Parental health and location choices of children

Louis Arnault*, Sandrine Juin[+], Anne Laferrère*

*PSL, Université Paris-Dauphine, LEDa-LEGOS

[+] Université Paris-Est Créteil, Erudite

Preliminary version, please do not quote

March 2018

Abstract. All over Europe, both the financial pressure on health and long-term care public protection systems and the growing number of divorces and break-ups could increase the need for intergenerational in-kind family transfers. Providing services is made easier by the geographical proximity between parents and children. The aim of this article is to study to what extent the location choices of children are associated with family in-kind transfer motives. Specifically, we investigate the relationship between parental health and disability status and the geographical proximity to their children. Using longitudinal data from the Survey of Health, Ageing and Retirement in Europe (SHARE), our empirical analysis indicates that services provided by the parents to the children seem stronger drivers of children's location choices than those in the reverse direction. In particular, parental health and disability shocks have only moderate effects on children's housing transitions. Given the socio-economic changes expected for the next decades, this result might have major impacts on the future supply of family care in Europe and should be accounted for when implementing public policies towards the disabled elderly.

Keywords: living arrangements; distance; family transfers; disability; informal care.

JEL Classification: C250; D100; J140; I100.

Correspondance to: Louis ARNAULT, Université Paris Dauphine, LEDa-LEGOS, Place du Maréchal de Lattre de Tassigny 75775 Paris Cedex 16, France. E-mail: louis.arnault@dauphine.fr. Phone: +33144054322.

1. Introduction

In the next decades, one can expect an increasing need for intergenerational solidarity within families for at least three main reasons. First, population ageing will put financial pressure on health and long-term care public protection systems. According to Eurostat, the share of 80+ in Europe should grow from 5.3% in 2015 to 12.3% in 2060. Taking France as an illustrative example, Renoux et al. (2014) indicate that public long-term care expenditures could increase from 21 to 35 billion EUR between 2011 and 2060. Governments could thus be tempted to rely more often on families to provide their elderly dependent population with the adequate amounts of care. Second, more unstable career paths and higher housing prices are likely to increase the need of intergenerational solidarity, especially from parents to their children. The long-term unemployment rate, for instance, increased from 3.0% to 4.5% in Europe (Eurostat). Parents of children facing economic hardship will have to support them more often and for longer periods of time than it is currently the case. Third, the rates of divorces and separation of couples have increased in the last decades. The divorce rate in Europe reached 2.0% in 2011 compared to only 0.9% in 1970. In France, only 10% of couples who entered a relationship in 1970 had broken up ten years later compared to almost 30% at the end of the 80's (Vanderschelden, 2006). Up to now the increase in the divorce rate was mitigated by a reduction in the gender gap of life expectancies. But, in the future, divorces could increase the number of elderly persons living alone and have major effects on the need of support of both aged parents and their adult children. Serial marriages also multiply the number of potential parents and step-parents to care for in old age and may weaken family ties.

Intergenerational solidarities can be expressed in two main ways: by "cash" (i.e. financial) transfers or "in-kind" transfers of services. Contrary to cash transfers, in-kind services are made easier by the geographical proximity of family members. Indeed, as soon as these transfers are regular, they often require the caregiver to live together with or close to the individual helped. For instance, informal care provision towards elderly parents has been shown to decrease rapidly with the geographical distance between parents and children. Geographical proximity is even commonly used as an instrumental variable for the provision of informal care in equations explaining formal care use or nursing home entry (Bolin et al., 2008; Bonsang, 2009; Charles and Sevak, 2005). In addition, Grenwell and Bengston (1997) highlight the negative impact of geographical distance on in-person contacts even if they do not observe any significant effect on telephone calls in the US. Hank (2007) also observe such a negative association between distance and the frequency of all types of contacts in Europe. Finally, the geographical proximity between parents and children can influence the labour force participation of young parents, especially mothers, because of the grand-parents help with child care. Compton and Pollak (2014) and Compton (2015) show a negative impact of co-residing with her mother on a women's probability of working but positive effect of close proximity. Their interpretation is that co-residence is associated with a greater propensity for providing the mother with informal care, while close proximity would enable the grandmother to take care of the grandchildren[1].

[1] Dimova and Wolff (2008) also show that grandchild care has a positive impact on the labour supply of the mother, on a specific sample of French immigrants.

However, to our knowledge, only a small number of studies have dealt with the explanatory factors of the geographical distance between parents and children. This is mainly explained by data limitations: most surveys are old (from the 80's and the 90's), cross-sectional, and provide very few information on parents and siblings. In their seminal paper, Konrad et al. (2002) suggest a model where two altruistic adult children decide where to live, anticipating that their parents may need services requiring proximity of one of them in the future. Moving and providing in-kind services are costly in terms of time and money. Thus, the children play a strategic game where the eldest child, who generally moves first, chooses to live further away than the youngest to provide less of the "care" public good, free riding on his sibling's altruism. Their empirical analysis on German data confirms theoretical predictions. From a broader perspective, factors mainly associated with the labour market participation of children, such as a high socio-economic status or the level of education, are significant drivers of intergenerational distance (Chan and Ermisch (2015) on UK data; Konrad et al., 2002). Married children and children having siblings also tend to live further away (Compton and Pollak (2015) on US data; Kureishi and Wakabayashi (2010) on Japanese data; Løken et al. (2013) on Norwegian data; Rainer and Siedler (2012) on EU data). Indeed, children could cooperate or free-ride on each other (Maruyama and Johar (2017) on US data) and their location choices may result from a family-decision process. Parental characteristics seem to have a more moderate effect on location choices of their children. According to Bonsang (2009) and Charles and Sevak (2005), who use the geographical distance of children from their parents' dwelling as an instrumental variable for their informal care supply, the location choices of children do not depend on their parents' health and disability levels. Using Indonesian data, Johar and Maruyama (2011) also find that co-residence is less responsive to health needs of elderly parents than to the costs and benefits to the children. Only the parental widowhood tends to reduce the distance and to increase the probability that a parent co-resides with a child (Pezzin and Schone (1999) on US data).

This paper explores the location choices of children from an empirical perspective. Using longitudinal data focusing on 50+ individuals and all their children in 17 different European countries, we extend the existing literature by studying whether the location choices of children are affected by family in-kind transfer motives. Specifically, we investigate the relationship between parental health and disability status and the geographical proximity to their children. Two main questions are investigated: Do shocks affecting the parental health and disability status drive children to reconsider their location choices? Who will have the highest probability of providing their parent with in-kind informal care in the future? Providing empirical evidence about the determinants of location choices of children in general, and about the effects of shocks affecting parental health and disability in particular, is very important from a public policy perspective. First, it could help public administrators to have clearer ideas about the future care arrangements among European families and about the evolution of the global supply of informal care for European elderly, in the actual context of population ageing. Then, it could help implementing specific policies either to support those who are expected to become informal caregivers, or try to encourage those who have the lowest probability of involvement.

2. Data

2.1 The Survey on Health, Ageing and Retirement in Europe (SHARE)

We use the data from the Survey on Health, Ageing and Retirement in Europe (SHARE), a longitudinal database including information on family, health, disability, childhood, employment, retirement and social environment of European individuals aged 50 or more and their partners. SHARE is comparable to the Health and Retirement Survey (HRS), launched in the US in the early nineties. In SHARE, individuals were interviewed every two years since 2004 and five survey waves (waves 1, 2, 4, 5 and 6) are used in this article[2].

2.2 Sample selection

Initially we have information on 120,113 different individuals aged 50 or more, which corresponds to 260,244 pooled observations because some respondents answered the survey at several waves. Thanks to the information given by the respondents about all their children, we build a database at the child level. Starting from our 120,113 parents aged 50 or more (260,244 observations), we keep only those whose information about their children' gender and year of birth are consistent from one wave to another (212,334 observations), who live in the community (i.e. not in nursing home), in Sweden, the Netherlands, Denmark, Austria, Germany, France, Switzerland, Belgium, Luxemburg, Czech Republic, Poland, Slovenia, Estonia, Spain, Italy, Greece or Portugal (199,472 observations) and who have between 1 and 4 children alive (165,403 observations).[3]

Switching at the children level, it corresponds to 329,968 observations. We only keep adult children, i.e. those aged 18 or more (319,285 observations), because the moves of younger children are often temporary. For technical reasons we also drop children whose parents have moved from one wave to another. In this specific case, the geographical distance between children and parents may have been incorrectly measured in SHARE. It corresponds to 309,477 observations. We keep only observations whose values of the main variables of interest, especially the geographical distance, are not missing.

