Long-term care and reciprocity:
Does helping with grandchildren result in the receipt of more help at older ages?

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VERY PRELIMINARY, PLEASE DO NOT QUOTE

Abstract

This paper investigates the presence of reciprocity in informal care provision among European families. Using data from the first two waves of SHARE (the Survey of Health, Retirement and Ageing) we empirically analyze whether the provision of informal childcare by grandparents at some point in time has an impact on the prevalence and intensity of informal care they will later receive, once needing care to perform activities of daily living, from adult children. Results show that the prevalence of informal care receipt is significantly higher for grandparents who previously provided childcare, while no effect is registered for the amount of care received.

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1. Introduction

European society experienced in the last century a spectacular demographic transition: the simultaneous sharp decline in fertility rates and mortality progressively increased the fraction of people aged 65 and over, up to the point that recent projections estimate that such a fraction will be above 30% by 2050 (Eurostat, 2008). One consequence of an aging population is the increase in older people's demand for care services (Comas-Herrera et al., 2006; Pickard et al., 2007), due to the limitations they experience in performing daily activities (i.e. basic tasks such as personal care, moving around the house etc.) or instrumental activities of daily living (i.e. housekeeping, handling finance etc.). Care services for older people may be provided by family or friends (informal care), or by paid professionals (formal care), either offering domiciliary services, or in home care institutions (in some countries as part of the public system of social care provision).

A large fraction of the long-term care services demanded by older people who exhibit limitations in their daily life is provided by adult children (see e.g. Kalwij, Pasini, Wu, 2011 for recent evidence based on SHARE data). Understanding the determinants of care provision by adult children is of paramount importance from a public policy point of view: informal care from children reduces the probability of nursing home entry (Charles and Sevak, 2005) and is a net substitute for formal home care (van Houtven and Norton, 2004, Bonsang, 2008, Bolin, Lindgren and Lundborg, 2008a). As such, informal care provision might decrease the fiscal cost of public long-term care expenditure programmes. At the same time, long-term care provision can have an important and negative impact on caregivers' labour market participation and career prospects, especially for women (Pezzin-Steinber-Shone 1999, Bolin, Lindgren, Lundberg, 2008b; Wolf and Soldo, 1994).

Adult children might provide care to their parents either because of pure altruism, or because they are, or expect to be, compensated by their parents either financially or through in-kind services. The latter motivation has been discussed in the literature on exchange motives for bequest initiated by Bernheim et al (1985) and Cox (1987). Using SHARE data, Alessie, Angelini, Pasini (2009) show that both mechanisms are in place in the case of long term care provision and inter-vivos financial transfers. Older parents can also compensate their adult children also by providing informal care services themselves. The compression of morbidity occurred in recent decades across Europe[1] increased the number of older people in good health conditions, who can providing grandparental childcare, thus reducing their adult children costs in terms of labour market involvement associated

[1] See Mackemback et al, 2008 for a comprehensive survey on the economic consequences of the compression of morbidity.

to fertility decisions (Dimova and Wolff, 2008; Arpino, Pronzato and Tavares, 2010; Blau and Currie, 2006). While a high proportion of grandparents providing childcare is observed throughout Europe, the intensity of such provision varies across countries, with Mediterranean countries displaying higher frequency rates than Continental and Nordic countries.

In this paper we want to investigate whether parents who have provided help, while in good health, by taking care of their grandchildren, will later receive more informal care from their children, once experiencing the onset of limitations in performing activities of daily living. Form a policy perspectives, whether high children involvement in long term care is the result of culture traits and habits, or the "repayment" for previous informal care received, is important: in the former case, adult children and in particular women are likely not to respond to economic incentives to change their caring and labour market patterns, while in the latter they are. In other words, in a life cycle perspective to the extent that grandparents' help is later reciprocated by their children providing informal care once parents' care needs arise, the combination informal child and long-term care provision might overall decrease the fiscal cost of public care expenditure programs without harming children, and in particular daughters, labour market prospects.

