

First Results from the Survey of Health, Ageing and Retirement in Europe (2004-2007)

Starting the Longitudinal Dimension

November 2008

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5.5 Informal Care and Labour Force Participation: The Economics of Family Networks

Lisa Callegaro, Giacomo Pasini

An aging society raises the problem of long term care for older individuals. In many European countries such a burden lies on family members, in particular on adult female children: informal care is widely spread and formal state-provided care is not a perfect substitute for it. Bonsang (2008), using data from the first wave of SHARE found that the receipt of paid help and informal care are interrelated, but that this relation holds only for certain types of formal care and changes along a North-South gradient. Such a result underlines that while individual choice to provide informal care and household spending on formal care are correlated, it is not clear whether they are complements or substitutes. This might be due to the institutional setup – i.e. on the health care system and on the incentives to provide informal care – but also to cultural differences. Reher (1998) underlines that what drives differences in time spent caring between Continental and Mediterranean Europe are cultural attitudes towards family ties. Informal care choices have an impact on parents' well-being, but also on labour force decisions of individuals: based on SHARE, Crespo (2006) finds that labour force participation is significantly reduced if individuals have to care for their parents. Thus, cost and effectiveness of formal care as well as labour force participation policies depend crucially on the decision mechanism behind informal care provision. Pezzin and Steinberg Schone (1999) as well as Callegaro and Pasini (2007) found that adult children behave strategically when facing a caring decision: each child chooses how much to care, taking into account its siblings' choices.

The next Section outlines the main implications of a game theoretical approach to informal care provision. Section 2 provides an overview on institutional differences across Europe with regard to long term care. Section 3 describes the children dataset obtained from the second wave of SHARE; Section 4 is devoted to the analysis of cross-Sectional evidence and cross-country comparison of informal care, while Section 5 exploits the longitudinal dimension of the survey. Conclusions are made in the last Section.

A Game Theoretic Framework

Informal care involves a decision on how to allocate time, which is a scarce resource. Callegaro and Pasini (2007) develop a game theoretic framework in which adult children allocate their time to work and care simultaneously, taking into account siblings' choices. Total care provided to parents is a public good within the family; it is made up of formal care bought by parents and care provided by each child. Children's satisfaction depends on their consumption and on parents' well-being: since the available time for caring or working is finite, they face a trade-off between going to work and thus increasing disposable income, and helping their parents. Such a choice depends on the wage each individual can obtain on the labour market, on material costs of caring (e.g. transportation costs), on price and availability of formal care, but also on brothers' and sisters' choices. If individuals are purely altruistic, help provided by siblings is a potential substitute for individual help: *ceteris paribus*, given the total amount of care the more other siblings help, the lower will be individual help provision. In other words children behave strategically: they coordinate and those for whom care provision is cheaper reduce time spent working in favour of time spent caring. Children may behave differently if they compete for a reward. Suppose a parent commits himself to split the future bequest among his siblings proportionally to

the relative amount of care provided by each child. In this case in order not to reduce the future transfer, the more other siblings help, the higher is individual provision. This is the strategic bequest described by Bernheim et al. (1985), which has been directly tested by Angelini (2007) on SHARE data. The author finds that the number of contacts between parents and children increases if there is a bequest to compete for. Such a result does not hold for care provision: the altruistic motive dominates the strategic bequest one.

Long Term Care Across Europe

As we already stated in the introduction, there is a great heterogeneity among European countries as regards long term care. Institutions can directly provide services and benefits to the elderly or sick individuals, but they can also induce informal care provision by means of incentives to family members. Long-term care is provided by different institutions: national government, local administrations, regional health care offices or health insurers. Services and benefits vary as well: Table 1 summarizes them.

Countries	Benefit for sick and/or elderly			Benefit for family carers		
	monetary transfer	domestic care	nursing homes	leave of absence	monetary transfer	tax allowance
Sweden	yes	yes	yes		yes	
Denmark		yes	yes		wage compensation	
Germany	yes	yes	yes			
Netherlands	means tested	yes	yes			
Belgium	means tested	yes				
France	yes		yes			
Switzerland	means tested	yes	yes		wage compensation	
Austria	yes	yes	yes			
Italy		partial	yes	yes		
Spain	yes	yes		yes		
Greece	yes	yes	yes			yes
Poland	yes	yes	yes		yes	
Czech Republic	yes	yes	yes		means tested	
Israel	yes	yes	yes	yes	indirect support	yes

Table 1 Long-term care across SHARE countries

Source: MISSOC tables for EU countries, national SHARE team for Israel

Benefits towards the elderly are quite widespread. Monetary transfers, either means-tested or not are present in 12 countries out of 14. We divide services in two broad categories: nursing homes and formal care. The latter accounts for any kind of service the elder receives at home: nursing, personal care, housekeeping, meals on wheels and so on.