Finally, we are left with 290,594 pooled observations at the child level, corresponding to 148,285 parent/child couples and to 102,967 distinct children.

[2] We exclude data from wave 3, which are different from other waves (SHARELIFE retrospective survey).

[3] We exclude families with more than 4 children for technical reasons: detailed information on children was provided only for up to 4 children in waves 1 and 2.

3. Empirical strategy

3.1 Variables of interest

For each child, the variable measuring the geographical distance from his or her parent's dwelling has nine modalities: 1 if the child co-resides with his or her parent(s), 2 if the child lives in the same building, 3 at less than 1 km from the parental dwelling, 4 if he or she lives at between 1 and 5 km, 5 at between 5 and 25 km, 6 at between 25 and 100 km, 7 at between 100 and 500 km, 8 at more than 500 km, 9 if the child lives abroad. This variable is grouped into three categories: coresidence[4], less than 25 km without coresiding, more than 25 km. We chose a cut-off of 25 km (and not 100 km or more) because it makes regular in-kind transfers possible. It also ensures a sufficient and relatively similar number of observations in each distance group.

We intend to explore the effect of parental health and disability status on children location choices. Especially, we want to test whether children tend to live closer to parents suffering from health conditions or disabilities to provide them with help, care or emotional support. Consequently, several health and disability indicators are introduced in the models: a polytomous variable indicating the number of chronic diseases of the elderly parent, a four-categories variable of his or her level of disability and the score at a memory test (10-words immediate memory test) to evaluate the degree of cognitive impairments.

3.2 Specifications

We estimate two different models to explain the geographical distance between children and parents. The first one $(Eq.1)$ is a pooled multinomial Probit[5] model and aims to describe the main determinants of the geographical distance D_i from a child to a parent: D_i equals 1 if the child coresides, 2 if the child lives at less than 25 km without coresiding and 3 if the child lives at more than 25 km from the parental dwelling.

$\forall j \in \{1,2,3\}$,

$$D_i = \underset{j}{\operatorname{argmax}} \left(D_{ij}^*\right) = \underset{j}{\operatorname{argmax}} \left(\alpha_{1j}{}' H_i + \alpha_{2j}{}' P_i + \alpha_{3j}{}' C_i + \epsilon_{ij}\right) \qquad (Eq.1)$$

Where D_{ij}^* is the latent variable associated with distance, for each parent/child couple i

$$\epsilon_i = (\epsilon_{i1}\ \epsilon_{i2}\ \epsilon_{i3}) \sim i.i.d\ N(0,1)$$

[4] In the "coresidence" group, we also include the few observations of children living "in the same building" as their parent.

[5] Close proximity and coresidence are qualitatively different and do not have the same implications in terms of costs and privacy. Compton & Pollak (2015) argue that coresidence should not be treated as the limited case of close proximity, as "[they] are qualitatively different and do not have the same implications in terms of costs and privacy". As a result, we estimate non-ordered polytomous choice models (multinomial Probit models) rather than ordered ones or dichotomous choice models.

In addition to the variables measuring the parent's health and disability status (H_i), we control for a set of other characteristics of the parent (P_i): gender, age, squared age, being a biological parent, education level, current job situation, household income per consumption unit, household net value of assets, and living area (urban or rural). We also control for their couple and marital status because we want to assess the validity of the hypothesis that children tend to live closer to widowed parents living alone for providing them with the care or emotional support that can no more be provided by a spouse. In addition, we account for the characteristics of the child considered (C_i) in the model: gender, age, squared age, education level, current job situation, number of siblings and birth rank. Among children characteristics, we introduce the child's marital status and expect to find a positive effect of a child's divorce on geographical proximity to the parents, who could provide financial or emotional support. A single child is also expected to be more likely to coreside, as he may never have left to marry, or his single status may proxy for some sort of disability or bad health. The child's employment status (employed or not) is also controlled for and we expect that unemployment has the same type of effects as divorce, because it is linked to a reduction in economic resources. We finally proxy the need for grandchild care by controlling for the presence of grandchildren and expect a positive effect of having children on the child's probability of living close to the parents' household. This first model is estimated on our global sample of pooled observations[6] (N=290,594 observations).

The second model ($Eq.2$) is dedicated to evaluating the impact of parental health and disability shocks on a child's transition, i.e. on a child's probability of either staying at the same distance, or moving further away or coming closer to his/her elderly parent between two waves. This model can only be estimated on parent/child couples, who are observed at least at two different waves. Here, we estimate the model on different subsamples according to the child's gender but also according to the child's distance to the parent at wave $t-1$. Indeed, the possible transitions of children between two waves strongly depend on their distance at wave $t-1$, and their response to parental needs could differ widely according to their gender. Thanks to multinomial Probit models, our idea is to estimate the probability of coresiding, living at less than 25 km (without coresidence) or living at more than 25 km at wave t, the distance at wave $t-1$ being known.

$\forall j \in \{1,2,3\}$,

$$D_{it}|D_{i(t-1)} = \underset{j}{\operatorname{argmax}} \left(\beta'_{1j} H_{i(t-1)} + \beta'_{2j} HS_{it} + \beta_{3j}{}' P_{i(t-1)} + \beta_{4j}{}' C_{i(t-1)} + \epsilon_{ij}\right) \qquad (Eq.2)$$

$$\epsilon_i = (\epsilon_{i1}\ \epsilon_{i2}\ \epsilon_{i3}) \sim i.i.d\ N(0,1)$$

This second model is thus estimated on six subsamples of children (observed at least at two waves): sons coresiding with their parent at $t-1$ (N= 16,735 observations), daughters coresiding with their parent at $t-1$ (N= 11,917 observations), sons living at less than 25 km

[6] We also estimated this first model on two subsamples according to the child's gender. But the estimated average marginal effects for sons and daughters were very close to each other.

from their parent's dwelling at $t-1$ (N= 33,236 observations), daughters living at less than 25 km from their parent's dwelling at $t-1$ (N= 33,849 observations), sons living at more than 25 km from their parent's dwelling at $t-1$ (N= 21,867 observations) and daughters living at more than 25 km from their parent's dwelling at $t-1$ (N= 23,135 observations). The same set of explaining variables as in the first model is introduced, but they are measured at wave $t-1$[7]. However, we add three dichotomous variables measuring the health and disability shocks that have affected the parent between waves $t-1$ and t (HS_i): an indicator of whether the categorical variable measuring the number of chronic diseases has increased, an indicator of whether the hierarchical index of disability has increased and an indicator of whether the categorical variable measuring the score at the cognitive test has decreased. These health shocks of parents affect a considerable number of observations in our sample: 17% of parent/child couples observed at two waves are concerned by an increased value of the parent's index of disability, 26% by a decrease in the parent's cognitive functioning and 35% by an increase in the parent's number of chronic diseases. The share of observations concerned by these three shocks increases significantly with the parent's age: the share of observations concerned by an increase in the disability index goes from 9% if the parent is younger than 55 to 37% if the parent is 85+, it goes from 22% to 30% for cognition and from 24% to 37% for chronic diseases.

This second model helps to better account for the dynamics of location choices than the first pooled model, since it enables to focus on the relationship between health shocks of a parent and the residential mobility of children. It also limits endogeneity biases in the relationship between parental health and geographical distance. Especially, focusing on different subsamples of children according to their location choice at $t-1$ should reduce the endogeneity bias due to unobserved factors affecting both parental health and the location choices made by children earlier in their life. Finally, this second model is better suited to our geographical distance variable than a standard panel model. A panel model would require the distance variable to be either continuous or dichotomous, and treat coresidence as the limited case of close proximity. However, it will appear clearly below that coresidence stands out as different. Another reason for not using a panel model is that it would exclude all the observations of children staying at the same distance, although staying coresident or at close proximity could be the direct consequence of health shocks affecting a parent.

Both the first and second models include country and waves indicators. The error terms are clustered at the family level.

