding out from parents' income. The estimates of the coefficient of the parents' income has a large confidence interval and the IV estimates of the parents' income coefficient are not statistically significant also. Future work might need more data.

Finding that the children income is statistically significant in affecting the net transfers behaviour has the policy implications that government transfers to the adult children has the indirect effect of raising the impoverished elderly welfare as well, since the children will transfer half of their income to their parents. Moreover, getting the same positive signs of the children's income coefficient also confirms that net transfers can be seen as a normal good in the eyes of the adult children. However, since the coefficient of parents income is not well identified, we are unable to know the effect on transfer behaviour should there be a government transfer to the elderly parents.

There are several suggested improvements and extensions to this study in the future work. First, the inclusion of time transfers between children and parents in the model. Next, we could use the Rosett's model to account for the portion of zero transfers to make our study more rigorous and our results more reliable. Finally, given that a new wave of IFLS has just been released, one could use the additional data in order to improve the confidence interval.

6 Conclusion

This paper attempts to estimate the determinants of transfers between adult children and their elderly parents using the IFLS data. Similar past studies have been conducted in both the East and Western countries and the existence and magnitude of the crowding out effects were mixed. We attempt to contribute to this burgeoning and growing literature of inter-vivos transfers by adopting a different methodology. In contrast to other structural models for estimating the determinants of transfers, we adopt a reduced form approach. Moreover, in a breakaway from most reduced form studies, we use a different choice of instruments for parents' income and also allow for both children's income and parents' income to be endogenous in the final specification.

We obtain results that are in agreement with past studies in the OLS specification, where both parents and children income have the same sign as previous studies, but only the children income is statistically significant. We also stratify the data into urban/rural and single/two elderly in the households sub samples to check if the transfer behaviour differs between the sub samples. The stratification into urban/rural sub samples shows that only the children income is statistically significant in affecting the net transfers behaviour for the urban sample. Although this might have suggest that the transfer behaviours of people living in urban areas differs from people living in rural areas, we would caution that the results should be taken with a degree of scepticism. Firstly, the coefficient of the children's income is exceptionally high. Moreover, it might be due to the measurement error since the income of the people in the rural areas are poorly measured. Also, stratification into single and double parent households give us inconclusive results.

Next, Our instrumental approach to allow the parents income to be endogenous does not give us any additional insights. This paper has the policy implications that the transfers by government to adult children has the indirect effects of improving the welfare of the elderly parents since their children will transfer part of their increased income to their parents as well. Finally, future work could extend our study by accounting for zero transfers using the Rosett's model, including the time transfers into the model, or using additional waves of IFLS data to improve the estimates of the coefficient.

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Table 1: Mincer Equation for Adult children

	yearly income	yearly income
years of schooling	161.8*** (2.834)	155.9*** (3.627)
experience	86.45*** (2.674)	74.76*** (3.906)
experience squared	-1.299*** (0.0499)	-1.119*** (0.0761)
year 1997	178.4*** (28.46)	88.20** (36.90)
year 2000	-4.194 (26.34)	-103.4*** (33.64)
year 2007	72.16*** (25.50)	-66.47** (33.55)
Intercept	-866.9*** (58.42)	-907.8*** (76.33)
N	16164	8213

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Summary Statistics

Variable	Mean	Std. Dev.	N
household head years of schooling	3.461	3.687	3166
household spouse years of schooling	1.488	2.809	3166
household head age	67.422	7.15	3166
household head age squared	4596.873	1004.29	3166
household spouse age	62.645	6.999	2058
household spouse age squared	2990.581	822.931	2058
household yearly labor income	421.833	652.589	3166
household yearly non labor income	194.569	629.859	3166
parent income	616.402	849.800	3166
child income	9281.947	5613.14	3166
avgerage children income	2656.887	621.775	3166
Net Transfer	2931.203	63127.973	3166
spouse in household	0.646	0.478	3166
no children	3.48	1.943	3166
children less than 25 years old	0.243	0.429	3166
children greater than 45 years old	0.249	0.432	3166
year 1993	0.141	0.348	3166
year 1997	0.312	0.463	3166
year 2000	0.311	0.463	3166
year 2007	0.236	0.424	3166
urban	0.403	0.491	3166