Some European institutions recognize the role of adult children or other family members in the provision of care. Incentives to provide informal care tackle the trade off between time spent caring and time spent working with wage compensations, monetary transfers or allowing (non-paid) leaves of absence.

Sample

Two main implications result from the theory outlined in Section 1. First, labour force participation and informal care decisions are simultaneous and should be studied jointly. Second, children behave strategically: other siblings' choices matter on individual decisions. In order to verify them we extract a children file from SHARE 2006 data. The survey has information on three generations: the respondents, their parents and their children. Health status is available only for the respondents, thus selecting only their children dataset allows us to control for parents' health measures. This choice could lead to a distortion: the sampling is based on the respondents and it is not given that our dataset is representative of their siblings' population. In particular, treating respondents only as parents returns us a sample on average younger than the population we want to do inference on. In a similar setting Crespo (2006) shows this is not a problem. Moreover, we want to put ourselves in a "worst case scenario": care needs from parents are likely to be increasing with age, thus finding evidence on younger children, suggests that we can safely expect to obtain the same or even stronger evidence on an older children sample.

Observations came from families with at least two siblings. We include at most the older four children of each family since we do not have information on labour force participation of younger siblings. We exclude as well households with co-residing children: we consider living arrangement decisions as predetermined: this is equivalent to assume that the game described in Section 1 takes place only among non co-residing children. The motivation for such a choice is that adult children living with their parents are likely to share their labour income and living costs, thus some determinants of their caring choices are not directly comparable with siblings living outside their parents' house. Living arrangement decisions have been studied among others by Alessie et al. (2006) and are beyond the scope of the present paper.

We end up with a sample of 25,319 adult children, with a country size ranging between 927 of Spain and 2746 of Sweden. Mean age is around 40 throughout Europe, and the sample is almost equally split between men and women. Labour force participation rate is well above 70 per cent, but the percentage of people working part time and full time varies across countries: part time workers in the Netherlands are 20.4 per cent of the whole sample, while they are less than 3 per cent in Spain, but the overall labour force participation rate is similar in those countries.

The 'social support' module of SHARE asks about three types of help received from each child since the previous interview: personal care, help in housekeeping and paperwork. We rescale each type of help in order to be measured in hours per week and then aggregate them in a unique "hours of informal care" measure.

Probability of Helping and Hours of Help: Differences Among Countries

Figure 1 reports the proportion of children providing help and the average number of hours per week provided by each child. Germany, Greece and Czech Republic are the countries with the highest proportion of children helping (left panel). Czech Republic fraction in particular is remarkably higher than the rest of SHARE countries. This rate is in line with other surveys run in the same country: a substantial amount of care within the family is traditionally expected and delivered in this country. Moreover, institutional changes occurring in a country that undergoes transition are demanding in terms of cognitive ability and paperwork, therefore parents might ask their children for extra help in this respect. Turning to the intensive margin of help, i.e. to the number of hours spent providing infor-

mal care, a clear North-South gradient arises: this is consistent with the sociological literature (see as an example Reher, 1998): family ties are stronger in Mediterranean countries, and they induce adult children to think to formal care as something to avoid as long as family members are able to help for their elderly relatives.

Both panels of Figure 1 reflect substantial cross-country heterogeneity. Cultural differences explain part of it, but individual choices are likely to depend on differences in institutional long term care systems as well. The two effects are difficult to disentangle: costs for nursing homes and professional in-house services, but also the strength of family ties, increase along a North South gradient.