4. Results

4.1 Descriptive statistics

Table 1 provides descriptive statistics of our sample according to the geographical distance between parents and children. Some 20% of children coreside, 48% live at less than 25 kilometres (without coresiding) and 32% live at more than 25 km from their parent.

[7] In the second model, we also control for the time difference between waves $t-1$ and t.

Children coresiding with their parent are significantly younger than those in the other groups on average (32 years old, against 39 to 40 years old for non-coresident children). The share of women and married children is significantly smaller among those coresiding with their parent. An educational gradient of geographical distance can also be noticed. The share of low-educated children is 21.3% among the group of coresidents, 17.9% among those living at less than 25 kilometres and 10.8% among the group of children living further away. Conversely, the share of highly educated children is greater among the group of children living at more than 25 kilometres from their parent's dwelling. Employed children are underrepresented among the group of children coresiding with their parents. On the contrary, the share of children still at school is significantly lower among the group of individuals living close without coresiding: either they still coreside if their school is close enough from their parent, or they live far away. Children having several siblings are also overrepresented among the group of those living at more than 25 kilometres away from the parent's dwelling.

Children seem to live closer to biological parents (with or without coresidence) and to widowed ones (without coresidence) but live further away from divorced parents. Distance from the parent's dwelling is positively associated with the level of income and assets of the parent's household. By contrast, the proportion of non-coresiding children living far away is negatively correlated with their parent's health and disability issues.

Figure 1 shows that adult children live their parents' home mostly between 18 and 35 years old: 63% of children coreside between 18 and 25 against 11-13% after age 35. Above that age the distribution of the distance between children and parents remains stable, which suggests little housing transitions after age 35. **Figure 2** stresses that the proportion of children living at more than 25 kilometres from their parents is higher in the North (around 45%) than in other European country groups at each age (30-35% in Central and Eastern Europe and around 20% in the South). More specifically, after age 30, the share of coresiding children is close to zero in the North but remains high in Southern and Eastern countries.

Concerning housing transitions, **Table 2** indicates that non-coresiding children rarely change distance between two waves. Around 94% of them stay in the same distance group. In particular, only 1.5% of those living close and 1.2% of those living far "re-coreside" with their parents.

Figure 3 describes the "de-coresidence" of children according to their parents' disability status. We observe that children tend to de-coreside less when their parents are severely impaired. For instance, 31% of coresiding children aged 25-30 move when the parent has no limitations against only 24% when the parent has restrictions in ADLs. This effect is observed at all ages. When they move out, children of disabled parents also tend to move closer (in yellow on **Fig. 3**) rather than far away (in red). Conversely, there is no clear correlation between parental health and housing transitions of non-coresiding children (not shown here).

4.2 Pooled model of children's location choices

Table 3 provides the estimates of the first pooled multinomial Probit model related to the distance between a child and his/her parent. We explore the effect of family in-kind transfer motives on children's location choices and, more specifically, we investigate the relationship between parental health and geographical proximity. Overall, the results stress that children's location choices tend to be mainly affected by downward in-kind transfer motives (from parents to children). Upward service motives (from children to parents) appear to have less impact. Indeed, the magnitude of the effect of children's characteristics is much higher than that of parental characteristics. In other words, children's location choices seem to be influenced by their own economic or family situation, but not much by the financial, personal and health situation of their parents. Moreover, children tend to be more inclined to provide emotional support rather than informal care.

4.2.1. Effect of children characteristics

Adult children still at school have a higher probability of either coresiding or of living far away from their parents (>25 km). This is in line with the fact that being highly educated significantly increases the child's probability of living far away (+16.4 pp). It is likely that highly educated children have a greater propensity to move far away to access a specific college or to find new labour market opportunities.

Being married goes with living separately from the parents. Or put differently, unmarried children are more likely to stay with their parents. Having children also reduces the probability to coreside, probably because it is linked to more stable and permanent couples, and also due to space constraints in the parents' home. On the other hand, having children is associated with a higher probability of living close to the parent (<25 km), without coresiding. It is compatible with grandparents helping with grandchild care.

The probability of coresidence is greater for divorced (+8.1 pp) and widowed (+3.7 pp) children than for married ones. This may be explained by the fact that divorce is linked to the loss of a home for at least one of the spouses and to financial and emotional hardships. This can drive children to "re-coreside" with their parents.

Lastly, when a child has siblings, it reduces its probability of coresiding and increases that of living far away. This may be related to family interactions/bargaining and should be explored more deeply[8]. In this model, being the eldest has no effect.

4.2.2. Effect of parental characteristics

[8] In a future version of the paper, we could disentangle this effect by adding additional variables related to siblings' characteristics (e.g., gender, marital status, work status, education, etc.). The reduction in proximity with sibship size could be also mechanical. Suppose the aim, or the rule, is that at least one child lives nearby. The probability for a given child to live nearby is 1/n. Then the more siblings the lower the probability one of them is. Space constraints in the parental home play in the same direction for coresidence.

Children coreside more with a widowed parent (+2.1 pp compared to parents in couple), maybe to provide her/him with emotional support. Conversely, the parent's divorce[9] is negatively associated with coresidence (-6.6 pp) and positively with the probability of living far away. Consistently with what Pezzin and Schone (1999) observe in the US, divorce seems to weaken intergenerational family ties in Europe. Going in the same direction is the fact that children live further away from a non-biological parent (+9.6 pp probability of living at more than 25 km). It is also possible that children do not want to bear the financial consequences of the divorce of their parents. Whatever the reason, old divorced parents may be at risk of loneliness and lack of care in the future.
The same financial reason could partly explain why children coreside less with unemployed or permanently sick parents and live further away from them. In addition, children live further away from parents with high income or highly educated parents (+7.4 pp). Being educated and higher incomes go with higher residential mobility, probably both for parents and children. However, *ceteris paribus*, children tend to coreside slightly more with wealthy parents (+1 to 2 pp), which was not observed in **Table 1**. This may reflect their expecting an inheritance, or the larger space in the home of wealthier parents.
Children with parents living in rural areas are more likely both to coreside more (+2.2 pp) and to live far away (+4.4 pp). It could be linked to an agricultural occupation inducing coresiding, or to being forced to move away from a rural area to get an education and find a job, more than children whose parents live in cities. Lastly, norms or economic conditions could explain why children coreside more and are less likely to live far away in Southern and Eastern Europe.

4.2.3. Effect of parental health

Parental health characteristics have only a moderate effect (less than 2 pp) on the location choices of children. Health and disability problems of the parent (number of chronic diseases, limitations and cognitive impairments) are negatively associated with the probability that a child lives at more than 25 km. The number of chronic diseases is positively correlated with close proximity to the parent (+1.4 pp) while disability and cognitive impairments are linked to coresidence (+1.1 to 1.3 pp). This difference between chronic diseases on one side and disability and cognitive problems on the other may be explained by the fact that public health insurance is widespread while in most countries the social systems are less generous for long-term care. Also the type of "care" needed by a parent who has a specific chronic disease, such as cancer, differs widely from that needed for one who has mobility problems.

4.3 Transition model

Tables 4, 5 and 6 provide the results of the transition models estimating the impact of parental health and disability shocks between two waves on adult children's housing transitions, separately for sons and daughters. **Table 4** focuses on children initially coresiding with their parents (in $t-1$), **Table 5** on children initially living close (<25 km) without coresiding and **Table 6** on children initially living far away (>25 km). Such models help accounting for the

[9] According to our definition a divorced (or widowed) parent is not living in couple.

dynamics of location choices and should limit endogeneity biases in the relationship between parental health and geographical distance compared to the previous pooled model.

The location choices of children living initially at more than 25 km from their parents are not impacted by the deterioration of parental health (**Table 6**). Similarly, that parental health shocks mostly affect the trade-off between coresiding and living close, and not really the probability to move at more than 25 km (**Tables 4 and 5**). Children living far away from their parents or planning to move far away have probably specific unobserved characteristics that make them unlikely to respond to parental health deteriorations. They may have important work or family constraints, they may be less altruistic, less impacted by social norms. They may also, since they are more educated, hence have probably a higher income, help the parents financially or compensate the other siblings living closer and caring. We leave investigating siblings' interactions for future research. In addition, the effect of health shocks seems stronger on children who initially coreside with their parents. It suggests than once children have left home, they rarely move closer to their parents when the latter have health or disability issues.