The empirical analysis is based on data from the first two waves of the Survey of Health, Aging and Retirement in Europe (SHARE). This panel survey covers individuals aged 50 or older and their cohabiting partners in Europe and collects detailed information on care provided and received, as well as on households demographic a socio-economic characteristics. The key idea is to investigate whether provision of informal childcare by grandparents, as observed in the first wave of data collection (in 2004) is significantly related to the prevalence (receipt of care) and intensity (number of days of care received) of informal care later received, as observed in the second wave (in 2006/07) from adult children living outside the household.

The rest of the paper is organized as follows. The next section presents the theoretical framework. Data, sample selection and variables description are covered by section 3. Section 4 presents estimation results, both for the binary model of care receipt, and the OLS regression for the number of days of care received. The final section concludes.

2. Theoretical framework

Our theoretical framework follows van Houtven and Norton (2004), who, as do many others, model the informal care decision by building upon the seminal article of Grossman (1972). The individual

demanding home care is the potential care receiver, while adult children are the potential informal care providers. Private institutions and the State are formal home care providers. Health status of the elderly is a function of past health shocks, chronic diseases and impairments in daily living but also of the received home care. The care receiver maximizes her utility, which depends on actual health status and consumption, subject to a budget constraint and given the informal care which children, other relatives and friends are willing to supply. Likewise, each potential home care provider maximizes her utility function by choosing consumption, leisure and informal care, subject to a budget constraint. An altruistic potential care provider incorporates the health of the elderly into her own utility (Becker, 1976) and decides how much care to provide, depending on her degree of altruism toward the care receiver and her opportunity cost of providing informal care. The crucial difference from van Houtven and Norton (2004) is that we account for care given by the elderly to their grandchildren as a mean to increase the degree of altruism and therefore the propensity to provide long-term care of their adult children. The intuition is that adult children might provide care to their parents either because of pure altruism motivated by blood ties and culture, or because they are compensated by their parents through in-kind services, namely childcare. The latter motivation has been discussed in the literature on exchange motives for bequest initiated by Bernheim et al (1985) and Cox (1987). Their argument is that the promise of a future bequest induce adult children to increase attention and contacts with their parents. A crucial feature of these models is that in order to be a credible incentive, the financial transfer from parents to children takes place after the latter received the attention they are aiming to. In our case, childcare, which replaces bequest in an exchange framework, is provided before long-term care: children could renege on their promise to help their parents in the future after receiving the in-kind transfer. Nevertheless, while there might be quite substantial incentives to renege on an agreement with an arbitrary third party, to do so with a family member might be quite costly in terms of reputation and family relations. Previous evidence in the literature goes along these lines: Peters et al. (2004) provide evidence from laboratory experiment that individuals linked by family ties tend to free ride less frequently in a public good game compared to strangers. Moreover, Alessie, Angelini, Pasini (2009) extend the Cox (1987) model to allow for inter-vivos transfer which typically take place early in adult children life in place of bequest as a driver of home care received later in life. Testing the model with SHARE data, they find that both altruism and exchange motives are in place.

To summarize, the key point of these theoretical considerations is that besides pure altruism towards elderly parents in need for care, help received with childcare can increase the propensity of adult children to provide informal care.

3. Data Description

We use data from waves 1 and 2 of the Survey on Health, Ageing and Retirement in Europe (SHARE). SHARE is a multidisciplinary survey that focuses on the population aged 50 years and over, conducted in several European countries. In particular, wave 1 was performed in 11 countries (Sweden, Denmark, Austria, Germany, France, Switzerland, Belgium, Netherlands, Spain, Italy and Greece) while the Czech Republic and Poland joined the survey starting with its second wave. The survey collects information on health, education, socio-economic status, family composition and social relations of the target population as well as some relevant information about respondents' children and parents.