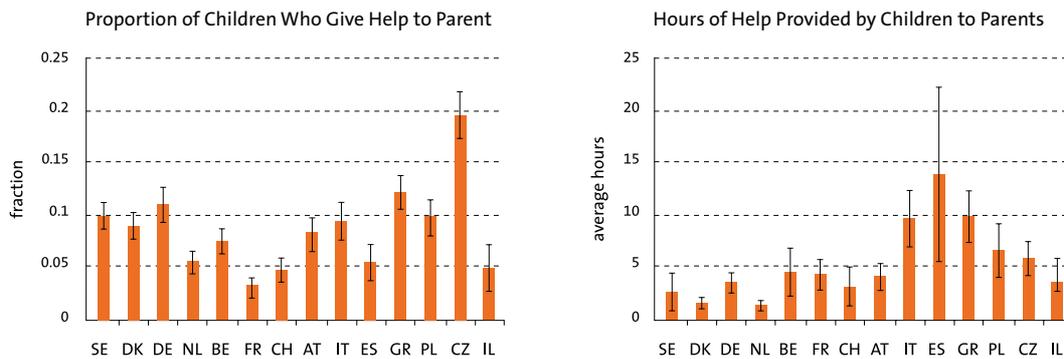


Figure 1 Informal care provision: the choice of help. Weighted observations

Labour Force Participation and Caring Choices Are Simultaneous

Informal care provision and labour force participation are simultaneous choices: Figure 2 reports the fraction of people helping conditional on labour force participation. Again, there is stark cross-country heterogeneity: Greece, Sweden and Denmark exhibit a weak dependence, while in many other countries workers provide significantly less care. Comparing Sweden and Denmark on one side with Spain and Italy on the other, this is consistent with evidence in Figure 1: in Mediterranean countries those who decide to help spend a large fraction of their time on this activity, while in Northern Europe children are able to work full time and provide 3-4 hours of care per week. Nevertheless, results are affected by poor significance due to the small sample size. We do not investigate further the simultaneous choices of hours of work and informal care provision based on a multivariate analysis since the focus here is on the strategic behaviour of siblings.

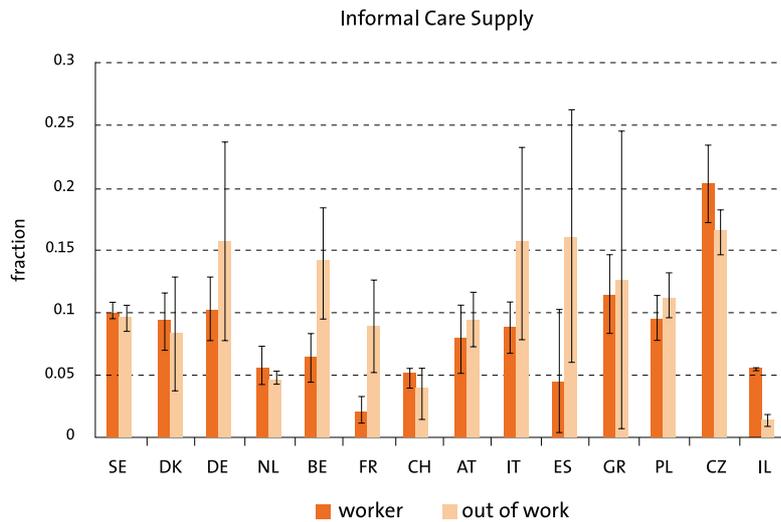


Figure 2 The choice of help conditional on labour force participation decision. Weighted observations

The More Other Siblings Help, the Lower Is Individual Help Provision

The second testable implication from the theory is that children choose strategically: the probability of helping depends on the number of siblings providing care. In Figure 3 we restrict to households where at least one child helps: the dark bar is the unconditional probability of helping. The lighter bar is the same probability given that at least two siblings in the family provide help. The presence of other children providing care reduces the probability of helping. While consistent with the altruistic motive of caring outlined in Section 1, this results do not rule out strategic bequest à la Bernheim et al., Nevertheless, it tells us that if there is competition for a bequest, it's effect on individual choices is dominated by altruism.

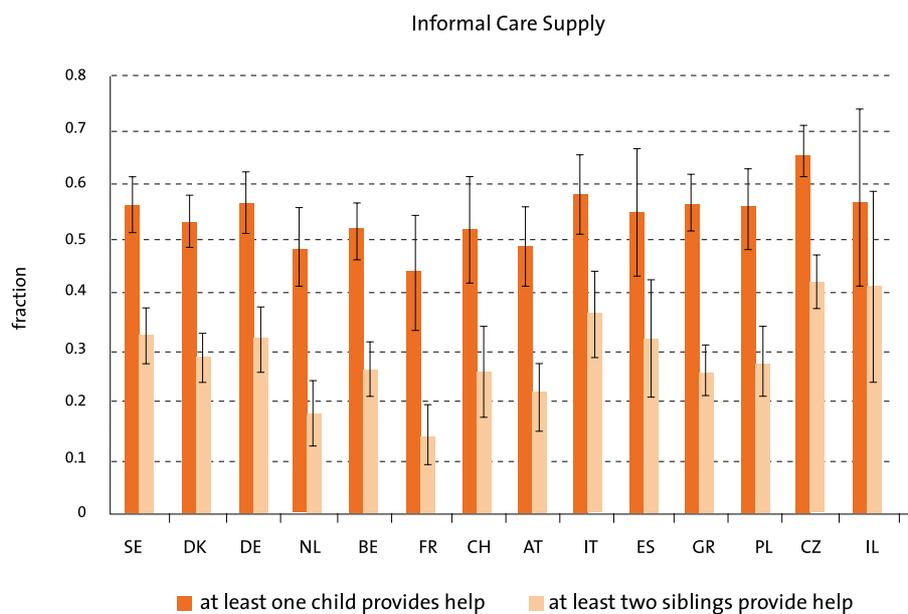


Figure 3 Interactions among siblings: probability of caring. Weighted observations

Figure 4 reports the total (left panel) and per capita (right panel) hours of help provided by children conditional on the number of brother and sisters helping. As in Figure 3, the dark bar refers to households where just one child helps, the lighter one to households where at least two children provide care. Results are in line with the implications of the game theoretic model of Section one: total amount of care do not change or increases if there is more than one child providing help, and the burden of each carer is reduced. Again, this is consistent with the altruistic motive: hours of care provided by each child are substitute.