The differences observed in the pooled model between chronic diseases, disability and cognition are confirmed (**Tables 4 and 5)**. An increase in the number of chronic diseases reduces the probability that coresiding sons stay with their parents (-1.2 pp in Table 4) but increases their probability to move at less than 25 km rather than far away. Similarly, sons living close to their parents have a slightly lower probability to "re-coreside" (-0.3 pp in Table 5) when the number of chronic diseases increases. This is in line with the fact that chronic illnesses require skilled care that cannot be provided by children. Since healthcare expenditures are well-covered in most European countries, children may prefer to live independently (but at less than 25 km) to cope with the stress of having a sick parent.

By contrast, a deterioration of the level of disability increases the sons' probability of staying in the same dwelling than their parent (+2.1 pp, Table 4) and to "re-coreside" for sons living close initially (+0.6 pp, Table 5). It reduces their probability of de-coresiding (-1.5 pp in Table 4) or staying at less than 25 km without coresiding (-1.0 pp in Table 5). Similarly, a deterioration of the cognitive functioning of the parent increases the probability of coresiding sons to stay in the same dwelling (+2.1 pp, Table 4).[10]

Although some of such effects seem confirmed for daughters, especially the positive effect of the parent's cognitive decline on her probability of "re-coresiding" (1.6 pp in Table 5), most of the effects of parental health shocks on housing transitions are even more tenuous for daughters than for sons. The lower reaction of daughters to parental health shocks is somewhat difficult to explain. It is well known that at a given age a daughter is more likely to have moved out of the parental home than a son (Angelini & Laferrère, 2015). Her move might influence her brother's choice. This should be investigated further, but might emphasize that their location choices are constrained by other motives, such as their husband's situation on the labour market,

[10] Also a large majority of parents live with a spouse, who can be the carer in case of disease, while disabilities occur at older age, when the parent is likely to be widowed, or when both may need care at the same time. Controlling for the parent's age does not fully take it into account.

their family obligations or the location and health situation of their parents-in-law. Nothing is provided on all those factors in our data.

5. Conclusion and discussion

This article aims to explore the location choices of European adult children from an empirical perspective, using longitudinal data from five waves of the SHARE survey. Specifically, we investigate to what extent location choices of children are associated with family in-kind transfer motives. To that effect, we study the relationship between parental health and disability and the geographical proximity to their children.

Our results emphasize that children location choices tend to be affected by in-kind transfer motives from parents to children. Especially, being divorced or having children both increase the children's propensity to coreside with or live close to their parents. It highlights the specific role of parents for providing their children with financial or emotional support and grandparental care.

In contrast, parental characteristics, and especially those who can be considered as linked to in-kind transfer motives from children to parents, are less significant drivers of European children's location choices. Thus, in the pooled model, the magnitude of the effect of the parents' health and disability status on a child's probability of living close remains very moderate. In addition, in the transition models, parental health shocks have only moderate effects on children's housing transitions. It mainly affects children (especially sons), who still live with their parents. It suggests that once children have left home, they rarely move closer to their parents to help them with health and disability problems.[11] Consequently, if in-kind support for the disabled elderly requires geographical proximity, only the children already living close to their parents are likely to be involved in the provision of informal care. According to our pooled model, the children who coreside or live at less than 25 km generally have lower education levels, are unmarried and are more likely to be unemployed. They are the children with the lowest opportunity cost, both in terms of time and money, but also whose risk of precarity is already especially high.

In addition, economic and social changes should increase the geographical distance between family members, and more specifically between parents and daughters. Indeed, European children pursue higher education more frequently than twenty or thirty years ago and should live further away. According to our estimates, women's labour market participation and higher divorce rates of parents also point to an increase in the geographical distance. These evolutions could have negative consequences on the future supply of family care. Relying mostly on family support in the next decades could especially put daughters in a difficult position: while their opportunity cost to provide care has been increasing, they might remain more constrained than sons to involve themselves in caregiving activities by family and social norms.

[11] We leave for further research adding shocks happening on the children's side, such as marriage, divorce, unemployment, retirement, finishing school, or the birth of a child.

In this context, which public policies could be implemented at national levels to support the disabled elderly? A first option would be to encourage children to get involved in caregiving activities and to support them. This could be achieved through a better articulation of caring responsibilities with paid employment and through respite, counselling and training for informal caregivers. In our view, this option is desirable only if children really wish to provide informal care and if parents are comfortable enough with that. And, according to this article, the burden of informal care provision would mainly be placed on children having the highest risk of precarity, but also the lowest opportunity cost, which is what is to be expected.

Alternatively, in line with social evolutions, long-term care could be more often provided formally. Children would provide emotional support, help with domestic tasks or financial support if they live far away and are wealthy enough to pay, while personal care would be provided professionally, as is the case in Nordic European countries. This second option may be perceived as more expensive: it would certainly need a substantial increase in public and private expenditures devoted to long-term care and raise the issues of "how to finance it?" (public or private insurance, taxes, …) as well as "who is going to bear the cost?" (the general taxpayer, the baby-boomers themselves, their children, only the richest?). However, these costs should first be balanced with the true and complete costs of family support. Adding opportunity costs, psychological costs as well as social costs for the caregiver can induce to favour a "costly" nursing home admission. Especially if the expected positive impacts of professional care in terms of quality of care, and the protective effects of formal care against the emergence of tensions and conflicts between family members are taken into account.

Our preliminary study is faced with some limitations. First, several factors potentially explaining the (earlier choices of) distance between parents and children, such as family norms, are endogenous in our context. Even if focusing on transitions attenuates some of the channels of endogeneity, panel models with individual fixed effects could be estimated to account for time-invariant individual unobserved heterogeneity. To limit the endogeneity issues, we could also use the SHARELIFE questionnaire of wave 3 and get specific information about each parent's early life circumstances. Thus, we could try to instrument some of our parents' health outcomes after 50 by variables measuring their childhood or work circumstances. Natural extension of this work would be to add the shocks happening on the children's side, such as marriage, divorce, unemployment, retirement, finishing school, or the birth of a child and replace, introduce children's interactions and replace the cut-off of 25 km by 5 or 100 km to check the extent to which our results are sensitive to this choice.

Acknowledgements We thank the participants of the ODESSA seminar at the University of Sheffield and of the LEDa-LEGOS seminar at the University Paris-Dauphine for their comments on a previous version of this work.

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Tables et Figures

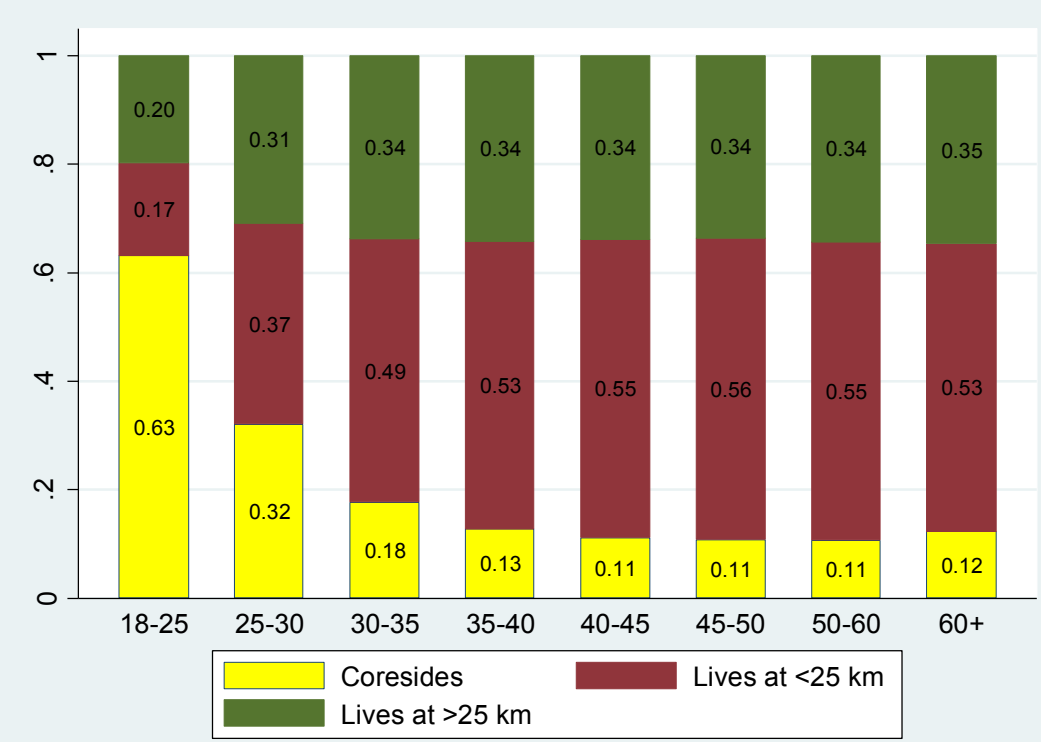
Table 1 – Descriptive statistics according to the distance to the parent's dwelling