In order to achieve our purpose we need to use data on individuals that participated in both wave 1 and wave 2 of the survey. We analyze the help that children provide to (old) parents in need (with ADL limitations) in wave 2, given that parents previously (in wave 1) supplied help with their grandchildren (their children's children). Hence, in constructing the dataset our first target is to link the information regarding the care that each respondent's child received from his parents in the past (with his own children care) to the information about the help that he supplies to the parents (respondent and/or spouse) successively, and, naturally, with the children's personal characteristics. To this end, we focus on those respondents that have children and grandchildren and we create a dataset in which the unit of observation is the respondent's child. We obtain in this way a cross-sectional dataset containing approximately 35000 observations from 11 European countries.

SHARE collects basic data (birth year, sex and proximity) for all of the respondents' children, while it provides information on grandchildren care and on the help given to parents for the respondents' first 10 children (ordered by birth year). In addition, the survey contains data about the marital status, the number of children, year of birth of the youngest child, education and occupation for four selected children. After linking all the data it turns out that we have all the relevant information on about 94% of the respondents' offsprings. SHARE collects and provides information both on the fact of giving/receiving care and on the frequency of help. While the information about grandchildren assistance is individual (both respondent and spouse/partner answer individually the related questions), the data on the care received from children regards the overall family (both respondent and spouse). For this reason we combined the relevant information in such a way as to get one record per family and child. Such an operation reduced the dimension of our database to 18523 observations but made the variables on help given and help received more comparable/akin.

As dependent variable we use both a dummy variable that reports for each respondent's child whether he/she gave help to any between the respondent or spouse and a frequency variable that measures the days per month of care for parents. As regressors we consider the characteristics of the care receiver: age, marital status, the number of ADL limitations, the variation in the ADL status between wave 1 and wave 2, household income and wealth and the relevant information for the care giver: gender, number of children, age of youngest son. In order to have consistent information we need to combine the individual characteristics of the respondent and spouse/partner in corresponding overall household data. To this end we use the mean age of couples in place of individual ages, and the maximum level of ADL limitations between partners instead of singular ADL. As for the measures of care given by parents with grandchildren we use the individual information to construct two comprehensive variables. The first is a dummy variable that takes value 1 if the respondent or spouse or both provided grandchildren help for the selected child. The second is a frequency variable that gives the total number of days per month with grandchildren help (sum of both respondent and spouse) supplied to each of the respondent's children.

Finally, we only keep those individuals that do not receive help from their children in wave 1 and this decreases our dataset to 17118 observations.

As a robustness control we include in the regressions also some variables that describe the type of family from a "caring" perspective. We use three such variables that are available in an additional "drop-off" SHARE questionnaire. Among others, the respondents are required to express their attitude (agreement or disagreement on a scale from 1 to 5) towards the following statements: i) "Grandparents' duty is to contribute towards the economic security of grandchildren and their families" ii) Grandparents' duty is to help grandchildren's parents in looking after young grandchildren and iii) the family should provide "help with household chores for older persons who are in need such as help with cleaning, washing?" Unfortunately, including this information in our regressions reduces much the dimension of our sample due to the high rate of non-response to the drop-off questionnaire (more than 31% of the respondents didn't answer these questions).

4. Empirical analysis

As it is standard in the health economic literature, we estimate a two-part model to address both the probability of receiving care, and the conditional amount of care. Therefore, first, we estimate a binary probit model of informal care provision by adult children, to assess whether previous (wave 1) provision of grandparental childcare is related to a higher probability of informal care provision

by adult children once their older parent care need has arisen (wave 2). The estimated marginal effects are reported in the first column of table 1. The third column reports results from an alternative specification, where to capture previously provided grandparental childcare we use the number of days in a month of grandparental childcare previously provided, rather than the dummy for whether such care was provided or not.