Table 3: Baseline Specification using Total Children's Income

	Net Transfers	Net Transfers	Net Transfers	Net Transfers	Net Transfers	Net Transfers	Net Transfers	Net Transfers
parent income	-0.957 (1.206)	-0.868 (1.186)	-0.852 (1.165)	-1.011 (1.176)	-0.491 (1.120)	-0.923 (1.154)	-0.902 (1.172)	-0.506 (1.111)
children income	0.476** (0.201)	0.439** (0.194)	0.482** (0.205)	0.473** (0.198)	0.462** (0.200)	0.437** (0.190)	0.479** (0.203)	0.461** (0.196)
year 1993		10087.7** (4052.1)			11441.2*** (4175.4)	10102.8** (4085.9)		11436.1*** (4141.0)
year 2000		152.8 (147.1)			139.0 (150.6)	147.6 (148.0)		137.9 (151.6)
year 2007		4780.0 (4041.1)			4761.1 (4034.5)	4739.8 (4116.8)		4751.7 (4120.3)
spouse in household			-924.3 (2534.0)		-3259.1 (2456.7)		-857.0 (2793.6)	-3238.2 (2673.7)
urban				562.5 (2175.7)		563.2 (2327.4)	439.9 (2448.8)	133.6 (2521.3)
Constant	-895.1 (1899.7)	-3205.4* (1910.3)	-417.6 (2335.5)	-1060.1 (2233.8)	-1727.7 (2065.7)	-3365.6 (2288.9)	-581.4 (3020.9)	-1775.2 (2731.1)
<i>N</i>	3166	3166	3166	3166	3166	3166	3166	3166

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Baseline Specification 2 Using Average Children Income

	Net Transfers	Net Transfers	Net Transfers	Net Transfers	Net Transfers	Net Transfers
parent income	-0.756 (1.197)	-0.670 (1.185)	-0.764 (1.170)	-0.775 (1.151)	-0.398 (1.127)	-0.675 (1.133)
average children income	3.500** (1.508)	4.012** (1.580)	3.507** (1.541)	3.476** (1.582)	3.871** (1.589)	4.005** (1.617)
year 1993		11108.1*** (4307.8)			12029.2*** (4326.2)	11107.9*** (4304.2)
year 2000		335.8 (218.3)			308.1 (217.9)	334.8 (228.9)
year 2007		5335.3 (4058.6)			5358.8 (4067.8)	5331.3 (4138.2)
spouse in household			74.04 (2532.2)		-2307.1 (2396.2)	101.1 (2748.4)
urban				197.4 (2309.8)		55.55 (2419.0)
Intercept	-5903.1* (3108.7)	-10240.6** (4063.3)	-5963.4 (4025.2)	-5905.7* (3105.5)	-8671.5* (4475.6)	-10240.7** (4063.8)
<i>N</i>	3166	3166	3166	3166	3166	3166

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Urban-Rural Stratification

	Urban	Rural
	Net	Net
	Transfers	Transfers
parent income	0.397 (1.830)	-1.891 (1.214)
children income	1.013** (0.403)	0.0531 (0.156)
year 1993	18194.0* (10253.9)	7384.0** (2957.5)
year 2000	371.4 (487.6)	127.9 (151.4)
year 2007	775.1 (3959.0)	8422.2 (6892.5)
spouse in household	-1450.2 (2369.3)	-4698.2 (4399.8)
Intercept	-8628.3** (4315.8)	3412.7* (2014.4)
N	1277	1889

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Single/Two Parents Stratification

	Single Elderly Parent	Two Elderly Parents
	Net	Net
	Transfers	Transfers
parent income	-1.796 (1.140)	-0.183 (1.390)
children income	0.589* (0.339)	0.401* (0.242)
year 1993		10358.3** (4040.9)
year 2000	155.9 (332.2)	210.1 (191.6)
year 2007	11075.7 (8256.3)	589.5 (4077.1)
urban	-5259.5 (4863.3)	3102.1 (3000.8)
Intercept	-1573.0 (2495.0)	-4644.0 (3284.9)
<i>N</i>	1121	2045

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

There are no single elderly parents in year 1993 after the construction of the data and the dummy variable for year 1993 is missing

Table 7: First stage IV regression

	Single Elderly Parent	Two Elderly Parents
	parent income	parent income
child income	-0.00428 (0.00384)	0.000728 (0.00350)
year 1993		-130.7** (52.82)
year 2000	44.66 (43.40)	63.30 (51.23)
year 2007	-101.8** (47.86)	-44.18 (55.04)
urban	142.8*** (39.63)	208.8*** (45.21)
household head years of schooling	52.24*** (8.184)	54.99*** (7.689)
household spouse years of schooling		28.16*** (9.379)
Constant	220.4*** (39.97)	404.8*** (49.45)
<i>N</i>	1121	2045
F statistic	27.8225	42.293

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We would like to point out that there are no single elderly parents in year 1993 after the construction of the data and hence fixed effects for year 1993 is missing

Table 8: IV regression

	Single Elderly Parent	Two Elderly Parents
	Net	Net
	Transfers	Transfers
parent income	2.089 (3.690)	4.761 (4.780)
children income	0.595* (0.342)	0.374 (0.237)
year 1993		11111.1** (4531.8)
year 2000	-25.83 (390.1)	-238.7 (477.4)
year 2007	11382.2 (8211.6)	525.2 (4105.2)
urban	-6216.7 (4843.5)	1186.9 (2696.8)
Intercept	-2658.6 (3306.3)	-7394.3 (4775.7)
<i>N</i>	1121	2045
Hausman Statistic	0.10	1.08

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We would like to point out that there are no single elderly parents in year 1993 after the construction of the data and hence fixed effects for year 1993 is missing