		Distance to the parent's dwelling			
		Coresidence	**Less than 25 km**	**More than 25 km**	**Total**
	N	57,861	138,945	93,788	290,594
Characteristics of children					
Age		32.2***	40.2	39.2***	38.3
Gender	Female	42.4%***	50.5%	51.2%***	49.1%
Marital status	Married	21.7%***	68.0%	58.9%***	55.9%
	Never Married	73.7%***	23.9%	33.4%***	36.9%
	Divorced	4.1%***	7.2%	6.8%***	6.5%
	Widowed	0.5%***	0.9%	0.8%	0.8%
Education	Low (ISCED 1-2)	21.3%***	17.9%	10.8%***	16.3%
	Medium (ISCED 3-4)	52.8%***	50.2%	41.4%***	47.9%
	High (ISCED 5-6)	26.0%***	32.0%	47.9%***	35.9%
Employment	Retired	1.5%***	2.4%	2.0%***	2.1%
	Employed (or self-empl.)	59.9%***	83.4%	80.5%***	77.8%
	Unemployed	11.4%***	4.4%	3.7%***	5.6%
	Sick or disabled	2.1%***	1.3%	1.0%***	1.4%
	Homemaker	1.8%***	3.9%	3.4%***	3.4%
	At School	18.6%***	2.3%	6.2%***	6.8%
	Other	4.7%***	2.2%	3.1%***	3.0%
Number of siblings	0	14.3%***	10.8%	9.8%***	11.2%
	1	50.3%***	46.2%	44.5%***	46.5%
	2 or 3	35.4%***	43.0%	45.7%***	42.4%
Has a child	Yes	25.7%***	70.8%	60.9%***	58.6%
Characteristics of parents					
Age		61.6***	66.9	66.2***	65.6
Gender	Female	57.9%	58.3%	56.9%***	57.8%
Biological parent	Yes	98.2%***	95.9%	94.1%***	95.8%
Marital status	Couple	78.2%***	73.1%	74.3%***	74.5%
	Single Widowed	14.0%***	17.0%	14.6%***	15.6%
	Single Divorced	4.9%***	7.1%	7.8%***	6.9%
	Single Other	2.9%	2.8%	3.2%***	3.0%
Living area	Rural	35.4%***	30.4%	34.8%***	32.8%

		Coresidence	Less than 25 km	More than 25 km	Total
Characteristics of parents					
Education	Low (ISCED 1-2)	44.1%***	46.8%	34.9%***	42.4%
	Medium (ISCED 3-4)	37.0%***	35.8%	38.1%***	36.8%
	High (ISCED 5-6)	18.9%***	17.4%	27.0%***	20.8%
Employment	Retired	39.7%***	60.6%	58.9%***	55.9%
	Employed (or self-empl.)	39.0%***	21.9%	27.1%***	27.0%
	Unemployed	3.3%***	2.3%	2.4%	2.6%
	Sick or disabled	3.2%**	3.0%	2.8%**	2.9%
	Homemaker	13.5%***	11.0%	7.7%***	10.4%
	Other	1.3%*	1.2%	1.2%	1.2%
Value of hhd income per CU (€/year)		16,235***	23,658	25,669***	22,829
Value of hhd net global assets (€)		256,999**	261,626	293,153***	270,880
Number of chronic diseases		1.5***	1.8	1.7***	1.7
Score at the 10-words memory test	(0: low, 10: excellent)	5.2***	5.1	5.4***	5.2
Hierarchical index of disability	None	68.4%***	63.1%	67.5%***	65.6%
	Mobility	23.1%***	26.9%	24.2%***	25.3%
	Mobility + IADL	3.8%***	4.6%	3.8%***	4.2%
	Mobility + IADL + ADL	4.7%***	5.4%	4.5%***	4.9%

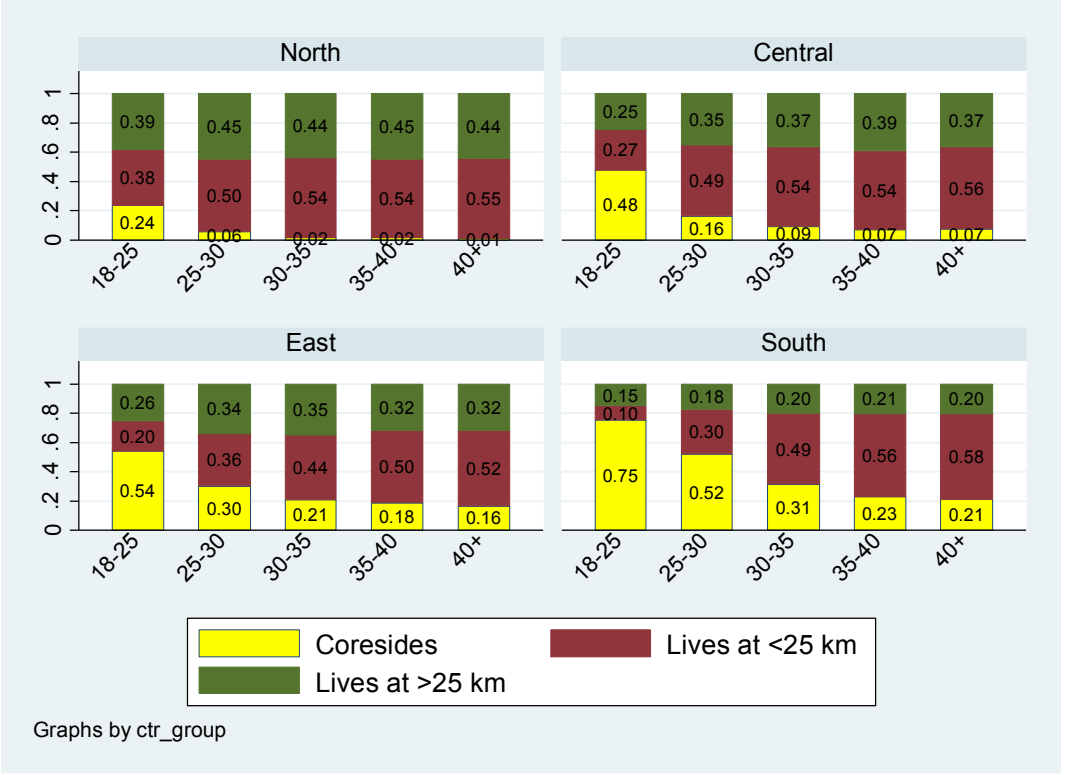
Sample: SHARE survey waves 1,2,4,5,6. 290,594 pooled observations at the child level, corresponding to 148,285 parent/child couples and to 102,967 distinct children in 17 different countries.
Note: *, **, *** indicate a significant difference with the coefficient for the "Less than 25km" category, at the 10%, 5% or 1% level respectively.

Figure 1 – Distance to parents by age group



Sample: SHARE waves 1,2,4,5,6. 290,594 pooled observations at the child level corresponding to 148,285 parent/child couples and to 102,967 distinct children in 17 different countries.