<<Table 1 about here >>

The marginal effect of having previously provided childcare to grandchildren is highly significant and indicates a substantial increase in the likelihood of informal care provision by adult children of 17 percentage points from its baseline value. The probability of adult children provision of informal care is 22% higher for grandparents whose care needs (as measured by ALDs limitations) have increased since the previous wave. Partnered grandparents are significantly less likely to receive care from adult children living elsewhere: the 33% decrease in the probability of adult children proving care to a partnered parent suggests that the cohabiting partner plays a major role as informal care provider. While the income coefficient is not significant, household financial wealth appears to affect the dynamics of informal care provision: grandparents with higher levels of financial means are less likely to receive informal childcare, possibly more capable of affording formal care as a substitute. Finally, the probability of care provision is slightly higher the older the care recipient is. Broadly comparable results are obtained when the 'quantity' of grandparental childcare previously provided is used as a repressor (column 3), rather than the dummy indicator.

The second and fourth column of table 1 report instead estimates from an OLS regression of the number of days per month of care provided to grandparents from children, conditional on receiving such care. Along the intensive margin, previously provided grandparental childcare (second column) or alternatively, the number of days provided (fourth column) do not appear to be significantly related to a higher amount of informal care days later provided by adult children to their older parents. The number of days per month of care provided increases significantly with the age and the number of ALDs limitations reported by the worse-off grandparent and decreases if the potential care receiver is partnered, confirming again the role of partners as primary informal care providers. Not unexpectedly, a significantly lower number of days is observed in Sweden, Netherlands and and Swizerland, while the opposite happens in Spain. Again, broadly comparable results are obtained when the 'quantity' of grandparental childcare previously provided is used as a repressor (column 3), rather than the dummy indicator.

Grandparental childcare and subsequent parent care could simply both concomitants of caring families, and in this case the latter could not be interpreted as a causal impact of the former. To address this issue, we perform a sensitivity analysis, where estimation is repeated after the inclusion of additional regressors, meant to capture the 'caring' nature of the family. Results from the sensitivity analysis are reported in Table 2. The inclusion of caring family indicators do not appear to substantially alter our findings: none of such indicators coefficient is statistically significant. In other words, no significant difference in the probability of grandparents being care by their younger children is registered for caring families, ceteris paribus. The marginally effect of the previously

provided grandparental childcare remains significant, although slightly smaller in size due to the sample selection we documented in the previous section.

<<Table 2 about here >>

5. Conclusions

Understanding the dynamics of reciprocity in the provision of informal care among families represent a timely and highly relevant policy issue: active grandparents childcare provision might reduce the cost of fertility decision for adult children, fostering their labour market participation. Previous informal care provision by active grandparents might later result in a reciprocated provision of informal care by adult children, once their older parent experience the onset of care needs, with implication both in terms of adult children labour market outcomes, and fiscal cost of long-term care expenditure programmes.

In this paper we have exploited the longitudinal dimension of SHARE data to investigate the presence and intensity of reciprocity in informal care provision in eleven European countries, including Mediterranean, Continental and Nordic countries. Both a binary model of informal care provision to older parents, and an OLS regression for the amount of care provided have been estimated. Results have consistently shown that previously provided grandparental childcare results in a higher probability that adult children will later reciprocate providing informal care to their older parents, but do not affect the frequency of informal care provision.

One potential drawback of our analysis is the fact that the time interval between wave 1 and wave 2 is too short and hence does not allow for major variations in the health status of respondent and, consequently, in the transition from the status of assistant (care provider) to that of assisted person (care receiver). Such a shortcoming will be settled in the future with the release of wave 4 of SHARE, containing data for 2010-2011 which will allow us to carry out a more rigorous analysis.