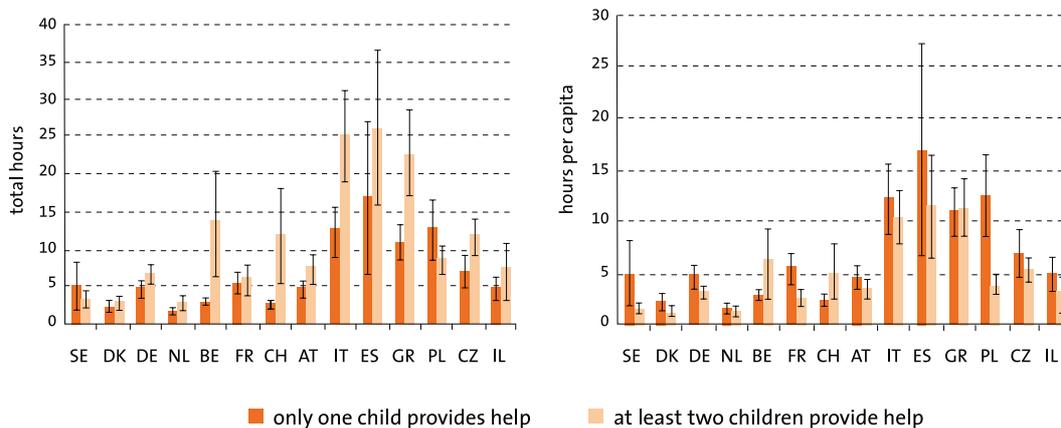


Figure 4 Interactions among siblings: hours of care provision

Parents’ Health Worsening and Informal Care Supply in a Longitudinal Analysis

By now we focused on the second wave of SHARE. In order to exploit the effect of parents’ health on informal care provision decisions, we exploit the panel structure of the survey. The probability that at least one child in the family provides help (phelp) depends on the health status of the parents, but also on how their conditions evolve along time. Therefore, we restrict to the panel sample and we run a probit regression of phelp in 2006 on the health status in 2004, measured as the number of limitations in ADL (activities of daily living), on health worsening, i.e. on the difference between ADL limitations in 2006 and 2004, and on a number of controls. Marginal effects are reported in Figure 5: every limitation in ADL in 2004 augment the probability of helping by 4.7 per cent, while every additional limitation appearing between waves raises phelp by 3.4 per cent. The interaction between the two is negative, though not statistically significant: thus as we expected the worse the starting health conditions of the parents, the less relevant is the dynamic term.

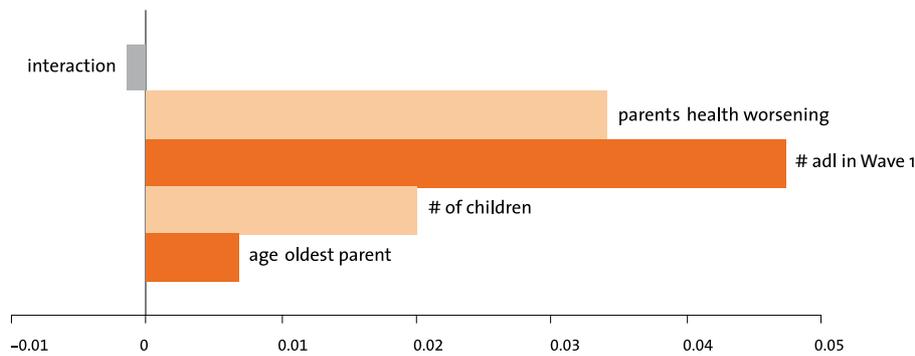


Figure 5 The choice of help in a multivariate analysis

Conclusion

We analysed the determinants of adult children choice to provide care to their parents.

- First, we found that children choose simultaneously how much time to spend working and caring. Such a result has important policy implications: as an example, a public intervention in favour of female labour market participation is likely to reduce the amount of care provided to elderly people, thus from a global perspective it may not be welfare enhancing.
- Other siblings' help reduce each child propensity to provide care. With respect to care provision the altruistic motive dominates the strategic bequest one. From a policy point of view, such a result has two implications. First, any targeted intervention on wages or informal care provision of a particular group of citizens is likely to have an impact on the whole population via this substitution effect. Second, changing the laws ruling bequests – in particular sharing of it among direct inheritors – has little effect on care provision.

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