Figure 2 – Distance to parents by age and country group



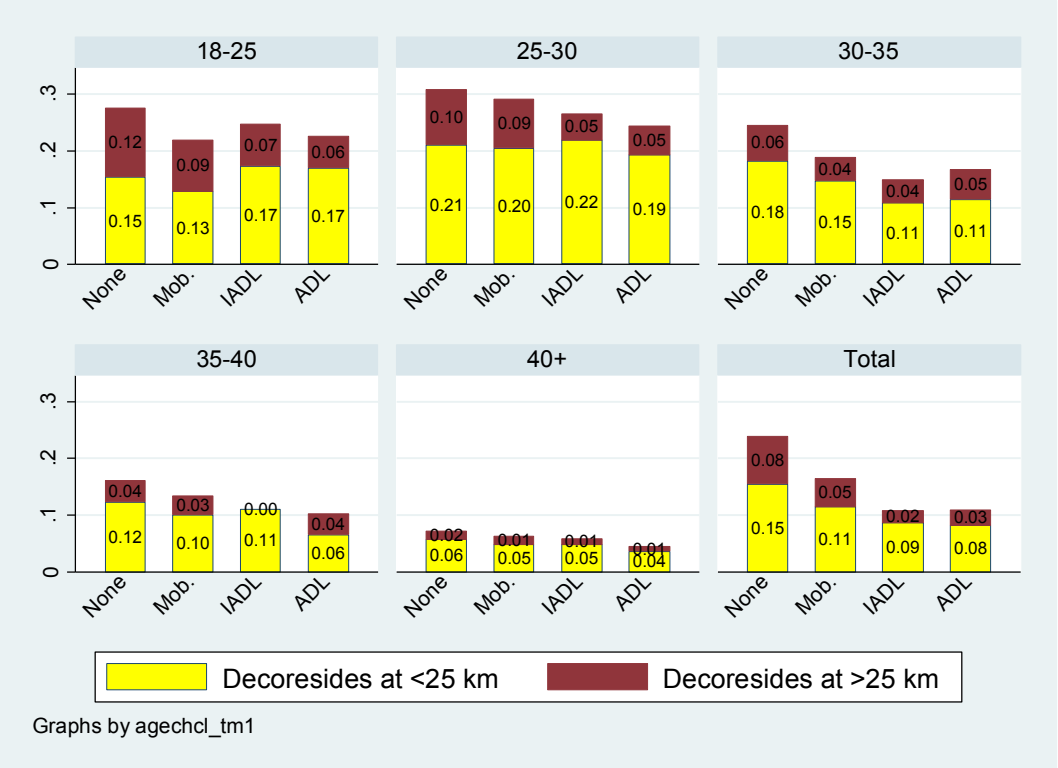
Sample: SHARE waves 1,2,4,5,6. 290,594 pooled observations at the child level, corresponding 148,285 parent/child couples and to 102,967 distinct children in 17 different countries.

Table 2 – Children's housing transitions between two survey waves

Distance (wave $t-1$)	Distance (wave t)			
	Coresidence	**<25 km**	**>25 km**	**Total**
Coresidence	22,693	4,063	2,088	28,844
	78.7%	14.1%	7.2%	100.0%
<25 km	1,025	63,233	2,605	66,863
	1.5%	94.6%	3.9%	100.0%
>25 km	529	2,146	42,225	44,900
	1.2%	4.8%	94.0%	100.0%
Total	24,247	69,442	46,918	140,607
	17.2%	49.4%	33.4%	100.0%

Sample: SHARE waves 1,2,4,5,6. 140,607 observations corresponding to child/parent couples observed at two waves, in 17 different countries. Frequencies and row percentages are displayed.

Figure 3 – "De-coresidence" by age group and parent's disability level



Sample: SHARE waves 1,2,4,5,6. 28,844 observations corresponding to child/parent couples observed two waves and coresiding with their parent at wave t-1, in 17 different countries.

Table 3 – Average marginal effects of the first "pooled" model (1)

		Child's distance to the parent's dwelling (N=290,594 observations)		
		Pr (cores.)	**Pr (<25 km)**	**Pr (>25km)**
Characteristics of the parent				
Parent: gender	Father	*Ref.*	*Ref.*	*Ref.*
	Mother	**+0.019*** (0.002)**	**-0.012*** (0.002)**	**-0.007*** (0.002)**
Parent: "marital" status	In couple	*Ref.*	*Ref.*	*Ref.*
	Alone widowed	**+0.021*** (0.003)**	-0.005 (0.005)	**-0.016*** (0.005)**
	Alone divorced	**-0.066*** (0.003)**	**+0.027*** (0.006)**	**+0.040*** (0.006)**
	Alone other	**-0.037*** (0.005)**	-0.004 (0.008)	**+0.042*** (0.009)**
Parent: biological parent	Yes	*Ref.*	*Ref.*	*Ref.*
	No	**-0.075*** (0.005)**	**-0.021*** (0.007)**	**+0.096*** (0.007)**
Parent: living area	Urban	*Ref.*	*Ref.*	*Ref.*
	Rural	**+0.022*** (0.002)**	**-0.066*** (0.004)**	**+0.044*** (0.004)**
Parent: education	Low (ISCED 1-2)	*Ref.*	*Ref.*	*Ref.*
	Medium (ISCED 3-4)	**-0.007*** (0.003)**	**-0.021*** (0.004)**	**+0.029*** (0.004)**
	High (ISCED 5-6)	**-0.020*** (0.003)**	**-0.054*** (0.005)**	**+0.074*** (0.005)**
Parent: current job situation	Retired	*Ref.*	*Ref.*	*Ref.*
	Empl. or self-empl.	+0.000 (0.003)	**+0.014*** (0.004)**	**-0.014*** (0.004)**
	Unemployed	**-0.043*** (0.005)**	+0.013 (0.008)	**+0.031*** (0.008)**
	Permanently sick	**-0.020*** (0.005)**	+0.006 (0.008)	**+0.014* (0.008)**
	Homemaker	**-0.005* (0.003)**	**+0.017*** (0.005)**	**-0.011** (0.005)**
	Other	**-0.033*** (0.006)**	+0.012 (0.010)	**+0.021** (0.010)**
Parent: income per CU (hhd)	Q1	*Ref.*	*Ref.*	*Ref.*
	Q2	**-0.040*** (0.003)**	**+0.015*** (0.004)**	**+0.025*** (0.004)**
	Q3	**-0.061*** (0.003)**	**+0.023*** (0.004)**	**+0.038*** (0.004)**
	Q4	**-0.092*** (0.003)**	**+0.037*** (0.004)**	**+0.055*** (0.004)**
Parent: net worth (hhd)	Q1	*Ref.*	*Ref.*	*Ref.*
	Q2	-0.003 (0.003)	**+0.007* (0.004)**	-0.004 (0.004)
	Q3	**+0.011*** (0.003)**	+0.005 (0.004)	**-0.016*** (0.004)**
	Q4	**+0.021*** (0.003)**	+0.003 (0.005)	**-0.024*** (0.005)**

Table 3 – Average marginal effects of the first "pooled" model (2)

		Child's distance to the parent's dwelling (N=290,594 observations)		
		Pr (cores.)	**Pr (<25 km)**	**Pr (>25km)**
Parent: nb of chronic diseases	0	*Ref.*	*Ref.*	*Ref.*
	1	+0.001 (0.002)	+0.003 (0.003)	-0.004 (0.003)
	2	+0.002 (0.002)	+0.006 (0.004)	**-0.008** (0.004)**
	3+	-0.002 (0.003)	**+0.014*** (0.004)**	**-0.012*** (0.003)**
Parent: index of disability	None	*Ref.*	*Ref.*	*Ref.*
	Mobility	+0.002 (0.002)	+0.001 (0.003)	-0.004 (0.003)
	Mobility + IADL	**+0.011*** (0.004)**	+0.007 (0.006)	**-0.018*** (0.006)**
	Mob. + IADL + ADL	**+0.011*** (0.004)**	-0.001 (0.006)	**-0.010* (0.006)**
Parent: score cognitive test	High (10 to 7)	*Ref.*	*Ref.*	*Ref.*
	Medium high (6 to 5)	**+0.007*** (0.002)**	+0.003 (0.003)	**-0.011*** (0.003)**
	Medium low (4 to 3)	**+0.011*** (0.002)**	**+0.006* (0.004)**	**-0.018*** (0.004)**
	Low (2 to 0)	**+0.013*** (0.003)**	+0.006 (0.006)	**-0.019*** (0.005)**
Characteristics of the child				
Child: gender	Son	*Ref.*	*Ref.*	*Ref.*
	Daughter	**-0.028*** (0.002)**	**+0.019*** (0.003)**	**+0.008** (0.003)**
Child: marital status	Married	*Ref.*	*Ref.*	*Ref.*
	Never married	**+0.179*** (0.004)**	**-0.140*** (0.005)**	**-0.039*** (0.004)**
	Divorced	**+0.081*** (0.005)**	**-0.070*** (0.007)**	**-0.011* (0.006)**
	Widowed	**+0.037*** (0.011)**	**-0.032* (0.018)**	-0.006 (0.017)
Child: education	Low (ISCED 1-2)	*Ref.*	*Ref.*	*Ref.*
	Medium (ISCED 3-4)	**-0.016*** (0.003)**	**-0.019*** (0.005)**	**+0.035*** (0.005)**
	High (ISCED 5-6)	**-0.049*** (0.004)**	**-0.114*** (0.005)**	**+0.164*** (0.005)**
Child: current job situation	Retired	*Ref.*	*Ref.*	*Ref.*
	Empl. or self-empl.	**+0.031*** (0.006)**	**-0.025** (0.010)**	-0.005 (0.010)
	Unemployed	**+0.107*** (0.007)**	**-0.068*** (0.012)**	**-0.039*** (0.011)**
	Permanently sick	**+0.130*** (0.010)**	**-0.063*** (0.014)**	**-0.066*** (0.014)**
	Homemaker	**+0.027*** (0.008)**	**-0.080*** (0.013)**	**+0.053*** (0.013)**
	At school	**+0.104*** (0.008)**	**-0.201*** (0.012)**	**+0.097*** (0.012)**
	Other	**+0.062*** (0.008)**	**-0.124*** (0.012)**	**+0.063*** (0.012)**
Child: has a child	No	*Ref.*	*Ref.*	*Ref.*
	Yes	**-0.035*** (0.003)**	**+0.087*** (0.005)**	**-0.052*** (0.004)**