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Table 1

Variable	Probit[2][3]	OLS[4]	Probit[2][3]	OLS[4]
Dummy of care with grch w1	0.175***	0.556		
Days/month of grch help w1			0.005**	0.051
ADL_max_w2	0.056	1.391*	0.056	1.406*
Delta_adl (increase in ADL-dummy)	0.227*	0.945	0.225*	0.991
Log income	0.007	0.756	0.011	0.814
Log wealth	-0.027*	-0.076	-0.026*	-0.072
Partner	-0.332***	-1.864*	-0.331***	-1.892*
Age of care receiver in w2	0.011**	0.091	0.009*	0.086
Age of youngest child of child	0.007*	-0.002	0.005	0.002
Number of children of child	0.025	0.291	0.034	0.334
Gender of child (care giver)	0.004	1.066	0.007	1.011
Germany[5]	0.028	-0.543	0.034	-0.635
Sweden	-0.125	-4.181*	-0.122	-4.277*
Netherlands	-0.309*	-2.292*	-0.283*	-2.245*
Spain	-0.158	5.156*	-0.175	4.955*
Italy	-0.083	3.099	-0.104	2.993
France	-0.370**	-1.528	-0.363**	-1.523
Denmark	0.186	-3.179	0.195	-3.187
Greece	-0.123	1.976	-0.131	1.718
Switzerland	-0.189	-4.302**	-0.191	-4.373**
Belgium	-0.163	-0.704	-0.162	-0.812
_cons	-1.977***	-10.965	-1.895***	-11.188*
N	10254	579	10254	579
ll	-2112.455	-1971.024	-2115.787	-1969.797
r2		0.173		0.176

Table 2

[2] The dependent variable is a dummy variable that takes value 1 if the child provides care to parents.

[3] The coefficients represent marginal effects of variations in the indicated variables on the probability that the selected child provides help to parents.

[4] The dependent variable is the number of days per month of care supplied by the child to parents.

[5] We excluded from the regression the dummy for Austria.

* p<0.05; ** p<0.01; *** p<0.001

Variable	Probit[6][7]	OLS[8]	Probit[6][7]	OLS[8]
Dummy of care with grch w1	0.130*	0.763		
Days/month of grch help w1			0.002	0.099
ADL_max_w2	0.085*	1.558*	0.083*	1.561*
Delta_adl (increase in ADL-dummy)	0.07	-0.14	0.072	-0.062
Log income	0.011	0.151	0.013	0.22
Log wealth	-0.031	-0.072	-0.031	-0.109
Partner	-0.301***	-1.104	-0.296***	-1.06
Age of care receiver in w2	0.013**	0.037	0.011*	0.034
Age of youngest ch of child	0.003	0.06	0.001	0.068
Number of children of child	0.037	0.266	0.045	0.302
Gender of child (care giver)	-0.019	1.178	-0.013	0.982
Caring family 1[9]	0.019	0.452	0.019	0.45
Caring family 2[10]	0.014	-0.16	0.01	-0.105
Caring family 3[11]	0.028	0.137	0.028	0.065
Germany[12]	0.079	-0.766	0.085	-0.855
Sweden	-0.225	-2.072	-0.224	-2.025
Netherlands	-0.249	-1.728	-0.229	-1.718
Spain	-0.18	7.781*	-0.192	7.818*
Italy	-0.194	5.717*	-0.204	5.613*
France	-0.451**	1.076	-0.444**	1.222
Denmark	0.074	-1.424	0.08	-1.249
Greece	-0.135	1.914	-0.135	1.348
Switzerland	-0.213	-3.185*	-0.211	-3.255*
Belgium	-0.13	-0.515	-0.125	-0.635
_cons	-2.216***	-4.282	-2.114***	-4.126
N	6999	385	6999	385
ll	-1425.139	-1302.253	-1427.487	-1299.783
r2		0.196		0.206

[6] The dependent variable is a dummy variable that takes value 1 if the child provides care to parents

[7] The coefficients represent marginal effects of variations in the indicated variables on the probability that the selected child provides help to parents.

[8] The dependent variable is the number of days per month of care supplied by the child to parents.

[9] "Grandparents' duty is to contribute towards the economic security of grandchildren and their families"

[10] Grandparents' duty is to help grandchildren's parents in looking after young grandchildren

[11] Should the family provide "help with household chores for older persons who are in need such as help with cleaning, washing?"

[12] We excluded from the regression the dummy for Austria.

* p<0.05; ** p<0.01; *** p<0.001