Table 3 – Average marginal effects of the first "pooled" model (3)

		Child's distance to the parent's dwelling (N=290,594 observations)		
		Pr (cores.)	**Pr (<25 km)**	**Pr (>25km)**
Child: birth rank # nb siblings	No siblings	*Ref.*	*Ref.*	*Ref.*
	Oldest # 1 siblings	**-0.042*** (0.004)**	**+0.016*** (0.006)**	**+0.026*** (0.005)**
	Not oldest # 1 sib.	**-0.047*** (0.004)**	**+0.011* (0.006)**	**+0.035*** (0.006)**
	Oldest # 2/3 sib.	**-0.076*** (0.005)**	**+0.011* (0.007)**	**+0.065*** (0.006)**
	Not oldest # 2/3 sib.	**-0.076*** (0.006)**	+0.009 (0.006)	**+0.068*** (0.006)**
Other control variables				
Country	Sweden	*Ref.*	*Ref.*	*Ref.*
	Denmark	-0.006 (0.004)	**+0.046*** (0.012)**	**-0.040*** (0.012)**
	The Netherlands	**+0.042*** (0.004)**	**+0.097*** (0.011)**	**-0.139*** (0.011)**
	France	**+0.053*** (0.004)**	**-0.055*** (0.010)**	+0.003 (0.010)
	Germany	**+0.121*** (0.005)**	+0.004 (0.010)	**-0.125*** (0.010)**
	Switzerland	**+0.073*** (0.006)**	**+0.048*** (0.012)**	**-0.121*** (0.012)**
	Austria	**+0.128*** (0.006)**	**+0.076*** (0.011)**	**-0.204*** (0.010)**
	Luxembourg	**+0.103*** (0.008)**	**+0.074*** (0.015)**	**-0.176*** (0.015)**
	Belgium	**+0.114*** (0.004)**	**+0.128*** (0.010)**	**-0.242*** (0.010)**
	Estonia	**+0.118*** (0.005)**	**-0.093*** (0.010)**	**-0.025** (0.011)**
	Czech Republic	**+0.186*** (0.006)**	+0.001 (0.010)	**-0.187*** (0.010)**
	Poland	**+0.287*** (0.008)**	**-0.090*** (0.012)**	**-0.197*** (0.013)**
	Slovenia	**+0.336*** (0.007)**	**-0.046*** (0.010)**	**-0.291*** (0.010)**
	Portugal	**+0.198*** (0.010)**	**-0.026* (0.015)**	**-0.172*** (0.015)**
	Greece	**+0.282*** (0.007)**	**-0.077*** (0.010)**	**-0.205*** (0.011)**
	Spain	**+0.224*** (0.008)**	-0.009 (0.013)	**-0.216*** (0.010)**
	Italy	**+0.270*** (0.006)**	**-0.019* (0.010)**	**-0.251*** (0.010)**
Wave	1	*Ref.*	*Ref.*	*Ref.*
	2	-0.001 (0.002)	-0.002 (0.003)	+0.003 (0.003)
	4	-0.002 (0.003)	+0.002 (0.004)	+0.000 (0.004)
	5	**-0.006** (0.003)**	+0.005 (0.004)	+0.001 (0.004)
	6	+0.001 (0.003)	+0.002 (0.004)	-0.003 (0.004)

Sample: SHARE survey waves 1,2,4,5,6. 290,594 pooled observations at the child level, corresponding to 148,285 parent/child couples and to 102,967 distinct children.
Note: The standard errors are in parenthesis. *, **, *** indicate a significant difference from 0 at the 10%, 5% or 1% level respectively. *Ref.* designates the reference group for the corresponding variable. We also control for the child's age, the child's squared age, the parent's age and the parent's squared age. As their average marginal effects vary with time, their values cannot be included in the table.

Table 4 – Second model: effect of parental health and disability status on the housing transitions of children **coresiding at $t-1$**

		Children: sons (N=16,735 obs.)			**Children: daughters (N=11,917 obs.)**		
		Pr (cores.) at t	**Pr (<25 km) at t**	**Pr (>25km) at t**	**Pr (cores.) at t**	**Pr (<25 km) at t**	**Pr (>25km) at t**
Parent's health and disability variables							
Parent: Nb of chronic diseases at $t-1$	0	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	1	+0.002 (0.008)	+0.000 (0.007)	-0.002 (0.005)	+0.005 (0.009)	-0.002 (0.008)	-0.003 (0.006)
	2	+0.002 (0.009)	+0.002 (0.008)	-0.005 (0.006)	+0.003 (0.011)	+0.001 (0.010)	-0.004 (0.007)
	3+	+0.004 (0.011)	-0.012 (0.010)	+0.008 (0.007)	+0.007 (0.014)	-0.010 (0.012)	+0.004 (0.009)
Parent: Chronic diseases: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	**-0.012* (0.007)**	**+0.012* (0.006)**	+0.000 (0.005)	+0.005 (0.009)	-0.006 (0.008)	+0.001 (0.006)
Parent: Index of disability at $t-1$	None	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Mobility	+0.010 (0.008)	-0.004 (0.007)	-0.005 (0.005)	+0.012 (0.010)	-0.006 (0.009)	-0.007 (0.007)
	Mobility + IADL	-0.022 (0.027)	**+0.052** (0.026)**	**-0.030** (0.012)**	+0.011 (0.030)	-0.003 (0.027)	-0.008 (0.020)
	Mob. + IADL + ADL	+0.020 (0.021)	-0.003 (0.018)	-0.016 (0.013)	+0.027 (0.026)	+0.001 (0.025)	**-0.029* (0.016)**
Parent: Disability: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	**+0.021** (0.009)**	**-0.015* (0.008)**	-0.006 (0.006)	-0.003 (0.012)	-0.006 (0.010)	+0.010 (0.009)
Parent: Score cognitive test at $t-1$	High (10 to 7)	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Medium high (6 to 5)	**+0.019** (0.008)**	**-0.013* (0.007)**	-0.007 (0.005)	-0.001 (0.009)	+0.006 (0.008)	-0.005 (0.006)
	Medium low (4 to 3)	**+0.031*** (0.011)**	-0.012 (0.009)	**-0.019*** (0.007)**	+0.013 (0.013)	-0.002 (0.011)	-0.011 (0.008)
	Low (2 to 0)	+0.017 (0.005)	-0.002 (0.016)	-0.015 (0.011)	-0.026 (0.023)	+0.028 (0.022)	-0.002 (0.026)
Parent: Cognition: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	**+0.020** (0.008)**	**-0.018*** (0.007)**	-0.002 (0.005)	**+0.016* (0.009)**	-0.009 (0.008)	-0.008 (0.006)

Sample: SHARE survey waves 1,2,4,5,6. 28,652 pooled observations of children coresiding with their parent at wave $t-1$ and observed at wave t.
Note: In each column, the average marginal effects in our sample are presented. The standard errors are in parenthesis. *, **, *** indicate a significant difference from 0 at the 10%, 5% or 1% level respectively. *Ref.* designates the reference group for the corresponding variable. For the parent, at $t-1$, we also control for: gender, "marital" status, being a biological parent, living area, education, current job situation, income per CU, net worth, age, squared age, number of chronic diseases, index of disability, score at the cognitive test. For the child, at $t-1$, we control for: gender, marital status, education, occupation (grouped into 4 categories), current job situation, birth rank # number of siblings, having a child, age and squared age. We also control for the time difference between waves $t-1$ and t, and for country and wave indicators.

Table 5 – Second model: effect of parental health and disability status on the housing transitions of children **living close (<25 km) at $t-1$**

		Children: sons (N=33,236 obs.)			Children: daughters (N=33,849 obs.)		
		Pr (cores.) at t	**Pr (<25 km) at t**	**Pr (>25km) at t**	**Pr (cores.) at t**	**Pr (<25 km) at t**	**Pr (>25km) at t**
Parent's health and disability variables							
Parent: Nb of chronic diseases at $t-1$	0	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	1	-0.003 (0.002)	+0.001 (0.004)	+0.002 (0.003)	+0.002 (0.002)	**-0.006* (0.003)**	+0.004 (0.003)
	2	-0.004 (0.002)	+0.000 (0.004)	+0.004 (0.003)	-0.001 (0.002)	-0.003 (0.004)	+0.003 (0.003)
	3+	**-0.005* (0.003)**	+0.003 (0.005)	+0.001 (0.004)	-0.002 (0.002)	+0.001 (0.004)	+0.001 (0.004)
Parent: Chronic diseases: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	**-0.003* (0.003)**	-0.000 (0.003)	+0.003 (0.003)	-0.001 (0.001)	-0.002 (0.003)	+0.003 (0.003)
Parent: Index of disability at $t-1$	None	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Mobility	+0.002 (0.005)	-0.001 (0.003)	-0.000 (0.003)	-0.000 (0.002)	+0.002 (0.003)	-0.002 (0.003)
	Mobility + IADL	+0.000 (0.005)	+0.007 (0.008)	-0.007 (0.006)	+0.006 (0.004)	-0.003 (0.008)	-0.003 (0.006)
	Mob. + IADL + ADL	+0.003 (0.004)	**-0.015* (0.009)**	+0.011 (0.008)	+0.002 (0.004)	+0.004 (0.007)	-0.006 (0.006)
Parent: Disability: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	**+0.006** (0.002)**	**-0.010*** (0.004)**	+0.004 (0.003)	**+0.004* (0.002)**	-0.002 (0.003)	-0.002 (0.003)
Parent: Score cognitive test at $t-1$	High (10 to 7)	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Medium high (6 to 5)	-0.000 (0.002)	+0.003 (0.003)	-0.003 (0.003)	-0.002 (0.002)	+0.001 (0.003)	+0.001 (0.003)
	Medium low (4 to 3)	-0.001 (0.002)	**+0.008* (0.005)**	**-0.008* (0.004)**	-0.000 (0.002)	+0.003 (0.004)	-0.003 (0.003)
	Low (2 to 0)	-0.003 (0.004)	+0.002 (0.007)	+0.001 (0.007)	+0.000 (0.004)	+0.004 (0.007)	-0.004 (0.006)
Parent: Cognition: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	+0.000 (0.002)	-0.000 (0.003)	-0.000 (0.003)	+0.002 (0.002)	-0.004 (0.003)	+0.002 (0.003)

Sample: SHARE survey waves 1,2,4,5,6. 67,085 pooled observations of children living at less than 25 km from their parent's dwelling at wave $t-1$ and observed at wave t.
Note: In each column, the average marginal effects in our sample are presented. The standard errors are in parenthesis. *, **, *** indicate a significant difference from 0 at the 10%, 5% or 1% level respectively. *Ref.* designates the reference group for the corresponding variable. For the parent, at $t-1$, we also control for: gender, "marital" status, being a biological parent, living area, education, current job situation, income per CU, net worth, age, squared age, number of chronic diseases, index of disability, score at the cognitive test. For the child, at $t-1$, we control for: gender, marital status, education, occupation (grouped into 4 categories), current job situation, birth rank # number of siblings, having a child, age and squared age. We also control for the time difference between waves $t-1$ and t, and for country and wave indicators.

Table 6 – Second model: effect of parental health and disability status on the housing transitions of children **living far away (>25 km) at $t-1$**

		Children: sons (N=21,867 obs.)			Children: daughters (N=23,135 obs.)		
		Pr (cores.) at t	**Pr (<25 km) at t**	**Pr (>25km) at t**	**Pr (cores.) at t**	**Pr (<25 km) at t**	**Pr (>25km) at t**
Parent's health and disability variables							
Parent: Nb of chronic diseases at $t-1$	0	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	1	+0.001 (0.002)	-0.002 (0.004)	+0.000 (0.004)	-0.001 (0.002)	+0.005 (0.004)	-0.004 (0.004)
	2	+0.001 (0.002)	+0.004 (0.005)	-0.005 (0.005)	+0.001 (0.002)	+0.003 (0.004)	-0.004 (0.004)
	3+	+0.002 (0.003)	+0.001 (0.005)	-0.003 (0.006)	-0.002 (0.002)	+0.001 (0.005)	+0.001 (0.005)
Parent: Chronic diseases: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	+0.003 (0.002)	+0.002 (0.004)	-0.006 (0.010)	-0.002 (0.002)	+0.004 (0.004)	-0.002 (0.004)
Parent: Index of disability at $t-1$	None	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Mobility	-0.002 (0.002)	+0.002 (0.004)	+0.000 (0.005)	-0.001 (0.002)	-0.000 (0.004)	+0.002 (0.004)
	Mobility + IADL	+0.008 (0.006)	+0.013 (0.012)	-0.020 (0.013)	+0.008 (0.007)	+0.011 (0.011)	-0.019 (0.012)
	Mob. + IADL + ADL	+0.006 (0.006)	-0.009 (0.008)	+0.003 (0.010)	+0.006 (0.006)	-0.002 (0.009)	-0.004 (0.010)
Parent: Disability: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	+0.004 (0.003)	+0.002 (0.004)	-0.006 (0.005)	+0.003 (0.002)	+0.002 (0.004)	-0.005 (0.005)
Parent: Score cognitive test at $t-1$	High (10 to 7)	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Medium high (6 to 5)	+0.003 (0.002)	+0.002 (0.004)	-0.005 (0.004)	-0.001 (0.002)	**+0.006* (0.004)**	-0.005 (0.004)
	Medium low (4 to 3)	+0.003 (0.003)	+0.004 (0.005)	-0.007 (0.006)	-0.002 (0.002)	+0.007 (0.005)	-0.005 (0.005)
	Low (2 to 0)	+0.005 (0.005)	+0.001 (0.009)	-0.007 (0.010)	-0.003 (0.004)	+0.012 (0.009)	-0.009 (0.009)
Parent: Cognition: deterioration btw $t-1$ & t	No	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
	Yes	+0.000 (0.002)	+0.003 (0.004)	-0.003 (0.004)	+0.001 (0.002)	+0.001 (0.004)	-0.002 (0.004)

Sample: SHARE survey waves 1,2,4,5,6. 45,002 pooled observations of children living at more than 25 km from their parent's dwelling at wave $t-1$ and observed at wave t.
Note: In each column, the average marginal effects in our sample are presented. The standard errors are in parenthesis. *, **, *** indicate a significant difference from 0 at the 10%, 5% or 1% level respectively. *Ref.* designates the reference group for the corresponding variable. For the parent, at $t-1$, we also control for: gender, "marital" status, being a biological parent, living area, education, current job situation, income per CU, net worth, age, squared age, number of chronic diseases, index of disability, score at the cognitive test. For the child, at $t-1$, we control for: gender, marital status, education, occupation (grouped into 4 categories), current job situation, birth rank # number of siblings, having a child, age and squared age. We also control for the time difference between waves $t-1$ and t, and for country and wave indicators.